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2018/2019

Motors | Automation | Energy | Transmission & Distribution | Coatings

# WEG Automation Catalog

## Power and Control Products



US300

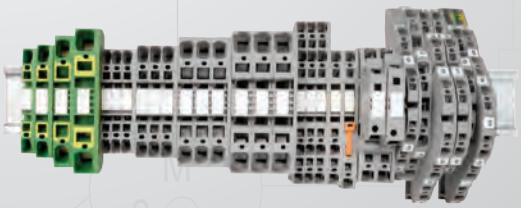
# LET'S START SOMETHING!











## Circuit Protection

- Molded Case Breakers
  - ✓ 15A - 2500A 100kAIC
  - ✓ UL489 Rated
  - ✓ Full Line of Accessories
- Miniature Circuit Breakers
  - ✓ 1 - 63A UL489 Rated
  - ✓ 1 - 63A UL1077 Rated
  - ✓ B, C, and D Curve

## Power Products

- Contactors
  - ✓ 9A - 800A
  - ✓ AC & DC Coils
- Overloads
  - ✓ Bi-Metalic to 840A
  - ✓ Solid State to 840A
- Manual Motor Protectors
  - ✓ Fractional to 100A
  - ✓ High Interrupt Rating

## Control Products

- Push Buttons
  - ✓ Full line 22mm Operators
  - ✓ Full line 30mm Operators
- Electric Relays
  - ✓ Timing
  - ✓ Montor Protection
- Terminal Blocks
  - ✓ Screw, Spring, Push-in Types Available

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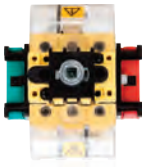


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# DWB - UL489 Listed

Introducing the New WEG DWB Series Molded Case Circuit Breakers. With its compact frame the DWB provides an economical circuit protection solution for Commercial & Industrial machinery applications. The DWB Series ranges from 20 to 600Amps and is available in 80% Standard and 100% Premium ratings.



## Standard Features:

- Compact Size
- Thermal- Magnetic trip unit
- Complete line of field installable accessories
- Rotary Handle and Mechanism
- Suitable for reverse feed applications
- Lugs included

UL File No. E310239

## DWB Catalog Number Sequence

| DWB | 100 | J | E | 100 | -3 | DX |
|---|---|---|---|---|---|---|

**Frame Size**

| |
|---|
| 100= 20-100A |
| 250= 80-250A |
| 400= 160-400A |
| 600= 228-600A |

**Application Rating**

| |
|---|
| E = 80% Standard |
| H = 100% Rated |

**Short Circuit Rating @ 480VAC**

| |
|---|
| C = 10 kA |
| J = 14 kA |
| P = 35 kA |

**Trip Unit**

| |
|---|
| DX= Fixed Thermal & Fixed Magnetic |
| DF= Adjustable Thermal & Fixed Magnetic |
| DA= Adjustable Thermal & Magnetic |

**Number of Poles**

| |
|---|
| 3 |

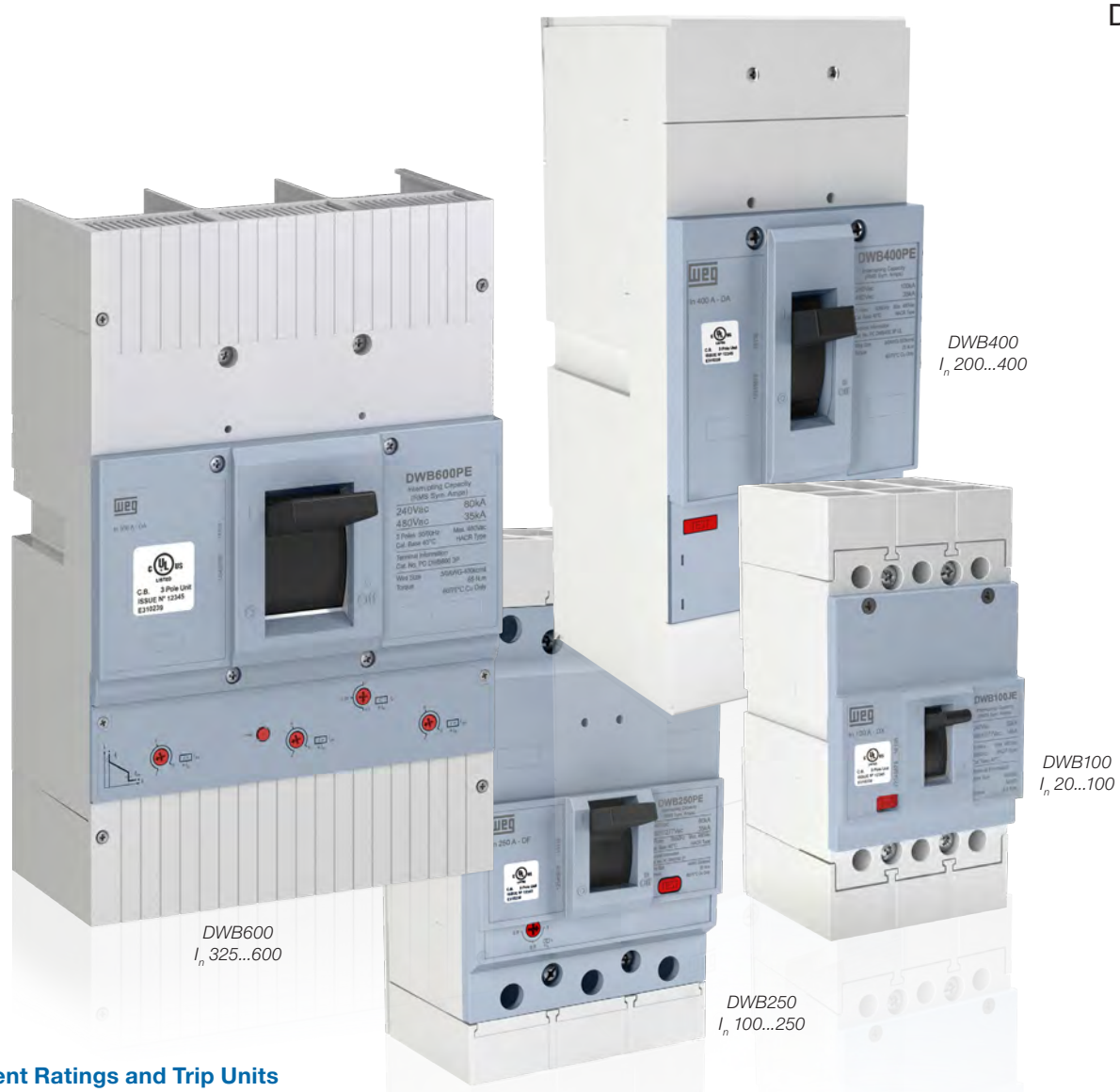
**Amperage**

| |
|---|
| DWB100 |
| 20,25,30,40,50,60,70,80,90,100 |
| DWB250 |
| 100, 125, 150, 200, 250 |
| DWB400 |
| 200, 225, 250, 275, 300, 325, 350, 400 |
| DWB600 |
| 325, 350, 400, 450, 500, 550, 600 |

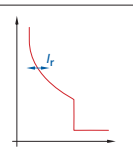
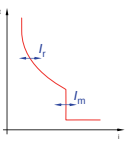
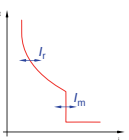
*Chart intended as reference only and not to create part numbers.*



Data is subject to change without notice.




## Current Ratings and Trip Units

| Reference code | Rated current $I_n$ (A) | Trip unit | | Curve |
|---|---|---|---|---|
| DWB100 | 20, 25, 30, 40, 50, 60, 70, 80, 90, 100 | Fixed thermal | Fixed magnetic[1] (10 x $I_n$) |  |
| DWB250 | 80-100, 100-125, 120-150, 160-200, 200-250 | Adjustable thermal (0.8...1 x $I_n$) | Fixed magnetic (10 x $I_n$) |  |
| DWB400 | 160-200, 180-225, 200-250, 220-275, 240-300, 260-325, 280-350, 320-400 | Adjustable thermal (0.8...1 x $I_n$) | Adjustable magnetic (5...10 x $I_n$) |  |
| DWB600 | 228-325, 245-350, 280-400, 315-450, 350-500, 385-550, 420-600 | Adjustable thermal (0,7...1 x $I_n$) | Adjustable magnetic (5...10 x $I_n$) |  |

*Note: 1) Circuit breakers with rated currents of 20 and 25 A, the magnetic trip point is 300 A.*

# Circuit Protection

## DWB

### Selection Guide

**DWB100 for Distribution - Standard 80% Rated - Fixed Thermal and Fixed Magnetic Trip Unit**

| Rated current (A) | Magnetic trip point (A) | Interrupting ratings (kA) | | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|---|
| | | 240 V ac | 480Y/277 V ac | 3 poles | | |
| DWB100CE | | | | | | |
| 20 | 300 | 25 | 10 | DWB100CE20-3DX | $495 | Z10 |
| 25 | 300 | 25 | 10 | DWB100CE25-3DX | $495 | |
| 30 | 300 | 25 | 10 | DWB100CE30-3DX | $495 | |
| 40 | 400 | 25 | 10 | DWB100CE40-3DX | $495 | |
| 50 | 500 | 25 | 10 | DWB100CE50-3DX | $495 | |
| 60 | 600 | 25 | 10 | DWB100CE60-3DX | $495 | |
| 70 | 700 | 25 | 10 | DWB100CE70-3DX | $495 | |
| 80 | 800 | 25 | 10 | DWB100CE80-3DX | $511 | |
| 90 | 900 | 25 | 10 | DWB100CE90-3DX | $511 | |
| 100 | 1000 | 25 | 10 | DWB100CE100-3DX | $511 | |
| DWB100JE | | | | | | |
| 20 | 300 | 50 | 14 | DWB100JE20-3DX | $558 | Z10 |
| 25 | 300 | 50 | 14 | DWB100JE25-3DX | $558 | |
| 30 | 300 | 50 | 14 | DWB100JE30-3DX | $558 | |
| 40 | 400 | 50 | 14 | DWB100JE40-3DX | $558 | |
| 50 | 500 | 50 | 14 | DWB100JE50-3DX | $558 | |
| 60 | 600 | 50 | 14 | DWB100JE60-3DX | $558 | |
| 70 | 700 | 50 | 14 | DWB100JE70-3DX | $558 | |
| 80 | 800 | 50 | 14 | DWB100JE80-3DX | $579 | |
| 90 | 900 | 50 | 14 | DWB100JE90-3DX | $579 | |
| 100 | 1000 | 50 | 14 | DWB100JE100-3DX | $579 | |

**DWB250 for Distribution - Standard 80% Rated - Adjustable Thermal and Fixed Magnetic Trip Unit**

| Current range (A) | Magnetic trip point (A) | Interrupting ratings (kA) | | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|---|
| | | 240 V ac | 480Y/277 V ac | 3 poles | | |
| DWB250JE | | | | | | |
| 80-100 | 1000 | 50 | 14 | DWB250JE100-3DF | $1170 | Z10 |
| 100-125 | 1250 | 50 | 14 | DWB250JE125-3DF | $1170 | |
| 120-150 | 1500 | 50 | 14 | DWB250JE150-3DF | $1170 | |
| 160-200 | 2000 | 50 | 14 | DWB250JE200-3DF | $1170 | |
| 200-250 | 2500 | 50 | 14 | DWB250JE250-3DF | $1170 | |
| DWB250PE | | | | | | |
| 80-100 | 1000 | 80 | 35 | DWB250PE100-3DF | $1490 | Z10 |
| 100-125 | 1250 | 80 | 35 | DWB250PE125-3DF | $1490 | |
| 120-150 | 1500 | 80 | 35 | DWB250PE150-3DF | $1490 | |
| 160-200 | 2000 | 80 | 35 | DWB250PE200-3DF | $1490 | |
| 200-250 | 2500 | 80 | 35 | DWB250PE250-3DF | $1490 | |



Data is subject to change without notice.

| DWB400 for Distribution - Standard 80% Rated - Adjustable Thermal and Magnetic Trip Unit | | | | | | |
|---|---|---|---|---|---|---|
| Current range (A) | Magnetic trip point (A) | Interrupting ratings (kA) | | Catalog Number | List Price | Multiplier |
| | | 240 V ac | 480 V ac | 3 poles | | |
| DWB400JE | | | | | | |
| 160-200 | 1600-2000 | 50 | 18 | DWB400JE200-3DA | $2350 | Z10 |
| 180-225 | 1800-2250 | 50 | 18 | DWB400JE225-3DA | $2350 | |
| 200-250 | 2000-2500 | 50 | 18 | DWB400JE250-3DA | $2350 | |
| 220-275 | 2200-2750 | 50 | 18 | DWB400JE275-3DA | $2350 | |
| 240-300 | 2400-3000 | 50 | 18 | DWB400JE300-3DA | $2350 | |
| 260-325 | 2600-3250 | 50 | 18 | DWB400JE325-3DA | $2350 | |
| 280-350 | 2800-3500 | 50 | 18 | DWB400JE350-3DA | $2350 | |
| 320-400 | 3200-4000 | 50 | 18 | DWB400JE400-3DA | $2350 | |
| DWB400PE | | | | | | |
| 160-200 | 1600-2000 | 80 | 35 | DWB400PE200-3DA | $2610 | Z10 |
| 180-225 | 1800-2250 | 80 | 35 | DWB400PE225-3DA | $2610 | |
| 200-250 | 2000-2500 | 80 | 35 | DWB400PE250-3DA | $2610 | |
| 220-275 | 2200-2750 | 80 | 35 | DWB400PE275-3DA | $2610 | |
| 240-300 | 2400-3000 | 80 | 35 | DWB400PE300-3DA | $2610 | |
| 260-325 | 2600-3250 | 80 | 35 | DWB400PE325-3DA | $2610 | |
| 280-350 | 2800-3500 | 80 | 35 | DWB400PE350-3DA | $2610 | |
| 320-400 | 3200-4000 | 80 | 35 | DWB400PE400-3DA | $2610 | |
| **DWB600 for Distribution - Standard 80% Rated - Adjustable Thermal and Magnetic Trip Unit** | | | | | | |
| Current range (A) | Magnetic trip point (A) | Interrupting ratings (kA) | | Catalog Number | List Price | Multiplier |
| | | 240 V ac | 480 V ac | 3 poles | | |
| DWB600PE | | | | | | |
| 227.5-325 | 1625-3250 | 80 | 35 | DWB600PE325-3DA | $4350 | Z10 |
| 245-350 | 1750-3500 | 80 | 35 | DWB600PE350-3DA | $4350 | |
| 280-400 | 2000-4000 | 80 | 35 | DWB600PE400-3DA | $4350 | |
| 315-450 | 2250-4500 | 80 | 35 | DWB600PE450-3DA | $4350 | |
| 350-500 | 2500-5000 | 80 | 35 | DWB600PE500-3DA | $4350 | |
| 385-550 | 2750-5500 | 80 | 35 | DWB600PE550-3DA | $4350 | |
| 420-600 | 3000-6000 | 80 | 35 | DWB600PE600-3DA | $4350 | |

*Notes: Wiring terminals (lugs) built-in for DWB100 and supplied as standard with DWB250, DWB400 and DWB600. Lugs are also available as an accessory for DWB250, DWB400 and DWB600, see the section Accessories.*

# Circuit Protection

## DWB

### Selection Guide

**DWB100 for Distribution - Premium 100% Rated - Fixed Thermal and Fixed Magnetic Trip Unit**

| Rated current (A) | Magnetic trip point (A) | Interrupting ratings (kA) | | Reference code | List Price | Multiplier |
|---|---|---|---|---|---|---|
| | | 240 V ac | 480Y/277 V ac | 3 poles | | |
| DWB100CH | | | | | | |
| 20 | 300 | 25 | 10 | DWB100CH20-3DX | $591 | Z10 |
| 25 | 300 | 25 | 10 | DWB100CH25-3DX | $591 | |
| 30 | 300 | 25 | 10 | DWB100CH30-3DX | $591 | |
| 40 | 400 | 25 | 10 | DWB100CH40-3DX | $591 | |
| 50 | 500 | 25 | 10 | DWB100CH50-3DX | $591 | |
| 60 | 600 | 25 | 10 | DWB100CH60-3DX | $591 | |
| 70 | 700 | 25 | 10 | DWB100CH70-3DX | $591 | |
| 80 | 800 | 25 | 10 | DWB100CH80-3DX | $622 | |
| 90 | 900 | 25 | 10 | DWB100CH90-3DX | $622 | |
| 100 | 1000 | 25 | 10 | DWB100CH100-3DX | $622 | |
| DWB100JH | | | | | | |
| 20 | 300 | 50 | 14 | DWB100JH20-3DX | $640 | Z10 |
| 25 | 300 | 50 | 14 | DWB100JH25-3DX | $640 | |
| 30 | 300 | 50 | 14 | DWB100JH30-3DX | $640 | |
| 40 | 400 | 50 | 14 | DWB100JH40-3DX | $640 | |
| 50 | 500 | 50 | 14 | DWB100JH50-3DX | $640 | |
| 60 | 600 | 50 | 14 | DWB100JH60-3DX | $640 | |
| 70 | 700 | 50 | 14 | DWB100JH70-3DX | $640 | |
| 80 | 800 | 50 | 14 | DWB100JH80-3DX | $697 | |
| 90 | 900 | 50 | 14 | DWB100JH90-3DX | $697 | |
| 100 | 1000 | 50 | 14 | DWB100JH100-3DX | $697 | |

**DWB250 for Distribution - Premium 100% Rated - Adjustable Thermal and Fixed Magnetic Trip Unit**

| Current range (A) | Magnetic trip point (A) | Interrupting ratings (kA) | | Reference code | List Price | Multiplier |
|---|---|---|---|---|---|---|
| | | 240 V ac | 480Y/277 V ac | 3 poles | | |
| DWB250JH | | | | | | |
| 80-100 | 1000 | 50 | 14 | DWB250JH100-3DF | $1402 | Z10 |
| 100-125 | 1250 | 50 | 14 | DWB250JH125-3DF | $1402 | |
| 120-150 | 1500 | 50 | 14 | DWB250JH150-3DF | $1402 | |
| 160-200 | 2000 | 50 | 14 | DWB250JH200-3DF | $1402 | |
| 200-250 | 2500 | 50 | 14 | DWB250JH250-3DF | $1402 | |
| DWB250PH | | | | | | |
| 80-100 | 1000 | 80 | 35 | DWB250PH100-3DF | $1598 | Z10 |
| 100-125 | 1250 | 80 | 35 | DWB250PH125-3DF | $1598 | |
| 120-150 | 1500 | 80 | 35 | DWB250PH150-3DF | $1598 | |
| 160-200 | 2000 | 80 | 35 | DWB250PH200-3DF | $1598 | |
| 200-250 | 2500 | 80 | 35 | DWB250PH250-3DF | $1598 | |



Data is subject to change without notice.

| DWB400 for Distribution - Premium 100% Rated - Adjustable Thermal and Magnetic Trip Unit | | | | | | |
|---|---|---|---|---|---|---|
| Current range (A) | Magnetic trip point (A) | Interrupting ratings (kA) | | Reference code | List Price | Multiplier |
| | | 240 V ac | 480 V ac | 3 poles | | |
| DWB400JH | | | | | | |
| 160-200 | 1600-2000 | 50 | 18 | DWB400JH200-3DA | $2585 | Z10 |
| 180-225 | 1800-2250 | 50 | 18 | DWB400JH225-3DA | $2585 | |
| 200-250 | 2000-2500 | 50 | 18 | DWB400JH250-3DA | $2585 | |
| 220-275 | 2200-2750 | 50 | 18 | DWB400JH275-3DA | $2585 | |
| 240-300 | 2400-3000 | 50 | 18 | DWB400JH300-3DA | $2585 | |
| 260-325 | 2600-3250 | 50 | 18 | DWB400JH325-3DA | $2585 | |
| 280-350 | 2800-3500 | 50 | 18 | DWB400JH350-3DA | $2585 | |
| 320-400 | 3200-4000 | 50 | 18 | DWB400JH400-3DA | $2585 | |
| DWB400PH | | | | | | |
| 160-200 | 1600-2000 | 80 | 35 | DWB400PH200-3DA | $2870 | Z10 |
| 180-225 | 1800-2250 | 80 | 35 | DWB400PH225-3DA | $2870 | |
| 200-250 | 2000-2500 | 80 | 35 | DWB400PH250-3DA | $2870 | |
| 220-275 | 2200-2750 | 80 | 35 | DWB400PH275-3DA | $2870 | |
| 240-300 | 2400-3000 | 80 | 35 | DWB400PH300-3DA | $2870 | |
| 260-325 | 2600-3250 | 80 | 35 | DWB400PH325-3DA | $2870 | |
| 280-350 | 2800-3500 | 80 | 35 | DWB400PH350-3DA | $2870 | |
| 320-400 | 3200-4000 | 80 | 35 | DWB400PH400-3DA | $2870 | |
| **DWB600 for Distribution - Standard 100% Rated - Adjustable Thermal and Magnetic Trip Unit** | | | | | | |
| Current range (A) | Magnetic trip point (A) | Interrupting ratings (kA) | | Reference code | List Price | Multiplier |
| | | 240 V ac | 480 V ac | 3 poles | | |
| DWB600PH | | | | | | |
| 227.5-325 | 1625-3250 | 80 | 35 | DWB600PH325-3DA | $4785 | Z10 |
| 245-350 | 1750-3500 | 80 | 35 | DWB600PH350-3DA | $4785 | |
| 280-400 | 2000-4000 | 80 | 35 | DWB600PH400-3DA | $4785 | |
| 315-450 | 2250-4500 | 80 | 35 | DWB600PH450-3DA | $4785 | |
| 350-500 | 2500-5000 | 80 | 35 | DWB600PH500-3DA | $4785 | |
| 385-550 | 2750-5500 | 80 | 35 | DWB600PH550-3DA | $4785 | |
| 420-600 | 3000-6000 | 80 | 35 | DWB600PH600-3DA | $4785 | |

*Notes: Wiring terminals (lugs) built-in for DWB100 and supplied as standard with DWB250, DWB400 and DWB600. Lugs are also available as an accessory for DWB250, DWB400 and DWB600, see the section Accessories.*

DWB

## DWB100 - Internal Accessories

### Auxiliary and Alarm Switches

| Internal Accessory | Number of Contacts | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|
| Aux Switch BC | 1 | BC-1 DWB | $98 | Z10 |
| | 2 | BC-2 DWB | $160 | |
| Alarm Switch AL | 1 | AL-1 DWB | $98 | |
| Aux Switch & Alarm Switch BCAL | 1BC + 1AL | BCAL-2 DWB | $160 | |

### Electrical Characteristics

| Rated Voltage | Type of Load | Switching Capacity (Amp) |
|---|---|---|
| 125 VAC | Resistive | 6 |
| 250 VAC | Resistive | 6 |

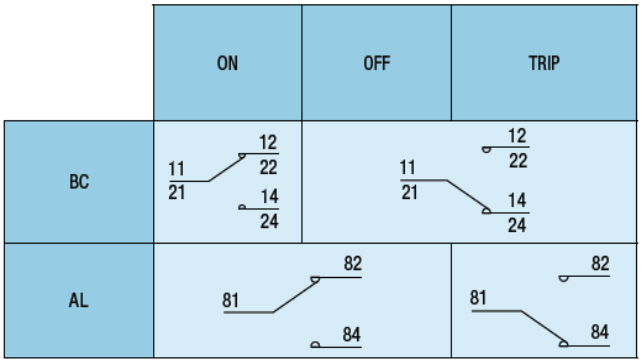
**BC Auxiliary Switch**
- Indicates remote circuit breaker status “open” (OFF) or “closed” (ON) through SPDT form C contacts.

**AL Alarm Switch**
- Indicates circuit breaker has tripped due to overload, short-circuit, shunt trip or undervoltage-trip release conditions through SPDT form C contact.
- Contact opens when circuit breaker is reset
- Offers provision for audio and visual indication of tripped breaker due to conditions described above

**BCAL Auxiliary and Alarm Switch**
- Auxiliary and alarm switch incorprated into one unit

**BC, AL & BCAL**
- All come with built-in terminal blocks. These terminal blocks will accept 20 to 16 AWG (0.5 to 1.5MM2) Tightening torque of 6.9 lb.in. (0.8 N. m.).

**Wiring Diagrams**










Data is subject to change without notice.

# DWB100 - Internal Accessories

## Shunt and Undervoltage Release

| Internal Accessory | Rated Voltage Ue | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|
| Undervoltage Release BS | 24/48/60/110-130/220-250V ac/dc | BS DWB160* | $220 | Z10 |
| Shunt Release BD | | BD DWB160* | $198 | |
| Undervoltage release BS | | BS DWB400* | 300 | |
| Shunt release BD | | BD DWB400* | 300 | |
| Under voltage release BD | | BS DWB600* | 375 | |
| Shunt release BD | | BD DWB600* | 375 | |

**Complete Catalog Number, Replace * with Appropriate Voltage Code*

## Voltage Codes

| E26 | E27 | E10 | E15 |
|---|---|---|---|
| 24V ac/dc | 48V ac/dc | 110-130V ac/dc | 220-250V ac/dc |

### BD Shunt Release

- When energized by a pulse or maintained signal of voltage, the shunt release trips breaker (trip position). Shunt release works from 70 to 110% of rated voltage (0.70 x Un<Ue<1.1xUn).
- Features a device to keep unenergized after tripping pulse.

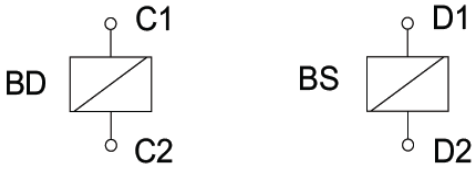
### BS Undervoltage Release

- Trips breaker when the voltage drops below 35% of the rated voltage (Ue<0.35 x Un)
- When voltage is between 35 to 70% of rated voltage, it may open the circuit breaker (0.35 x Un <Ue <0.7 x Un)
- After the operation of BS release, circuit breaker can only be closed if supply voltage is above 85% of the rated voltage (Ue>0.85 x Un)
- The BS undervoltage release along with an emergency stop push button makes possible for fail-safe operation of the circuit breaker

### BD & BS Release

- All come with built-in terminal blocks. These terminal blocks will accept 20 to 16 AWG (0.5 to 1.5MM2). Tightening torque of 6.9 lb.in. (0.8 N. m.). After BD or BS operation the circuit breaker has to be reset before being closed again.

**Wiring Diagrams**






# Circuit Protection

DWB

## External Accessories

### Panel Door Operating Handles

#### Handle (IP66)

- When in ON position, panel door cannot be opened, unless a tool is used to bypass the panel door locking system, allowing thermometry of the panel.
- Circuit breaker and panel door padlocking in OFF position using 1 to 3 padlocks.

#### Coding

**MRX S A DWB250 BU**

**MRX:** panel door operating handle type 4X and IP66

**S:** selector type (DWB100 and DWB250)
**L:** pistol type

**A:** Handle + Shaft + Mechanism
**B:** Handle + Shaft

**"A" Set (handle + shaft + mechanism)**
**DWB160:** for circuit breaker DWB100
**DWB250:** for circuit breaker DWB250
**DWB400:** for circuit breaker DWB400
**DWB600:** for circuit breaker DWB600

**"B" Set (handle + shaft):**
**1:** selector type handle for circuit breaker DWB100 or DWB250
**2:** pistol type handle for circuit breaker DWB100 or DWB250
**3:** pistol type handle for circuit breaker DWB400
**4:** pistol type handle for circuit breaker DWB600

**Handle color**
**BU:** blue
**R:** red and yellow

### Panel Door Operating Handles (IP66)

#### "A" Set: Handle + Shaft + Mechanism




| Description | Circuit breaker | Shaft (mm) | Length of handle (mm) | Handle color | List Price | Multiplier |
|---|---|---|---|---|---|---|
| MRXS-A-DWB160-R | DWB100 | 460 | - | Red and yellow | $310 | Z10 |
| MRXS-A-DWB250-R | DWB250 | 460 | - | Red and yellow | $310 | |
| MRXL-A-DWB160-R | DWB100 | 460 | 105 | Red and yellow | $350 | |
| MRXL-A-DWB250-R | DWB250 | 460 | 105 | Red and yellow | $350 | |
| MRXL-A-DWB400-R | DWB400 | 460 | 105 | Red and yellow | $420 | |
| MRXL-A-DWB1000-R | DWB600 | 460 | 158 | Red and yellow | $525 | |
| MRXS-A-DWB160-BU | DWB100 | 460 | - | Blue | $310 | |
| MRXS-A-DWB250-BU | DWB250 | 460 | - | Blue | $310 | |
| MRXL-A-DWB160-BU | DWB100 | 460 | 105 | Blue | $350 | |
| MRXL-A-DWB250-BU | DWB250 | 460 | 105 | Blue | $350 | |
| MRXL-A-DWB400-BU | DWB400 | 460 | 105 | Blue | $420 | |
| MRXL-A-DWB1000-BU | DWB600 | 460 | 158 | Blue | $525 | |




*Notes: 1) Padlocks 4 up to 8 mm may be fit to the handles.*
*2) Sold separately only. It is not sold assembled on the circuit breaker.*



Data is subject to change without notice.

# External Accessories

## Panel Door Operating Handles (IP66)

### "B" Set: Handle + Shaft

| Part Number | Circuit breaker | Shaft (mm) | Length of handle (mm) | Handle color | List Price | Multiplier |
|---|---|---|---|---|---|---|
| MRXS-B-1-R | DWB100 / DWB250 | 460 | - | Red and yellow | $175 | Z10 |
| MRXL-B-2-R | DWB100 / DWB250 | 460 | 105 | Red and yellow | $200 | |
| MRXL-B-3-R | DWB400 | 460 | 105 | Red and yellow | $240 | |
| MRXL-B-4-R | DWB600 | 460 | 158 | Red and yellow | $275 | |
| MRXS-B-1-BU | DWB100 / DWB250 | 460 | - | Blue | $175 | |
| MRXL-B-2-BU | DWB100 / DWB250 | 460 | 105 | Blue | $200 | |
| MRXL-B-3-BU | DWB400 | 460 | 105 | Blue | $240 | |
| MRXL-B-4-BU | DWB600 | 460 | 158 | Blue | $275 | |

*Notes: 1) Padlocks 4 up to 8 mm may be fit to the handles.*
*2) Sold separately only. It is not sold assembled on the circuit breaker.*

### Only Mechanism

| Description | Circuit breaker | List Price | Multiplier |
|---|---|---|---|
| MRH DWB160 | DWB100 | $150 | Z10 |
| MRH DWB250 | DWB250 | $160 | |
| MRH DWB400 | DWB400 | $200 | |
| MRH DWB1000E | DWB600 | $250 | |

*Note: 1) Sold separately only. It is not sold assembled on the circuit breaker.*

## Shaft Support

- Recommended when the shaft length is more than indicated in next table.



| Description | Circuit breaker | Shaft length to use of support | List Price | Multiplier |
|---|---|---|---|---|
| MR DWB400 | DWB400 | > 380 mm | $45 | Z10 |
| MR DWB800-1600 | DWB600 | > 320 mm | $50 | |

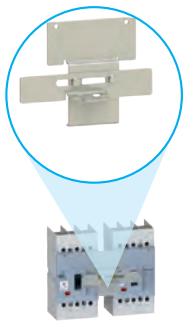
***Note: sold separately only. It is not sold assembled on the circuit breaker. Accessory may be used on frames 3P and 4P.***

## Changeover Device

Manual-operated changeovers are used to make safe switching of two different circuits.

### BLIM Mechanical Interlock

- Provides safe operation in a manual-operated changeover system
- Makes the mechanical interlock of 2 circuit breakers of the same frame size, preventing both MCCBs to be in ON position
- Interlock is assembled directly to the front cover of the circuit breakers
- It can be padlocked in 2 positions: MCCB1 ON and MCCB2 OFF, MCCB1 OFF and MCCB2 ON
- BLIM allows padlocks with diameters of Ø0.16...0.31 inches (4...8 mm)
- It is possible to interlock 3 MCCBs side-by-side using 2 BLIMs
- Padlocks are not supplied



| External accessory | MCCB | Reference code | List Price | Multiplier |
|---|---|---|---|---|
| Mechanical interlock BLIM | DWB100 | BLIM DWB100 3P | $338 | Z10 |
| | DWB250 | BLIM DWB250 3P | $377 | |
| | DWB400 | BLIM DWB400 3P | $425 | |
| | DWB600 | BLIM DWB800-1600 3P | $425 | |

# Circuit Protection

DWB

## External Accessories

### Accessory for Connection and Installation

Depending on the application and local standards, the MCCB may be installed and connected through bus bars or cables. Given these requirements, the DWB range of circuit breakers have the specific connection accessory to comply with.

**PC Wiring Terminals (Lugs)**

- Provides the means for connecting the circuit breaker to the power source and the load
- PC is supplied with 3 pieces that are suitable for either line or load terminals
- Built-in on DWB100 in the 6 terminals
- Lugs are supplied with 6 units for DWB250, DWB400 and DWB600 (supplied as standard)
- Pack with 3 units for spare parts



| External accessory | Spare part (units) | MCCB | Minimum cross-section (AWG / mm²) | Maximum cross-section (AWG / mm²) | Tightening torque (lb.in / N.m) | Reference code | List Price | Multiplier |
|---|---|---|---|---|---|---|---|---|
| Wiring terminal PC | 3 | DWB250 | 4 / 25 (1 cable) | 250 kcmil / 120 (1 cable) | **220 / 25** | PC DWB250 3P | **$87** | Z10 |
| | | DWB400 | 3/0 / 95 (1 cable) | **500 kcmil / 240 (1 cable)** | **265 / 35** | PC DWB400 3P | **$140** | |
| | | DWB600 | 400 kcmil / 240 (1 cable) or 3/0 / 95 (2 cables) | **350 kcmil / 185 (2 cables)** | **310 / 55** | PC DWB800-1000 3P | **$250** | |

**DIN Rail Base**

- Quick assembly of DWB100 on 35 mm DIN rails
- Fast replacement when panel is under maintenance



| External accessory | MCCB | Reference code | List Price | Multiplier |
|---|---|---|---|---|
| DIN rail base | DWB100 | BFR DWB160 3P UL | **$25** | Z10 |

### Escutcheons and Lock-OFF Devices

**MP Escutcheons**

- Escutcheons are frames for cutouts in panel doors
- It makes possible the external switching of the MCCB through the front door when the circuit breakers is installed close to the panel door, maintaining the degree of protection
- Degree of protection IP40
- See section Dimensions for cutout details



| External accessory | MCCB | Reference code | List Price | Multiplier |
|---|---|---|---|---|
| Escutcheon MP | DWB100 3P | MP DWB100 | **$12** | Z10 |
| | DWB250 3P | MP DWB250 | **$14** | |
| | DWB400 3P | MP DWB400 | **$15** | |
| | DWB600 3P | MP DWB800-1600 | **$15** | |

*Note: degree of protection rating (IP) according to IEC 60529.*

**PLW Lock-OFF Devices**

- The PLW is a fixed-type device that is installed on the front of the MCCB ensuring the MCCB locking in OFF position
- It can be padlocked using 1 to 3 padlocks. PLW allows padlocks with diameters of Ø0.16...0.31 inches (4...8 mm)
- Padlocks are not supplied



| External accessory | MCCB | Reference code | List Price | Multiplier |
|---|---|---|---|---|
| Lock-OFF device PLW | DWB100 3P | PL DWB100 | $65 | Z10 |
| | DWB250 3P | PL DWB250 | $71 | |
| | DWB400 3P | PL DWB400 | $150 | |
| | DWB600 3P | PL DWB800-1600 | $150 | |



Data is subject to change without notice.

## Technical Data

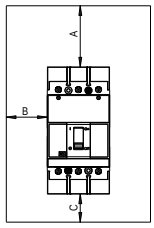
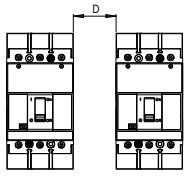
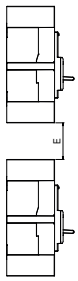
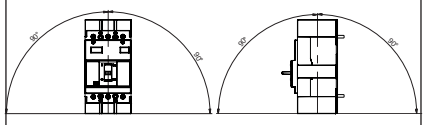
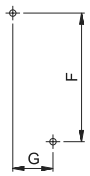
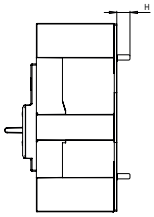
| Reference code | | | DWB100 | | DWB250 | | DWB400 | | DWB600 |
|---|---|---|---|---|---|---|---|---|---|
| Frame size | | | 100 | | 250 | | 400 | | 600 |
| **Electrical characteristics according to UL 489** | | | | | | | | | |
| Rated operational voltage - $E_u$ | | V ac (60 Hz) | 480Y/277 | | 480Y/277 | | 480 | | 480 |
| Maximum rated continuous current - $I_n$ (40 °C) | | A | 100 | | 250 | | 400 | | 600 |
| MCCB rating design | | | 80%, 100%[1] | | | | | | |
| Rated current - $I_n$ (40 °C) | | A | 20, 25, 30, 40, 50, 60, 70, 80, 90, 100 | | 80-100, 100-125, 120-150,160-200, 200-250 | | 160-200, 180-225, 200-250, 220-275, 240-300, 260-325, 280-350, 320-400 | | 227.5-325, 245-350, 280-400, 315-450, 350-500, 385-550, 420-600 |
| Number of poles | | | 3 | | 3 | | 3 | | 3 |
| Short-circuit breaking capacity levels | | | C | J | J | P | J | P | P |
| UL interrupting rating - max RMS symmetrical | | kA rms | - | | - | | - | | - |
| | | 240 V ac | 35 | 50 | 50 | 80 | 50 | 80 | 80 |
| | | 480Y/277 V ac | 10 | 14 | 14 | 35 | - | | - |
| | | 480 V ac | - | | - | | 18 | 35 | 35 |
| Mechanical lifespan (C-O) | | Number of operations | 10,000 | | 6,000 | | 6,000 | | 6,000 |
| | | Operations per hour | 360 | | 240 | | 240 | | 240 |
| Electrical lifespan (C-O) @ 480 V ac | | Number of operations | 6,000 | | 1,000 | | 1,000 | | 1,000 |
| | | Operations per hour | 360 | | 240 | | 240 | | 240 |
| **Protection** | | | | | | | | | |
| Against short-circuit & overload (fixed thermomagnetic) | | | Yes | | No | | No | | No |
| Against short-circuit & overload (adjustable thermal and fixed magnetic) | | | No | | Yes | | No | | No |
| Against short-circuit & overload (adjustable thermal and magnetic) | | | No | | No | | Yes | | Yes |
| **Accessories** | | | | | | | | | |
| Internal | Auxiliary switch BC | | Yes | | Yes | | Yes | | Yes |
| | Alarm switch AL | | Yes | | Yes | | Yes | | Yes |
| | Auxiliary and alarm switches BCAL | | Yes | | Yes | | Yes | | Yes |
| | Shunt trip release BD | | Yes | | Yes | | Yes | | Yes |
| | Undervoltage-trip release BS | | Yes | | Yes | | Yes | | Yes |
| External | Mechanical interlock BLIM | | Yes | | Yes | | Yes | | Yes |
| | Lock-OFF device PLW | | Yes | | Yes | | Yes | | Yes |
| | Escutcheons MP | | Yes | | Yes | | Yes | | Yes |
| | Wiring terminal (lug) PC | | Built-in | | Standard | | Standard | | Standard |
| Handles | Panel door rotary operating handle | | Yes | | Yes | | Yes | | Yes |
| **Installation and connections** | | | | | | | | | |
| Suitable for reverse connection | | | Yes | | Yes | | Yes | | Yes |
| Cables - Cu[2] | Maximum cross-section | | 3 AWG | | 250 kcmil | | 500 kcmil | | 400 kcmil |
| | Minimum cross-section | | 10 AWG | | 4 AWG | | 3/0 AWG | | 3/0 AWG |
| | Tightening torque | lb.in (N.m) | 57.5 (6.5) | | 220 (25) | | 265 (35) | | 310 (55) |
| Busbar | Tightening torque | lb.in (N.m) | - | | 70 (8) | | 175 (20) | | 175 (20) |
| Dimensions (W x D x H) | | Inches (mm) | 3.07 x 2.87 x 6.30 (78 x 73 x 160) | | 4.13 x 3.15 x 7.87 (105 x 80 x 200) | | 4.22 x 3.9 x 12.72 (107 x 99 x 323) | | 8.27 x 3.9 x 12.72 (210 x 99 x 323) |
| Weight | 3 poles | Pounds (kg) | 2.09 (0.95) | | 3.97 (1.8) | | 7.85 (3.56) | | 16.31 (7.4) |

*Notes: 1) For DWB100: suitable for continuous operation at 100 percent of rating only if used in a circuit breaker enclosure in a cubicle space 23.6 by 15.7 by 7.9 inches (600 by 400 by 200 mm) or equivalent.*
*For DWB250: suitable for continuous operation at 100 percent of rating only if used in a circuit breaker enclosure in a cubicle space 31.5 by 23.6 by 11.8 inches (800 by 600 by 300 mm) or equivalent.*
*For DWB400 and DWB600: suitable for continuous operation at 100 percent of rating only if used in a circuit breaker enclosure in a cubicle space 47.2 by 23.6 by 15.8 inches (1,200 by 600 by 400 mm) or equivalent.*
*2) Use only 90 °C rated wire with ampacity based on 75 °C rated conductors.*

## Installation and Connections

### Minimum Mounting Distances: DWB100

*in/mm*

| | | |
|---|---|---|
| Recommended mounting distances (inch / mm)   | A | 1.97 / 50 |
| | B | 0.79 / 20 |
| | C | 0.79 / 20 |
| Recommended distances between circuit breakers for side by side assembly (inch / mm)   | D | 0.394 / 10 |
| Recommended distances between circuit breakers for vertical assembly (inch / mm)   | E | 3.54 / 90 |
| Mounting position  | | |
| Drilling for fixing the circuit breakers (inch / mm)   DWB160 | | See section dimensions |
| Dimensions of fixing screw to the plate (inch / mm) | | M4 x 2.99 / 76 (2 pieces) |
| Surpass of the fixing screw in relation to the circuit breaker (inch / mm)   | H | 0.315 / 8 |
| Tightening torque - fixing screw (lb.in / N.m) | | 35.2 / 4 |



Data is subject to change without notice.

# Installation and Connections

## Thermal Dissipation

| Distribution MCCB | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Rated current - In | A | 20 | 25 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 |
| Power loss | Watts/pole | | | | | | | | | | |
| | DWB160 | 1 | 2 | 4 | 4 | 5 | 8 | 4 | 5 | 6 | 7 |

## Deratings

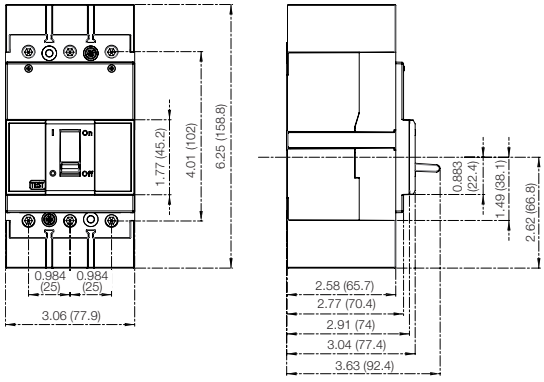
| Temperature derating | 50 °F 10 °C | 59 °F 15 °C | 68 °F 20 °C | 77 °F 25 °C | 86 °F 30 °C | 95 °F 35 °C | 104 °F 40 °C | 113 °F 45 °C | 122 °F 50 °C | 131 °F 55 °C | 140 °F 60 °C |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DWB160 (x In) | 1.16 | 1.12 | 1.09 | 1.07 | 1.02 | 1.02 | 1 | 0.97 | 0.95 | 0.91 | 0.88 |

| Altitude derating | | 6500 ft / 2000 m | 9800 ft / 3000 m | 13100 ft / 4000 m | 16400 ft / 5000 m |
|---|---|---|---|---|---|
| Rated current - In | % | 100 | 98 | 93 | 90 |
| Rated operational voltage - Ue | V ac | 480Y/277 | 480Y/277 | 480Y/277 | 400Y/230 |

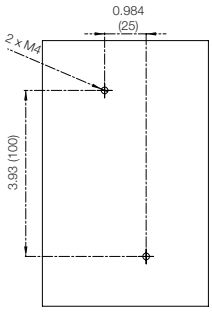
# Dimensions - Inch (mm)

## Circuit Breakers

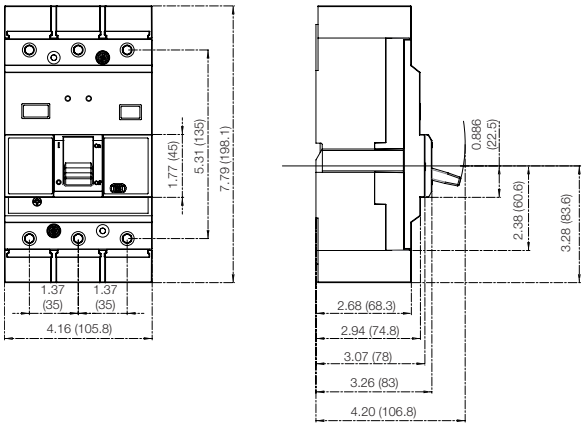
### DWB100



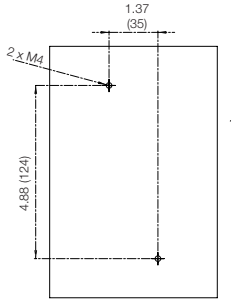

### Drilling for Fixing



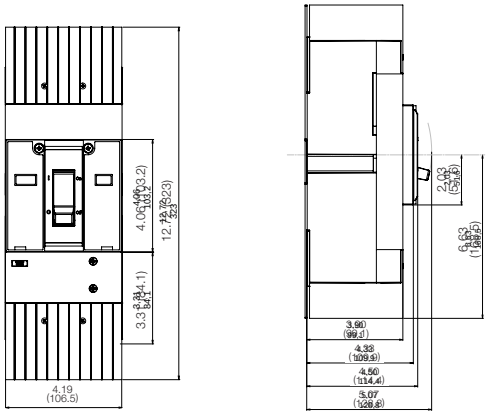

### DWB250



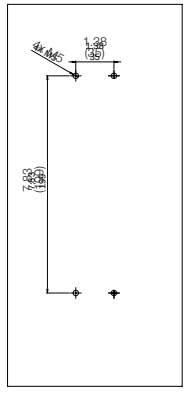

### Drilling for Fixing



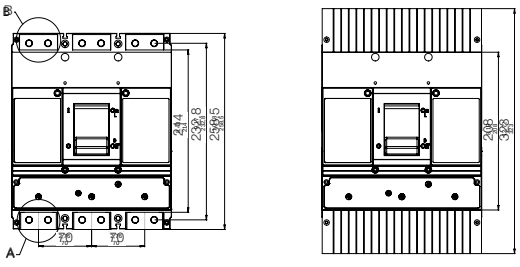

### DWB400

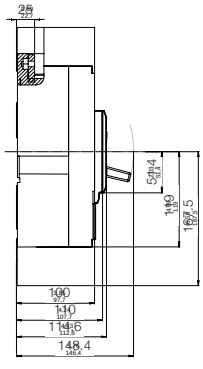


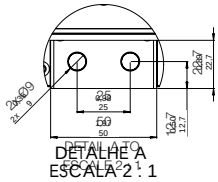

### Drilling for Fixing

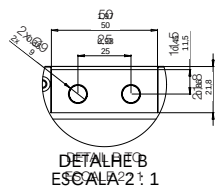


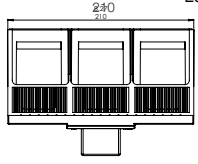

### DWB600





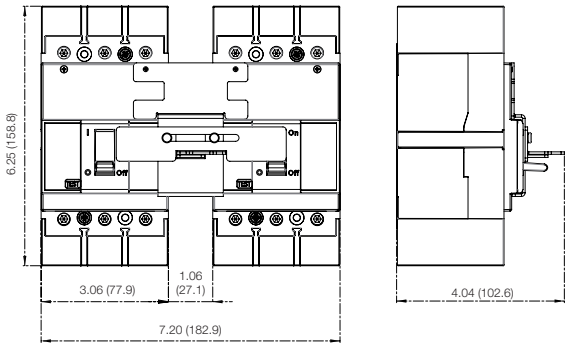

Data is subject to change without notice.

# Dimensions - Inch (mm)

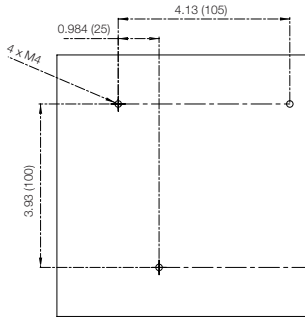
## Accessories

### BLIM - Mechanical Interlock

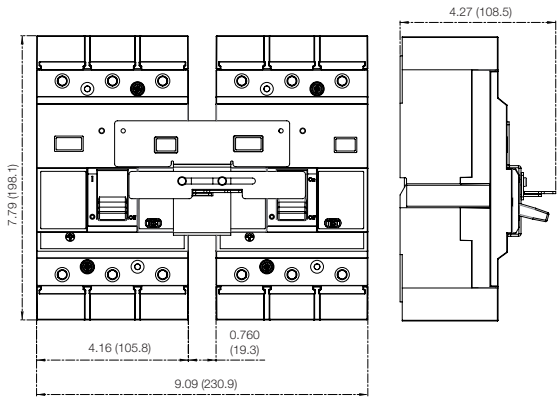
2 x Frame 100 + BLIM DWB100 3P



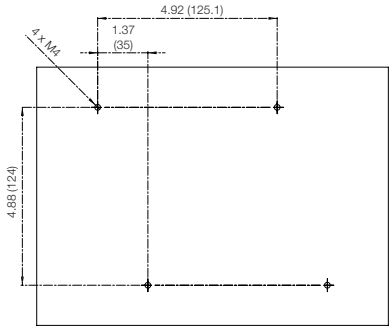

Drilling for Fixing



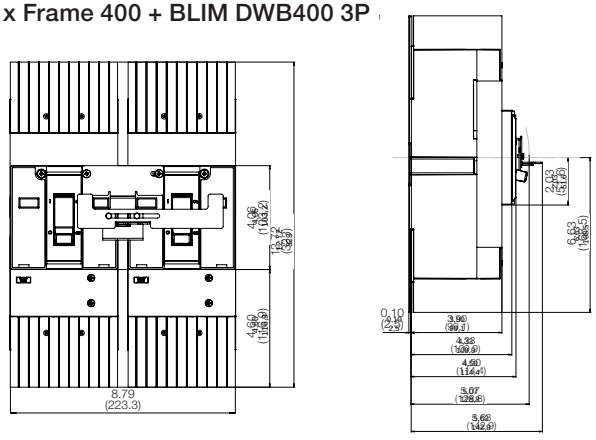

2 x Frame 250 + BLIM DWB250 3P



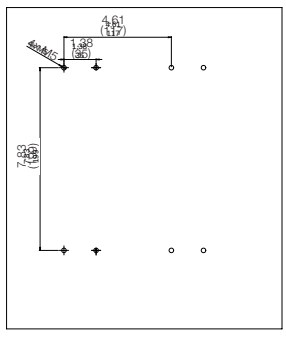

Drilling for Fixing



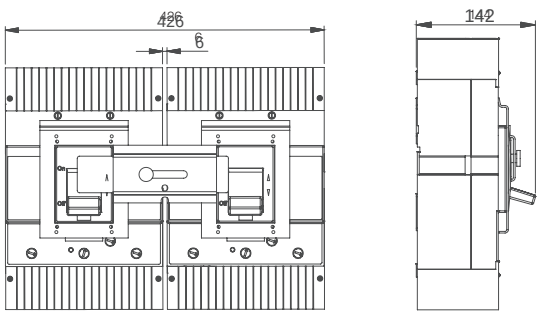

2 x Frame 400 + BLIM DWB400 3P




Drilling for Fixing



2 x Frame 600 + BLIM DWB600 3P



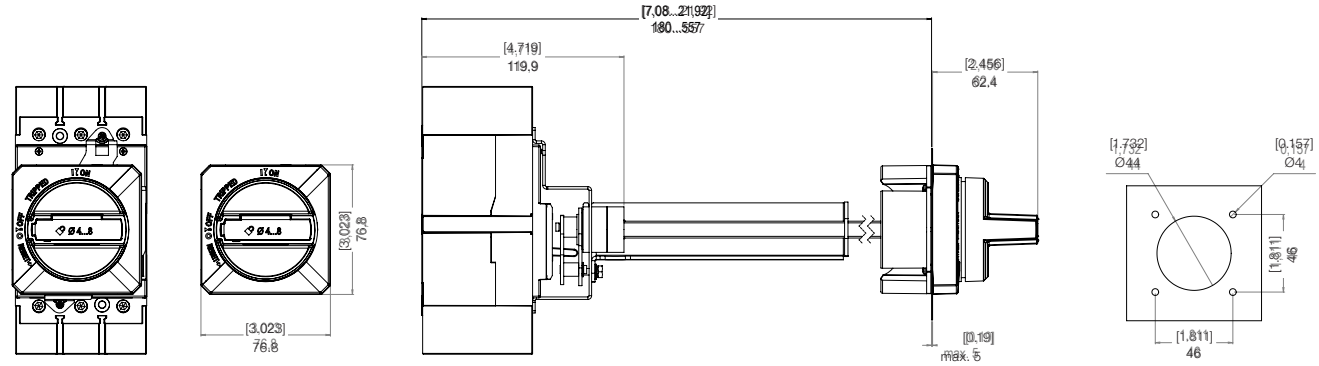
DWB

## Dimensions - Inch (mm)

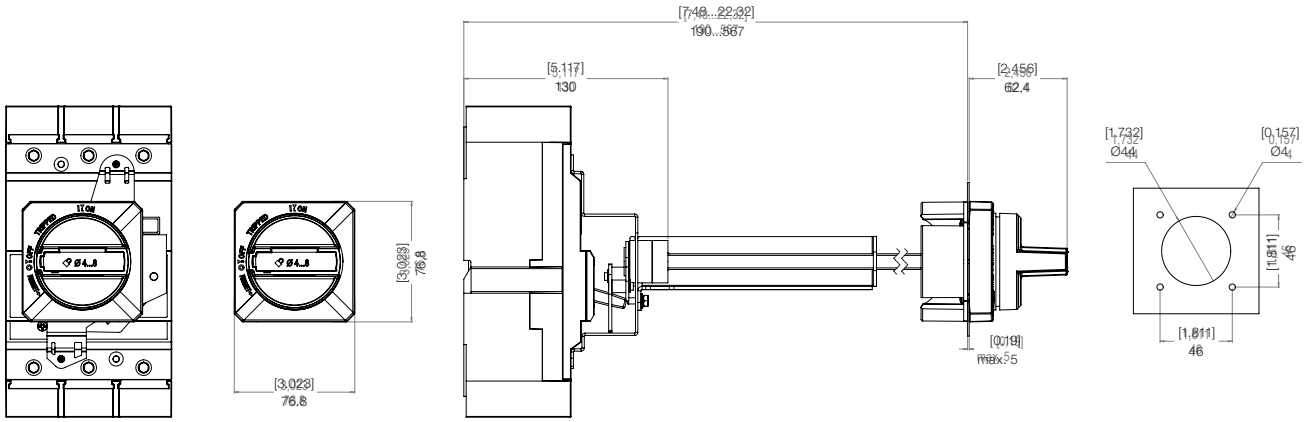
### Accessories

#### MRX - Panel Door Rotary Operating Handles

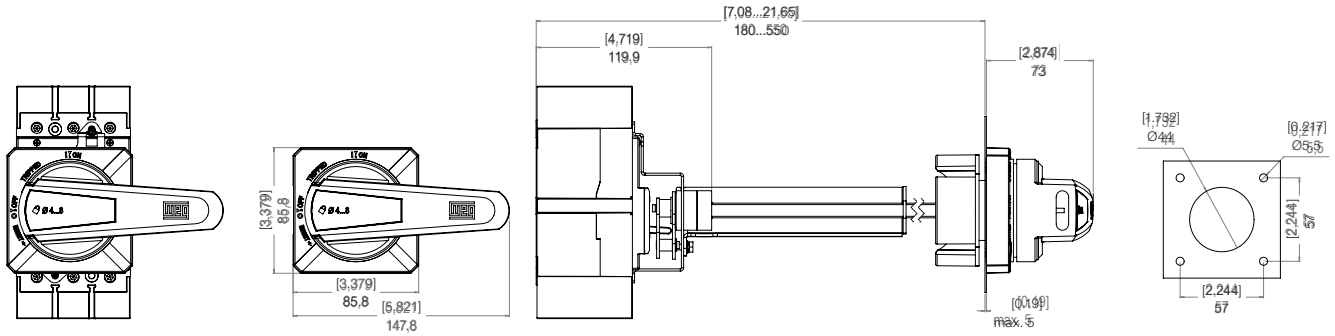
Frame 100 + MRXS DWB100




Frame 250 + MRXS DWB250




Frame 100 + MRXL DWB100





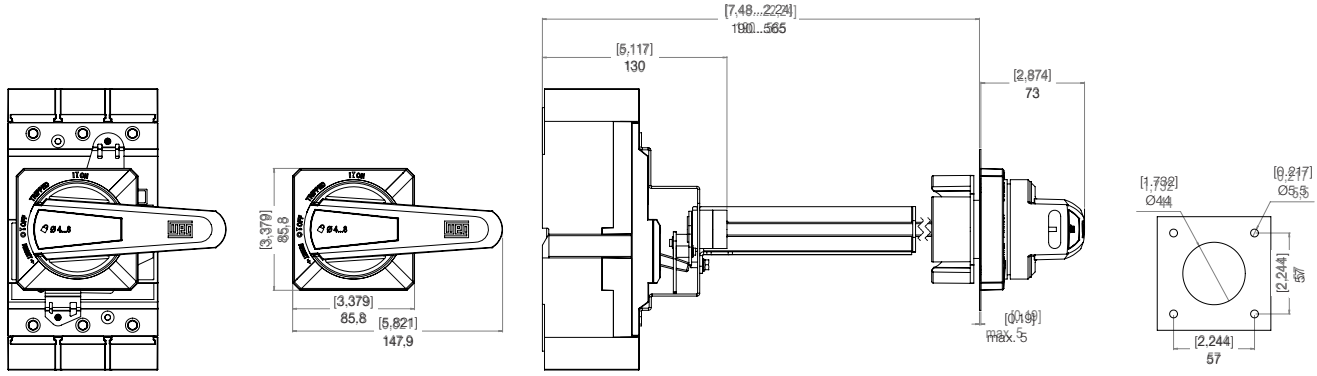

Data is subject to change without notice.

# Dimensions - Inch (mm)

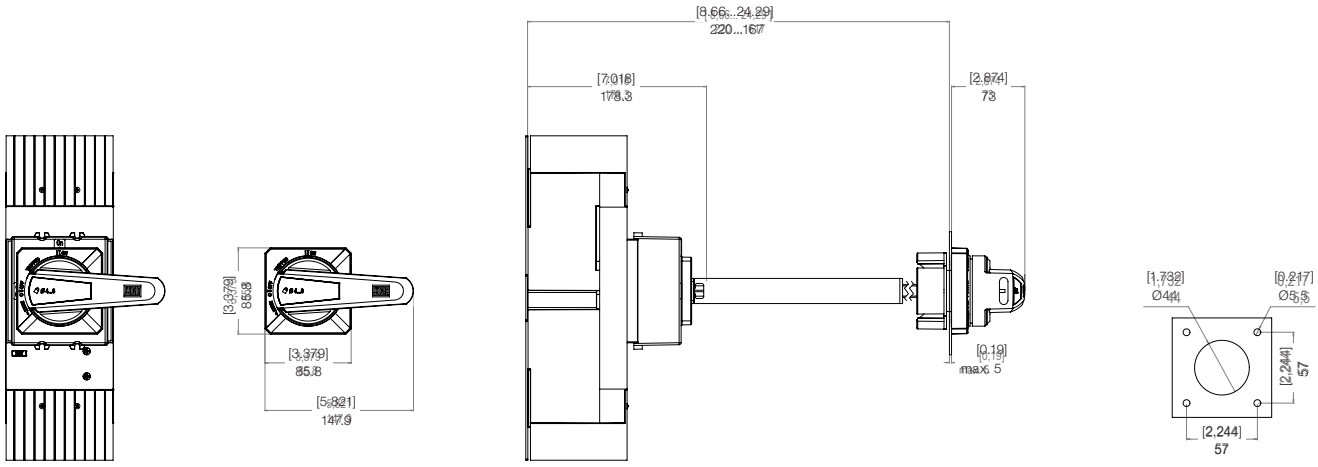
## Accessories

### MRX - Panel Door Rotary Operating Handles

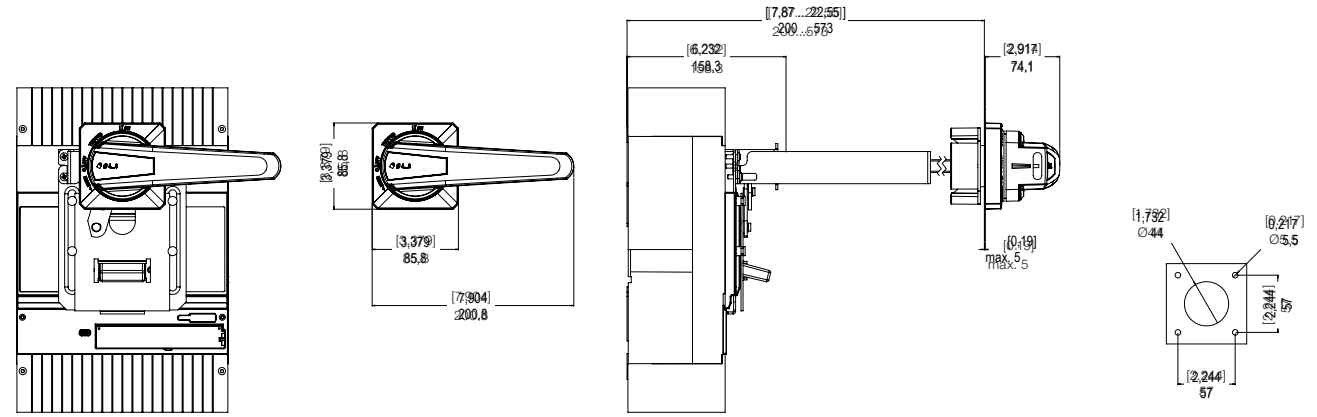
Frame 250 + MRXL DWB250




Frame 400 + MRXL DWB400




Frame 600 + MRXL DWB600



# Circuit Protection

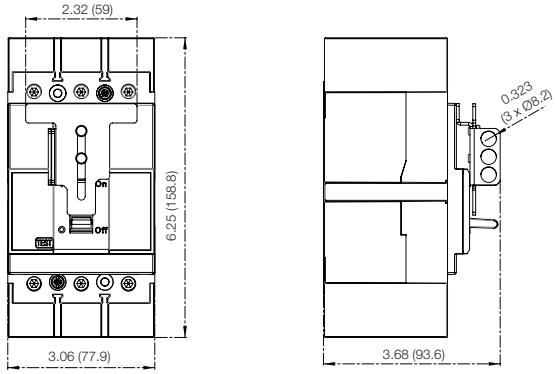
DWB

## Dimensions - Inch (mm)

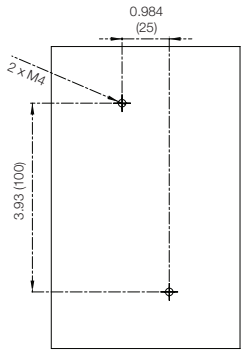
### Accessories

#### PLW - Lock-OFF Devices

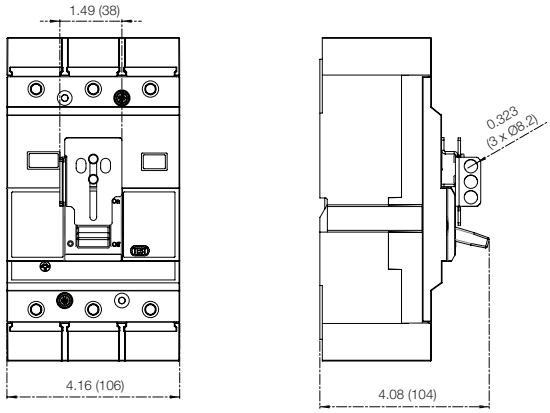
Frame 100 + PLW DWB100 3P



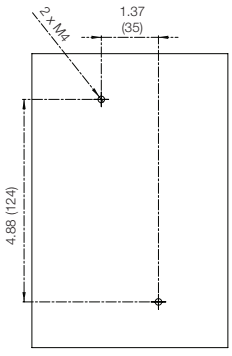

Panel Door Cutout



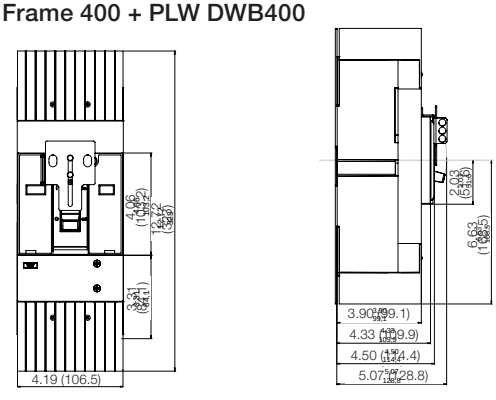

Frame 250 + PLW DWB250



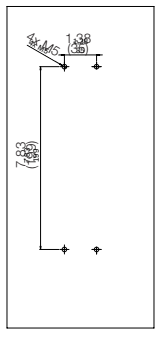

Panel Door Cutout



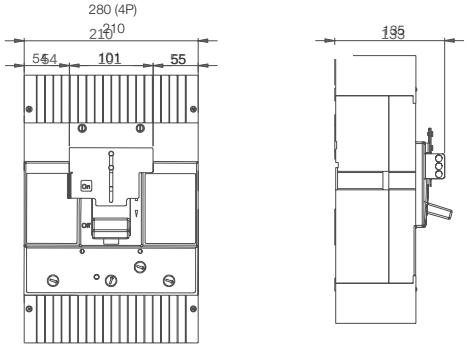

Frame 400 + PLW DWB400




Panel Door Cutout




Frame 600 + PLW DWB600





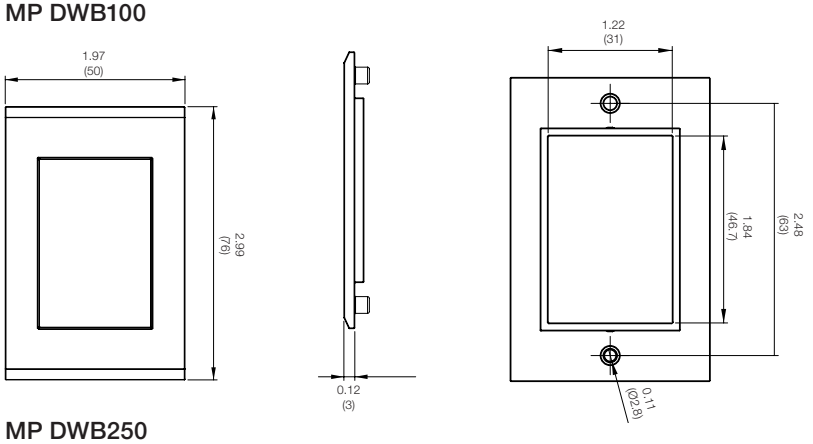

Data is subject to change without notice.

# Dimensions - Inch (mm)

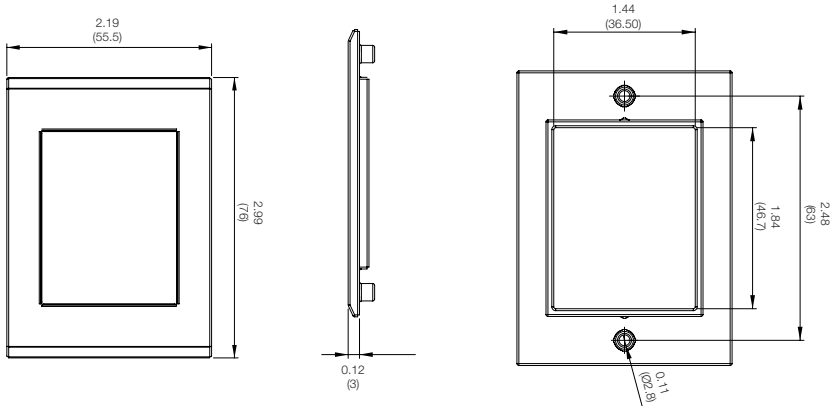
## Accessories

### MP - Escutcheons

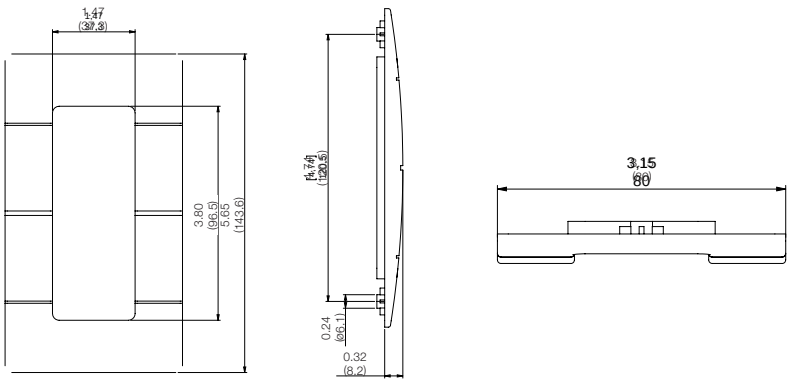
#### MP DWB100



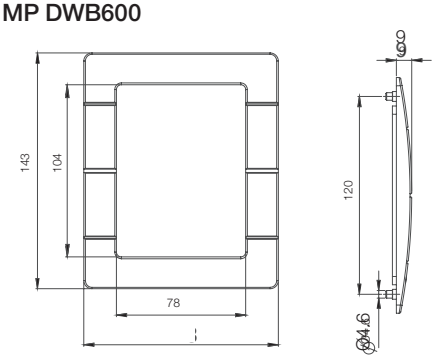

#### MP DWB250




#### MP DWB400




#### MP DWB600



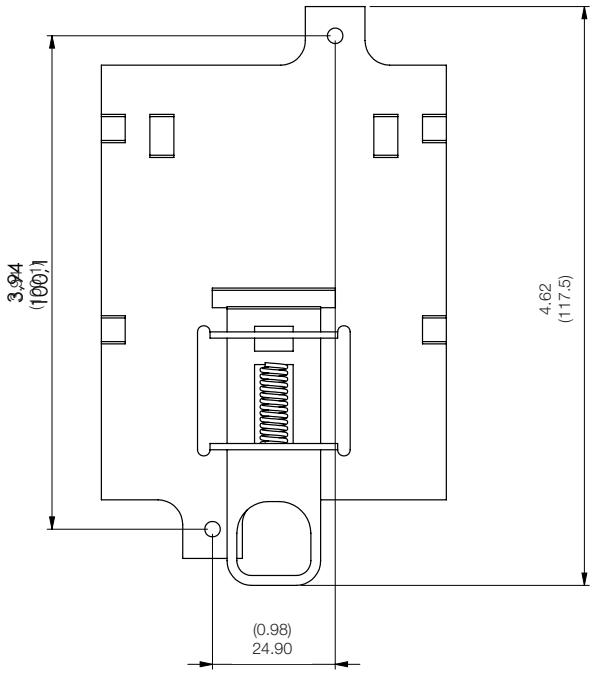
DWB

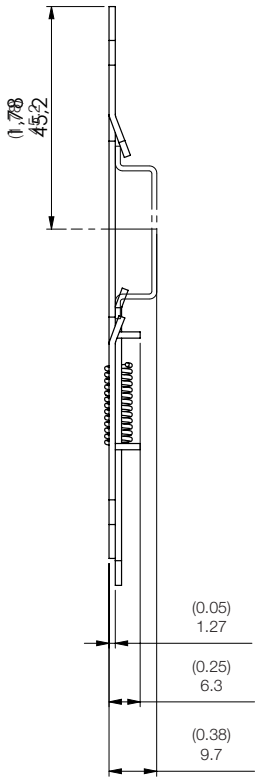
## Dimensions - Inch (mm)

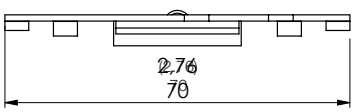
### Accessories

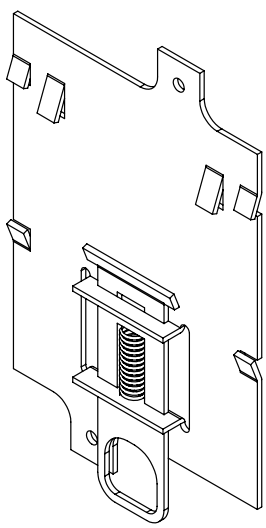
**BFR - DIN Rail Base**

BFR DWB100 3P UL







Data is subject to change without notice.

# UBW

## Molded-Case Circuit Breaker
## UL 489 Listed



UL File No. E310239

The WEG UBW Series of Molded Case Circuit Breakers are designed to provide short circuit and thermal protection for industrial electrical equipment. Increased frame sizes and amperages cover more applications and when combined with our complete line of Automation/ Control products, provide customers a one stop shop for all their panel needs. The UBW product line ranges from 15A to 2500A and SCCR ratings for 35-100 KAIC to meet more of your application requirements. The UBW line offers the quality, realiablity and uncompromising protection that you have come to expect from WEG.

### Standard Features:

- Broad product offering up to 2500 Amps
- Multiple SCCR Ratings up to 100 KIAC Ratings
- Maintenance mode for superior Arc Flash Protection
- Field or Factory installed options
- Optional multi-conductor load side lugs

**U B W  2 2 5  N - F T U  1 5  3 A**

- **U B W** — WEG UBW Breaker Series
- **2 2 5** — Frame Size: 225, 250, 400, 600, 800, 1200, 2500
- **N** — KAIC@480V: N=35 KAIC, S=50 KAIC, H=65 KAIC, L=100 KAIC (Call for other ratings)
- **F T U** — FTU Thermal and Magnetic; or ELS Electronic Trip; or ELSI Electronic Trip with Maintenance Mode
- **1 5** — Breaker Amps (Max): 15, 20, 30, 40, 50, 60, 70, 80,100, 125, 200, 225, 250, 400, 600, 800, 1200, 1600, 2000, 2500 (Amps subject to frame size)
- **3 A** — 3 Pole/ Amp

**If ordering with factory installed options replace 3A with alpha numeric option code sequence*

# Circuit Protection

## UBW

### 225 Frame- - Line and load side lugs included







### UBW225 Frame - Fixed Thermal / Fixed Magnetic

| Thermal Setting | Short Circuit Intrupting Capacity | | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|
| (A) | 480VAC | 600VAC | | | |
| 15 | 35kA | 18kA | UBW225N-FTU15-3A | $665 | Z10 |
| 20 | | | UBW225N-FTU20-3A | $665 | Z10 |
| 30 | | | UBW225N-FTU30-3A | $665 | Z10 |
| 40 | | | UBW225N-FTU40-3A | $665 | Z10 |
| 50 | | | UBW225N-FTU50-3A | $665 | Z10 |
| 60 | | | UBW225N-FTU60-3A | $665 | Z10 |
| 70 | | | UBW225N-FTU70-3A | $665 | Z10 |
| 80 | | | UBW225N-FTU80-3A | $728 | Z10 |
| 100 | | | UBW225N-FTU100-3A | $728 | Z10 |
| 125 | | | UBW225N-FTU125-3A | $1,100 | Z10 |
| 150 | | | UBW225N-FTU150-3A | $1,550 | Z10 |
| 200 | | | UBW225N-FTU200-3A | $1,550 | Z10 |
| 225 | | | UBW225N-FTU225-3A | $1,550 | Z10 |
| 15 | 65kA | 25kA | UBW225H-FTU15-3A | $965 | Z10 |
| 20 | | | UBW225H-FTU20-3A | $965 | Z10 |
| 30 | | | UBW225H-FTU30-3A | $965 | Z10 |
| 40 | | | UBW225H-FTU40-3A | $965 | Z10 |
| 50 | | | UBW225H-FTU50-3A | $965 | Z10 |
| 60 | | | UBW225H-FTU60-3A | $965 | Z10 |
| 70 | | | UBW225H-FTU70-3A | $965 | Z10 |
| 80 | | | UBW225H-FTU80-3A | $1,055 | Z10 |
| 100 | | | UBW225H-FTU100-3A | $1,055 | Z10 |
| 125 | | | UBW225H-FTU125-3A | $1,450 | Z10 |
| 150 | | | UBW225H-FTU150-3A | $2,050 | Z10 |
| 200 | | | UBW225H-FTU200-3A | $2,050 | Z10 |
| 225 | | | UBW225H-FTU225-3A | $2,050 | Z10 |
| 15 | 100kA | 35kA | UBW225L-FTU15-3A | $1,200 | Z10 |
| 20 | | | UBW225L-FTU20-3A | $1,200 | Z10 |
| 30 | | | UBW225L-FTU30-3A | $1,200 | Z10 |
| 40 | | | UBW225L-FTU40-3A | $1,200 | Z10 |
| 50 | | | UBW225L-FTU50-3A | $1,200 | Z10 |
| 60 | | | UBW225L-FTU60-3A | $1,200 | Z10 |
| 70 | | | UBW225L-FTU70-3A | $1,200 | Z10 |
| 80 | | | UBW225L-FTU80-3A | $1,200 | Z10 |
| 100 | | | UBW225L-FTU100-3A | $1,350 | Z10 |
| 125 | | | UBW225L-FTU125-3A | $1,350 | Z10 |
| 150 | | | UBW225L-FTU150-3A | $2,800 | Z10 |
| 200 | | | UBW225L-FTU200-3A | $2,400 | Z10 |
| 225 | | | UBW225L-FTU225-3A | $2,400 | Z10 |



Data is subject to change without notice.

## UBW 250 400 600 800 Frame- - Line and load side lugs included








### Frame 250 - Fixed Thermal / Adjustable Magnetic

| Thermal Setting | KA Rating at 480VAC | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|
| 250 | 35 | UBW250N-FTU250-3A | $1,550 | Z10 |
| 250 | 65 | UBW250H-FTU250-3A | $2,050 | Z10 |
| 250 | 100 | UBW250L-FTU250-3A | $2,400 | Z10 |
| **Frame 400 - Fixed Thermal / Adjustable Magnetic** | | | | |
| 300 | 35 | UBW400N-FTU300-3A | $3,000 | Z10 |
| 400 | 35 | UBW400N-FTU400-3A | $3,000 | Z10 |
| 300 | 65 | UBW400H-FTU300-3A | $3,700 | Z10 |
| 400 | 65 | UBW400H-FTU400-3A | $3,700 | Z10 |
| 300 | 100 | UBW400L-FTU300-3A | $4,700 | Z10 |
| 400 | 100 | UBW400L-FTU400-3A | $4,700 | Z10 |
| **Frame 600 - Fixed Thermal / Adjustable Magnetic** | | | | |
| 500 | 35 | UBW600N-FTU500-3A | $5,000 | Z10 |
| 600 | 35 | UBW600N-FTU600-3A | $5,000 | Z10 |
| 500 | 65 | UBW500H-FTU500-3A | $7,000 | Z10 |
| 600 | 65 | UBW600H-FTU600-3A | $7,000 | Z10 |
| 500 | 100 | UBW500L-FTU500-3A | $8,300 | Z10 |
| 600 | 100 | UBW600L-FTU600-3A | $8,300 | Z10 |
| **Frame 800 - Fixed Thermal / Adjustable Magnetic** | | | | |
| 800 | 50 | UBW800S-FTU800-3A | $6,000 | Z10 |
| 800 | 65 | UBW800H-FTU800-3A | $8,000 | Z10 |
| **Frame 1200 with Electronic Trip - Not supplied with lugs** | | | | |
| 800 | 50 | UBW1200S-ELS800-3A | $14,000.00 | Z10 |
| 800 | 65 | UBW1200H-ELS800-3A | $17,950.00 | Z10 |
| 800 | 100 | UBW1200L-ELS800-3A | $21,950.00 | Z10 |
| 1200 | 50 | UBW1200S-ELS1200-3A | $21,300.00 | Z10 |
| 1200 | 65 | UBW1200H-ELS1200-3A | $22,200.00 | Z10 |
| 1200 | 100 | UBW1200L-ELS1200-3A | $23,500.00 | Z10 |
| **Frame 1200 with Electronic Trip and Maintenance Mode - Not supplied with lugs** | | | | |
| 800 | 50 | UBW1200S-ELSI800-3A | $21,950.00 | Z10 |
| 800 | 65 | UBW1200H-ELSI800-3A | $21,950.00 | Z10 |
| 800 | 100 | UBW1200L-ELSI800-3A | $24,600.00 | Z10 |
| 1200 | 50 | UBW1200S-ELSI1200-3A | $22,000.00 | Z10 |
| 1200 | 65 | UBW1200H-ELSI1200-3A | $24,500.00 | Z10 |
| 1200 | 100 | UBW1200L-ELSI1200-3A | $25,800.00 | Z10 |

# Circuit Protection

UBW

## UBW 2500 Frame



### Frame 2500 with Electronic Trip - not supplied with lugs

| Thermal Setting | KA Raing 480vac | Catalog Number | List | Multiplier |
|---|---|---|---|---|
| 1600 | 65 | UBW2500H-ELS1600-3A | $29,600 | Z10 |
| 1600 | 100 | UBW2500L-ELS1600-3A | $32,200 | Z10 |
| 2000 | 65 | UBW2500H-ELS2000-3A | $30,700 | Z10 |
| 2000 | 100 | UBW2500L-ELS2000-3A | $33,300 | Z10 |
| 2500 | 65 | UBW2500H-ELS2500-3A | $32,400 | Z10 |
| 2500 | 100 | UBW2500L-ELS2500-3A | $35,200 | Z10 |

### Frame 2500 with Electronic Trip and Maintenance Mode

| Thermal Setting | KA Raing 480vac | Catalog Number | List | Multiplier |
|---|---|---|---|---|
| 1600 | 65 | UBW2500H-ELSI1600-3A | $32,300 | Z10 |
| 1600 | 100 | UBW2500L-ELSI1600-3A | $34,900 | Z10 |
| 2000 | 65 | UBW2500H-ELSI2000-3A | $33,300 | Z10 |
| 2000 | 100 | UBW2500L-ELSI2000-3A | $36,000 | Z10 |
| 2500 | 65 | UBW2500H-ELSI2500-3A | $35,000 | Z10 |
| 2500 | 100 | UBW2500L-ELSI2500-3A | $37,900 | Z10 |



Data is subject to change without notice.

## UBW Breaker Accessories

### 225 Frame Factory Installed only

**How to order - Example**

|  UBW225H-FTU25-3A List $965.00 |  AX-UBW225 List $699.50 | $965 + $699.50 = $1664.50 | Use Z10 Multiplier |
|---|---|---|---|

| Suffix for Factory Installation | WEG Catalog Number | Description | List | Multiplier |
|---|---|---|---|---|
| A1 | AX UBW225 | AUXILIARY SWITCH | $699.05 | Z10 |
| A2 | AL UBW225 | ALARM SWITCH | $699.05 | |
| A3 | AXAL UBW225 | AUX/ALARM SWTICH | $782.00 | |
| S | SHT UBW225 E59 | SHUNT TRIP 12-24AC/DC | $787.14 | |
| SS | SHT UBW225 E58 | SHUNT TRIP 48-120AC/48-60DC | $787.14 | |
| S0 | SHT UBW225 E62 | SHUNT TRIP 208-380AC/110-127DC | $787.14 | |
| 11 | UVT UBW225 C03 | UNDERVOLTAGE RELEASE 24DC | $787.14 | |
| 12 | UVT UBW225 D60 | UNDERVOLTAGE RELEASE 110-125AC | $787.14 | |
| 13 | UVT UBW225 D96 | UNDERVOLTAGE RELEASE 208-240AC | $787.14 | |

### 250-2500 Frame with Options

**How to order - Example**

|  UBW250 - 2500 Frame List $ |  AX-UBW250 - 2500 List $ |  Installation Charge List $ (optional) | List Prices Totalled | Apply Z10 Multiplier for Final Price |
|---|---|---|---|---|

**UBW250 Frame Options**

| Suffix for Factory Installation | WEG Catalog Number | Description | List | Install List | Multiplier |
|---|---|---|---|---|---|
| A1 | AX UBW250 | AUXILIARY SWITCH | $445.71 | $350.00 | Z10 |
| A2 | AL UBW250 | ALARM SWITCH | $445.71 | $350.00 | |
| A3 | AXAL UBW250 | AUX/ALARM SWTICH | $527.14 | $350.00 | |
| S1 | SHT UBW250 E59 | SHUNT TRIP 12-24AC/DC | $587.14 | $350.00 | |
| S2 | SHT UBW250 E61 | SHUNT TRIP 100-240AC/110-125DC | $587.14 | $350.00 | |
| 21 | UVT UBW250 C03 | UNDERVOLTAGE RELEASE 24DC | $587.14 | $350.00 | |
| 22 | UVT UBW250 D60 | UNDERVOLTAGE RELEASE 110-125AC | $587.14 | $350.00 | |
| 23 | UVT UBW250 D96 | UNDERVOLTAGE RELEASE 208-240AC | $587.14 | $350.00 | |

**UBW400 Frame Options - See above for How to Order**

| Suffix for Factory Installation | WEG Catalog Number | Description | List | Install List | Multiplier |
|---|---|---|---|---|---|
| A1 | AX UBW400 | AUXILIARY SWITCH | $557.41 | $350.00 | Z10 |
| A2 | AL UBW400 | ALARM SWITCH | $557.41 | $350.00 | |
| A3 | AXAL UBW400 | AUX/ALARM SWTICH | $628.29 | $350.00 | |
| S1 | SHT UBW400 E59 | SHUNT TRIP 12-24AC/DC | $627.43 | $350.00 | |
| S2 | SHT UBW400 E61 | SHUNT TRIP 100-240AC/110-125DC | $627.43 | $350.00 | |
| 21 | UVT UBW400 C03 | UNDERVOLTAGE RELEASE 24DC | $627.43 | $350.00 | |
| 22 | UVT UBW400 D60 | UNDERVOLTAGE RELEASE 110-125AC | $627.43 | $350.00 | |
| 23 | UVT UBW400 D96 | UNDERVOLTAGE RELEASE 208-240AC | $627.43 | $350.00 | |

*Example of factory installed catalog number : UBW225N-FTU20-3A-A1*

# Circuit Protection

## UBW

| UBW800 Frame Options - See Previous Page for How to Order | | | | | |
|---|---|---|---|---|---|
| Suffix for Factory Installation | WEG Catalog Number | Description | List | Install List | Multiplier |
| A1 | AX UBW800^ | AUXILIARY SWITCH | $698.67 | $450.00 | Z10 |
| A2 | AL UBW800^ | ALARM SWITCH | $698.67 | $450.00 | |
| A3 | AXAL UBW800^ | AUX/ALARM SWTICH | $772.29 | $450.00 | |
| S5 | SHT UBW800 E60^ | SHUNT TRIP 9-24AC/12-24DC | $873.24 | $450.00 | |
| S6 | SHT UBW8000 D95^ | SHUNT TRIP 100-240AC | $873.24 | $450.00 | |
| 41 | UVT UBW800 C03^ | UNDERVOLTAGE RELEASE 24DC | $873.24 | $450.00 | |
| 42 | UVT UBW80 D60^ | UNDERVOLTAGE RELEASE 110-127AC | $873.24 | $450.00 | |
| 43 | UVT UBW800 D96^ | UNDERVOLTAGE RELEASE 208-240AC | $873.24 | $450.00 | |

| UBW1200 Frame Options - See Previous Page for How to Order | | | | | |
|---|---|---|---|---|---|
| Suffix for Factory Installation | WEG Catalog Number | Description | List | Install List | Multiplier |
| A1 | AX UBW1200 | AUXILIARY SWITCH | $771.43 | $650.00 | Z10 |
| A2 | AL UBW1200 | ALARM SWITCH | $771.43 | $650.00 | |
| A3 | AXAL UBW1200 | AUX/ALARM SWTICH | $865.71 | $650.00 | |
| S7 | SHT UBW1200 E60 | SHUNT TRIP 9-24AC/12-24DC | $964.29 | $650.00 | |
| S8 | SHT UBW1200 D95 | SHUNT TRIP 100-240AC | $964.29 | $650.00 | |
| 51 | UVT UBW1200 C03 | UNDERVOLTAGE RELEASE 24DC | $964.29 | $650.00 | |
| 52 | UVT UBW1200 D60 | UNDERVOLTAGE RELEASE 110-127AC | $964.29 | $650.00 | |
| 53 | UVT UBW1200 D96 | UNDERVOLTAGE RELEASE 208-240AC | $964.29 | $650.00 | |

| UBW2500 Frame Options - See Previous Page for How to Order | | | | | |
|---|---|---|---|---|---|
| Suffix for Factory Installation | WEG Catalog Number | Description | List | Install List | Multiplier |
| A1 | AX UBW2500 | AUXILIARY SWITCH | $1,034.19 | $650.00 | Z10 |
| A2 | AL UBW2500 | ALARM SWITCH | $1,034.19 | $650.00 | |
| S9 | SHT UBW2500 E26 | SHUNT TRIP 24AC/DC | $1,157.14 | $650.00 | |
| S10 | SHT UBW1200 D95 | SHUNT TRIP 100-240AC | $1,157.14 | $650.00 | |
| 61 | UVT UBW2500 C03 | UNDERVOLTAGE RELEASE 24DC | $1,157.14 | $650.00 | |
| 62 | UVT UBW2500 D60 | UNDERVOLTAGE RELEASE 110-127AC | $1,157.14 | $650.00 | |
| 63 | UVT UBW2500 D96 | UNDERVOLTAGE RELEASE 208-240AC | $1,157.14 | $650.00 | |

*Example of factory installed catalog number : UBW225N-FTU20-3A-A1*



Data is subject to change without notice.

## Lugs

### All WEG UBW Circuit Breaker supplied with Line/Load Lugs





| | FRAME | PART NUMBER | CONDUCTOR COUNT | WIRE SIZE RANGE | LUGS COUNT WHEN SOLD SEPARATELY | LIST PRICE | MULTIPLIER |
|---|---|---|---|---|---|---|---|
| Standard Lugs | 225 <= 100A | LT3-UBW225 (SLOTTED HEAD) | 1 | 14-1/0* | 3 | $274.29 | Z10 |
| | 225 >100A | LT3-UBW225 (3/16" SOCKET HEAD) | 1 | 4-4/0 | 3 | $274.29 | Z10 |
| | 250 | LT1-UBW250 | 1 | 4-350 | 1 | $73.09 | Z10 |
| | 400 (300A) | LT1-UBW400 | 1 | 250-500 | 1 | $65.52 | Z10 |
| | 400 (400A) | LT3-UBW400 | 2 | 3/0-250 | 3 | $196.57 | Z10 |
| | 600 (500A) | LT3-UBW600 | 2 | 3/0-350 | 3 | $310.86 | Z10 |
| | 600 (600A) | LT3D-UBW600 | 2 | 400-500 | 3 | $274.29 | Z10 |
| | 800 | LT1A2-UBW800 | 3 | 3/0-400 | 1 | $172.19 | Z10 |
| Optional Lugs | 225 | WT3-UBW225 [1] | 3 | 14-2 | 3 | $212.10 | Z10 |
| | 225 | WT6-UBW225 [1] | 6 | 14-6 | 3 | $212.10 | Z10 |
| | 250 | WT3-UBW250 [1] | 3 | 14-2 | 3 | $370.76 | Z10 |
| | 250 | WT6-UBW250 [1] | 6 | 14-6 | 3 | $370.76 | Z10 |
| | 400 | WT3-UBW400 [1] | 3 | 12-2/0 | 1 | $382.29 | Z10 |
| | 400 | WT6-UBW400 [1] | 6 | 14-3 | 1 | $382.29 | Z10 |
| | 600 | LT3D-UBW400 | 1 | 4/0-600 | 3 | $252.95 | Z10 |
| | 600 | LT1D-UBW450 | 2 | 4-4/0 | 1 | $156.95 | Z10 |
| | 800 | LT1A1-UBW700 | 2 | 1-500 | 1 | $126.48 | Z10 |
| | 800 | LT1A-UBW800 | 2 | 500-750 | 1 | $219.63 | Z10 |
| | 1200 | LT1B2-UBW700 | 2 | 1-500 | 1 | $121.50 | Z10 |
| | 1200 | LT1B3-UBW1000 | 3 | 3/0-400 | 1 | $163.79 | Z10 |
| | 1200 | LT1B4-UBW1200 | 4 | 4/0-500 | 1 | $230.14 | Z10 |
| | 1200 | LT1B3-UBW1200 | 3 | 500-750 | 1 | $243.00 | Z10 |
| | 2500 | LT1A-UBW1600 | 4 | 500-1000 | 1 | $333.71 | Z10 |
| | 2500 | LT1C-UBW1600 | 4 | 1-600 | 1 | $530.29 | Z10 |
| | 2500 | LT3-UBW2000 | 6 | 2-600 | 9 | $3,771.43 | ? |
| | 2500 | RT1-UBW2000 | 4 | 1-600 | 1 | $299.57 | Z10 |
| | 2500 | RT1-UBW2500 | 6 | 2-600 | 1 | $641.14 | Z10 |

*Note:*
*1) Power Distribution lugs for installation on load side only*
**For Conductor size on UBW225 100AMP Lug and below contact WEG*

# Circuit Protection

## UBW



### Handle/Mechanism/Shafts NEMA 1/3R/12

| Part Number | Description | List | Multiplier |
|---|---|---|---|
| EHC6-UBW225 | Handle + Mechanism + Shaft 6" | $372.86 | Z10 |
| EHC12-UBW225 | Handle + Mechanism + Shaft 12" | $384.29 | Z10 |
| EHC16-UBW225 | Handle + Mechanism + Shaft 16" | $410.00 | Z10 |
| EHC24-UBW225 | Handle + Mechanism + Shaft 24" | $437.33 | Z10 |
| EHC6-UBW250 | Handle + Mechanism + Shaft 6" | $285.71 | Z10 |
| EHC12-UBW250 | Handle + Mechanism + Shaft 12" | $397.24 | Z10 |
| EHC16-UBW250 | Handle + Mechanism + Shaft 16" | $497.90 | Z10 |
| EHC24-UBW250 | Handle + Mechanism + Shaft 24" | $517.43 | Z10 |
| EHC6-UBW400 | Handle + Mechanism + Shaft 6" | $393.33 | Z10 |
| EHC12-UBW400 | Handle + Mechanism + Shaft 12" | $407.71 | Z10 |
| EHC16-UBW400 | Handle + Mechanism + Shaft 16" | $482.29 | Z10 |
| EHC24-UBW400 | Handle + Mechanism + Shaft 24" | $530.95 | Z10 |
| EHC6-UBW800^ | Handle + Mechanism + Shaft 6" | $544.76 | Z10 |
| EHC12-UBW800^ | Handle + Mechanism + Shaft 12" | $557.05 | Z10 |
| EHC16-UBW800^ | Handle + Mechanism + Shaft 16" | $650.19 | Z10 |
| EHC24-UBW800^ | Handle + Mechanism + Shaft 24" | $679.43 | Z10 |
| EHC6-UBW1200 | Handle + Mechanism + Shaft 6" | $656.33 | Z10 |
| EHC12-UBW1200 | Handle + Mechanism + Shaft 12" | $573.05 | Z10 |
| EHC16-UBW1200 | Handle + Mechanism + Shaft 16" | $679.43 | Z10 |
| EHC24-UBW1200 | Handle + Mechanism + Shaft 24" | $709.76 | Z10 |

^ *For both UBW600 and UBW800 products*

*Note: UBW 2500 utilizes flange mount mechanism only. Rotary handle is not available.*



Data is subject to change without notice.

## Handle/Mechanism/Shafts NEMA 4/4X

| Part Number | Description | List | Multiplier |
|---|---|---|---|
| EHC6X-UBW225 | Handle + Mechanism + Shaft 6" | $468.57 | Z10 |
| EHC12X-UBW225 | Handle + Mechanism + Shaft 12" | $482.29 | Z10 |
| EHC16X-UBW225 | Handle + Mechanism + Shaft 16" | $536.95 | Z10 |
| EHC24X-UBW225 | Handle + Mechanism + Shaft 24" | $548.67 | Z10 |
| EHC6X-UBW250 | Handle + Mechanism + Shaft 6" | $548.67 | Z10 |
| EHC12X-UBW250 | Handle + Mechanism + Shaft 12" | $577.90 | Z10 |
| EHC16X-UBW250 | Handle + Mechanism + Shaft 16" | $613.05 | Z10 |
| EHC24X-UBW250 | Handle + Mechanism + Shaft 24" | $634.57 | Z10 |
| EHC6X-UBW400 | Handle + Mechanism + Shaft 6" | $549.67 | Z10 |
| EHC12X-UBW400 | Handle + Mechanism + Shaft 12" | $587.43 | Z10 |
| EHC16X-UBW400 | Handle + Mechanism + Shaft 16" | $622.57 | Z10 |
| EHC24X-UBW400 | Handle + Mechanism + Shaft 24" | $644.10 | Z10 |
| EHC6X-UBW800^ | Handle + Mechanism + Shaft 6" | $736.10 | Z10 |
| EHC12X-UBW800^ | Handle + Mechanism + Shaft 12" | $765.33 | Z10 |
| EHC16X-UBW800^ | Handle + Mechanism + Shaft 16" | $804.38 | Z10 |
| EHC24X-UBW800^ | Handle + Mechanism + Shaft 24" | $804.38 | Z10 |
| EHC6X-UBW1200 | Handle + Mechanism + Shaft 6" | $765.33 | Z10 |
| EHC12X-UBW1200 | Handle + Mechanism + Shaft 12" | $784.86 | Z10 |
| EHC16X-UBW1200 | Handle + Mechanism + Shaft 16" | $833.71 | Z10 |
| EHC24X-UBW1200 | Handle + Mechanism + Shaft 24" | $833.71 | Z10 |

*Note: UBW 2500 utilizes flange mount mechanism only. Rotary handle is not available.*
*^ For both UBW600 and UBW800 products*

# Circuit Protection

## UBW



### Flange Handle 1/3R/12

| Part Number | Description | List | Multiplier |
|---|---|---|---|
| FHP3-UBW225 | Flexible Shaft 3' Cable | $871.11 | Z10 |
| FHP5-UBW225 | Flexible Shaft 5' Cable | $906.67 | Z10 |
| FHP6-UBW225 | Flexible Shaft 6' Cable | $933.33 | Z10 |
| FHP3-UBW250 | Flexible Shaft 3' Cable | $1,022.22 | Z10 |
| FHP5-UBW250 | Flexible Shaft 5' Cable | $1,056.00 | Z10 |
| FHP6-UBW250 | Flexible Shaft 6' Cable | $1,073.60 | Z10 |
| FHP3-UBW400 | Flexible Shaft 3' Cable | $1,102.22 | Z10 |
| FHP5-UBW400 | Flexible Shaft 5' Cable | $1,144.00 | Z10 |
| FHP6-UBW400 | Flexible Shaft 6' Cable | $1,160.44 | Z10 |
| FHP5-UBW800^ | Flexible Shaft 5' Cable | $1,379.92 | Z10 |
| FHP6-UBW800^ | Flexible Shaft 6' Cable | $1,442.04 | Z10 |
| FHP5-UBW1200 | Flexible Shaft 5' Cable | $1,426.76 | Z10 |
| FHP6-UBW1200 | Flexible Shaft 6' Cable | $1,591.11 | Z10 |
| FHP5-UBW2500 | Flexible Shaft 5' Cable | $1,608.62 | Z10 |
| FHP6-UBW2500 | Flexible Shaft 6' Cable | $1,648.71 | Z10 |

^ *For both UBW600 and UBW800 products*

### Flange Handle 4/4X

| Part Number | Description | List | Multiplier |
|---|---|---|---|
| FHP3X-UBW225 | Flexible Shaft 3' Cable | $945.78 | Z10 |
| FHP5X-UBW225 | Flexible Shaft 5' Cable | $1,057.76 | Z10 |
| FHP6X-UBW225 | Flexible Shaft 6' Cable | $1,070.22 | Z10 |
| FHP3X-UBW250 | Flexible Shaft 3' Cable | $1,141.07 | Z10 |
| FHP5X-UBW250 | Flexible Shaft 5' Cable | $1,186.04 | Z10 |
| FHP6X-UBW250 | Flexible Shaft 6' Cable | $1,191.47 | Z10 |
| FHP3X-UBW400 | Flexible Shaft 3' Cable | $1,228.71 | Z10 |
| FHP5X-UBW400 | Flexible Shaft 5' Cable | $1,259.28 | Z10 |
| FHP6X-UBW400 | Flexible Shaft 6' Cable | $1,264.89 | Z10 |
| FHP5X-UBW800^ | Flexible Shaft 5' Cable | $1,508.00 | Z10 |
| FHP6X-UBW800^ | Flexible Shaft 6' Cable | $1,536.44 | Z10 |
| FHP5X-UBW1200 | Flexible Shaft 5' Cable | $1,608.71 | Z10 |
| FHP6X-UBW1200 | Flexible Shaft 6' Cable | $1,626.22 | Z10 |
| FHP5X-UBW2500 | Flexible Shaft 5' Cable | $1,720.44 | Z10 |
| FHP6X-UBW2500 | Flexible Shaft 6' Cable | $1,763.11 | Z10 |

^ *For both UBW600 and UBW800 products*



Data is subject to change without notice.

## WEG – On/Off Locking Mechanisms

| Frame | Part Number | Padlock Style | List | Multiplier |
|---|---|---|---|---|
| 225 | HL-UBW225 | HASP | $106.76 | Z10 |
| 250/400 | HL-UBW400 | HASP | $118.19 | |
| 600 | PL-UBW600 | HASP | $173.24 | |
| 800 | PL-UBW800 | HASP | $188.43 | |
| 1200 | HL-UBW1200 | HASP | $229.00 | |
| 2500 | PL-UBW2500 | HASP | $314.10 | |



WEG Padlock - PL and HL

## Direct Mount Handle

| Frame | Part Number | List( | Multiplier |
|---|---|---|---|
| 225 | DHI-UBW225 | $321.43 | Z10 |
| 250 | DHI-UBW250 | $321.43 | |
| 400 | DHI-UBW400 | $347.14 | |
| 600 (500/600AMP) | DHI-UBW800 | $330.00 | |
| 600/800AMP | DHI-UBW600 | $330.00 | |
| 600/800AMP | EDHI-UBW800 | $53.81 | |
| 1200 | EDHI-UBW1200 | $78.10 | |
| 2500 | EDHI-UBW2500 | $104.10 | |



DHI Style



EDHI Style

# Circuit Protection

## UBW

| Frame Size | 225 | 250 | 400 | 600 | 800 | 1200 | 2500 |
|---|---|---|---|---|---|---|---|
| Rated Current - In 40° C | 15,20,30,40,50,60,70,80, 100,125,200,225 | 250 | 300,400 | 500,600 | 800 | 800,1200 | 1600,2000,2500 |
| No.Of Poles | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Rated operational Voltage-Ue | 600 | 600 | 600 | 600 | 600 | 600 | 600 |
| Max Options | 2* | 2** | 2** | 2** | 2** | 2** | 3*** |
| Reference standard | UL489 | UL489 | UL489 | UL489 | UL489 | UL489 | UL489 |

**Factory Installed Only ** 1 Option-Right, 1 Option Left *** All Options Right Side Only*

| UL interupting rating- Icu | | N | H | L |
|---|---|---|---|---|
| Frame 225 | 120VAC | 65kA | 100kA | 200kA |
| | 240VAC | 65kA | 100kA | 200kA |
| | 480VAC | 35kA | 65kA | 100kA |
| | 600VAC | 18kA | 25kA | 35kA |
| Frame 250 | 120VAC | 65kA | 100kA | 200kA |
| | 240VAC | 65kA | 100kA | 200kA |
| | 480VAC | 35kA | 65kA | 100kA |
| | 600VAC | 18kA | 25kA | 35kA |
| Frame 400 | 120VAC | 65kA | 100kA | 200kA |
| | 240VAC | 65kA | 100kA | 200kA |
| | 480VAC | 35ka | 65kA | 100kA |
| | 600VAC | 25kA | 35kA | 65kA |
| Frame 600 | 120VAC | 65kA | 100kA | 200kA |
| | 240VAC | 65kA | 100kA | 200kA |
| | 480VAC | 35kA | 65kA | 100kA |
| | 600VAC | 25kA | 35kA | 50kA |
| | | S | H | |
| Frame 800 | 120VAC | 65kA | 100kA | |
| | 240VAC | 65kA | 100kA | |
| | 480VAC | 50kA | 65kA | |
| | 600VAC | 25kA | 35kA | |
| | | S | H | L |
| Frame 1200 | 120VAC | 85kA | 100kA | 200kA |
| | 240VAC | 85kA | 100kA | 200kA |
| | 480VAC | 50kA | 65kA | 100kA |
| | 600VAC | 25kA | 35kA | 45Ka |
| | | N/A | H | L |
| Frame 2500 | 120VAC | N/A | 125kA | 200kA |
| | 240VAC | N/A | 125kA | 200kA |
| | 480VAC | N/A | 65kA | 100kA |
| | 600VAC | N/A | 50kA | 65Ka |

Options available for all :

| Frame Sizes: |
|---|
| Auxiliary Contacts* |
| Alarm Contacts* |
| Shunt Trip Units * |
| Undervoltage Trip Units* |

* 225 Frame must be Factory Installed

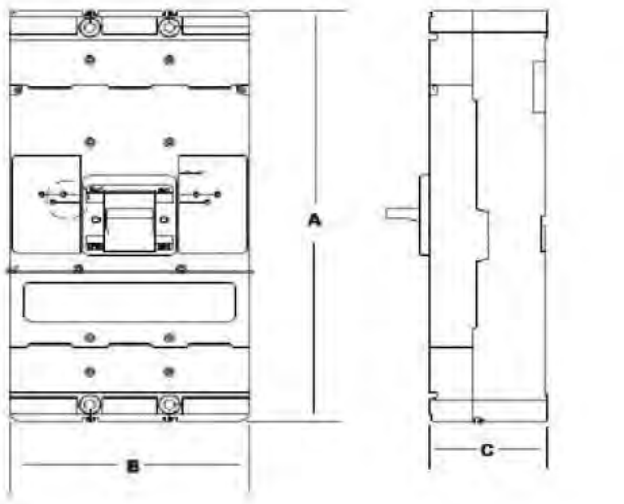
UL File No. E310239 for all frame sizes

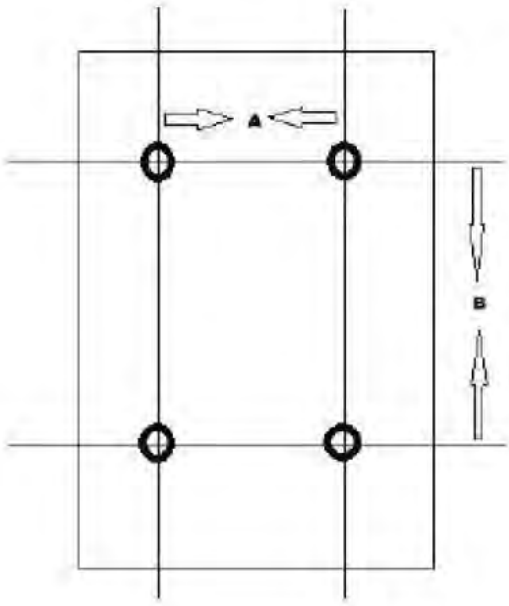


Data is subject to change without notice.

## UBW Quick View Dimensions

**Outside Dimensions**
**Frames 225, 250, 400, 600, 800, 1200, 2500**




| Mounting Hole Dimensions | | |
|---|---|---|
| Frame | Dimensions | |
| | inches/mm | inches/mm |
| 225 | 1.375/34.93 | 4.3/114.30 |
| 250 | 1.375/34.37 | 7.25/184.15 |
| 400 | 1.71/43.66 | 8.438/214.12 |
| 600 | 8.75/222.25 | 9.53/242.09 |
| 800 | 2.75/69.85 | 14.75/374.65 |
| 1200 | 2.75/69.85 | 18.43/374.65 |
| 2500 | 14.50/368.30 | 15.00/381.22 |

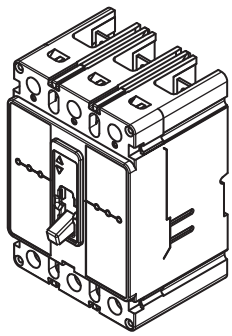
| Frame Size | Overall Dimensions | | |
|---|---|---|---|
| | A | B | C |
| | inches/mm | inches/mm | inches/mm |
| 225 | 6/152 | 4.1/104 | 3.5/89 |
| 250 | 10/254 | 4.1/104 | 4.3/110 |
| 400 | 10.12/257 | 5.49/139 | 4.3/110 |
| 600 | 10.75/253.05 | 8.25/209.6 | 4/110 |
| 800 | 16/406.4 | 8.22/208.74 | 4.06/103.18 |
| 1200 | 16/406.4 | 8.25/209.55 | 5.5/139.7 |
| 2500 | 16/406.4 | 15.5/393.7 | 9/228.6 |

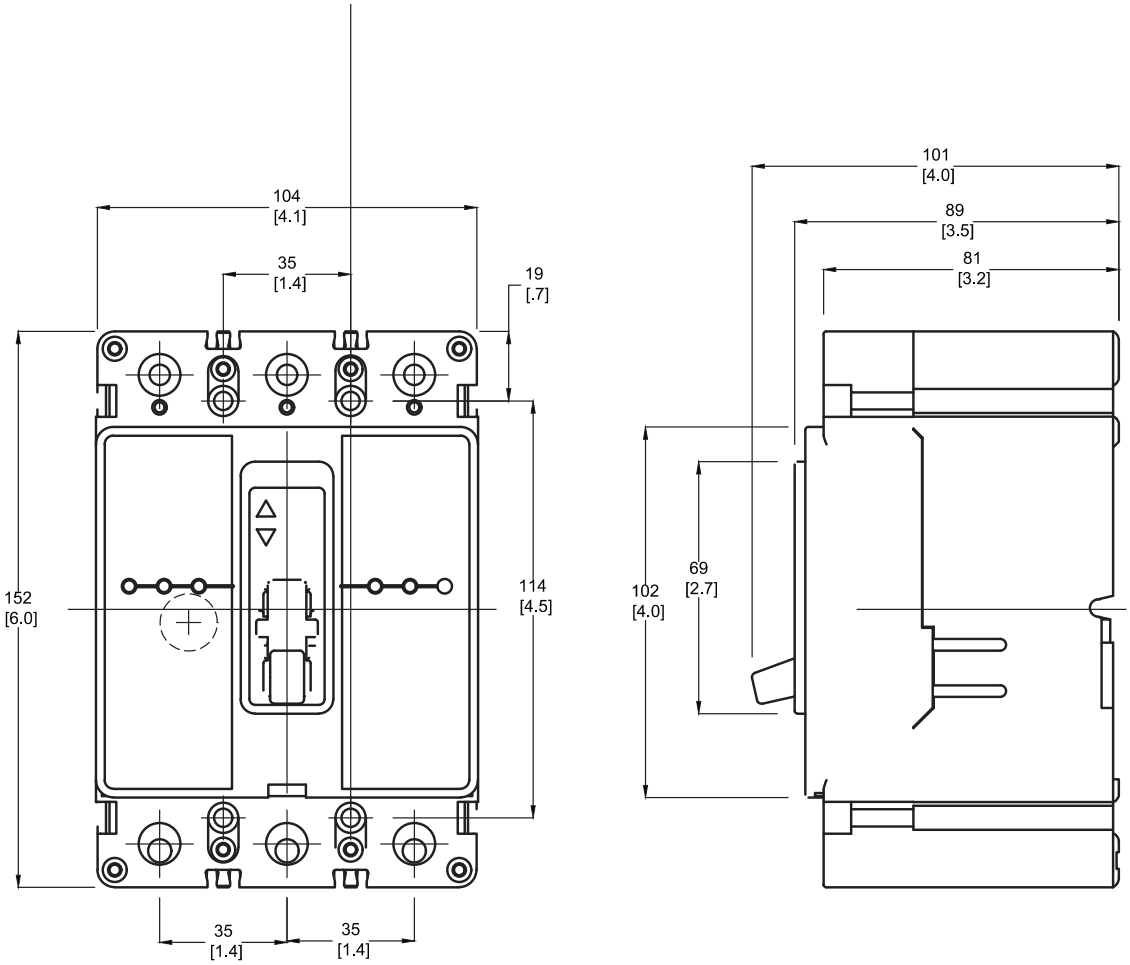
| Mounting Hardware | | | |
|---|---|---|---|
| Frame | Qty. | Std Bolt Size | metric |
| 225 | 4 | 5/32-32 | M4-0.70 |
| 250 | 4 | 1/4-20 | M6-1.0 |
| 400 | 4 | 1/4-20 | M6-1.0 |
| 600 | 4 | 1/4-20 | M6-1.0 |
| 800 | 4 | 1/4-20 | M6-1.0 |
| 1200* | 4 | 5/16-18 | M8-1.25 |
| 2500* | 4 | 3/8-16 | M11-150 |

** Supplied with Breakers*

UBW

## Dimensions Frame 225



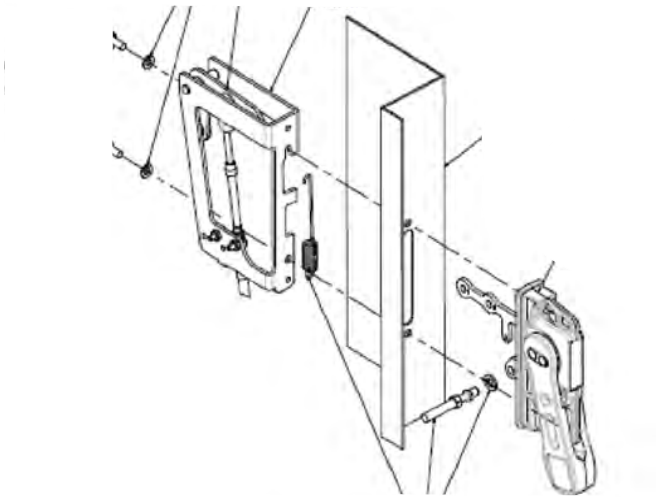


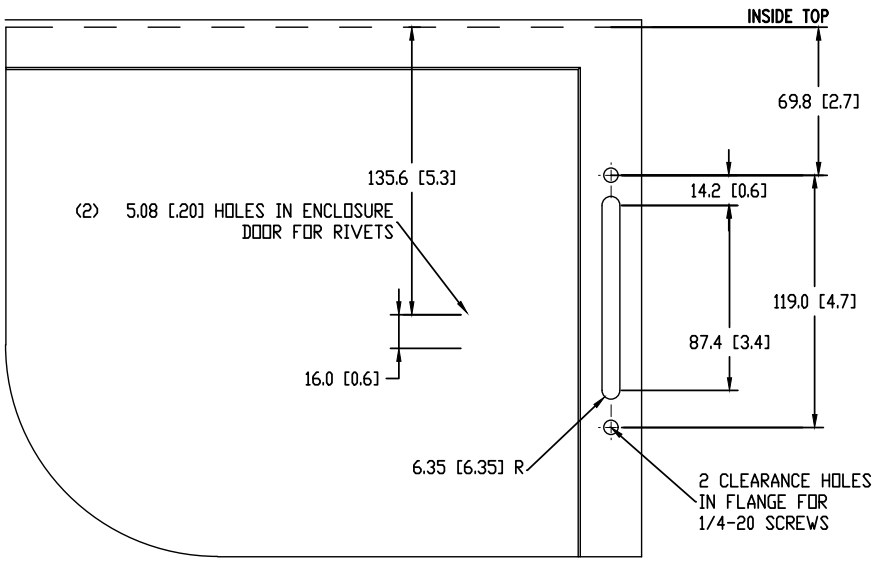





Data is subject to change without notice.

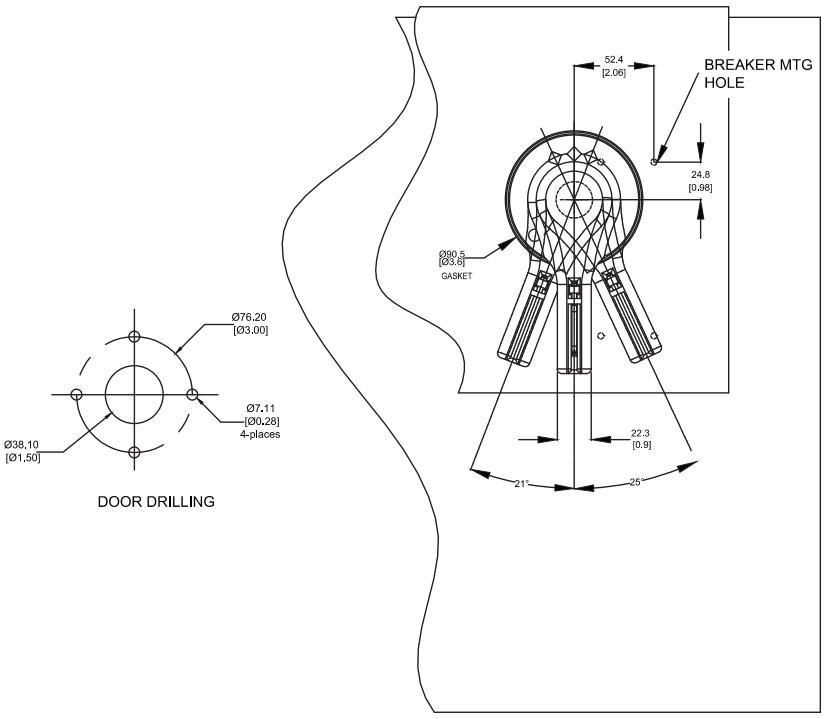
## Dimensions Frame 225 - Flange Handle

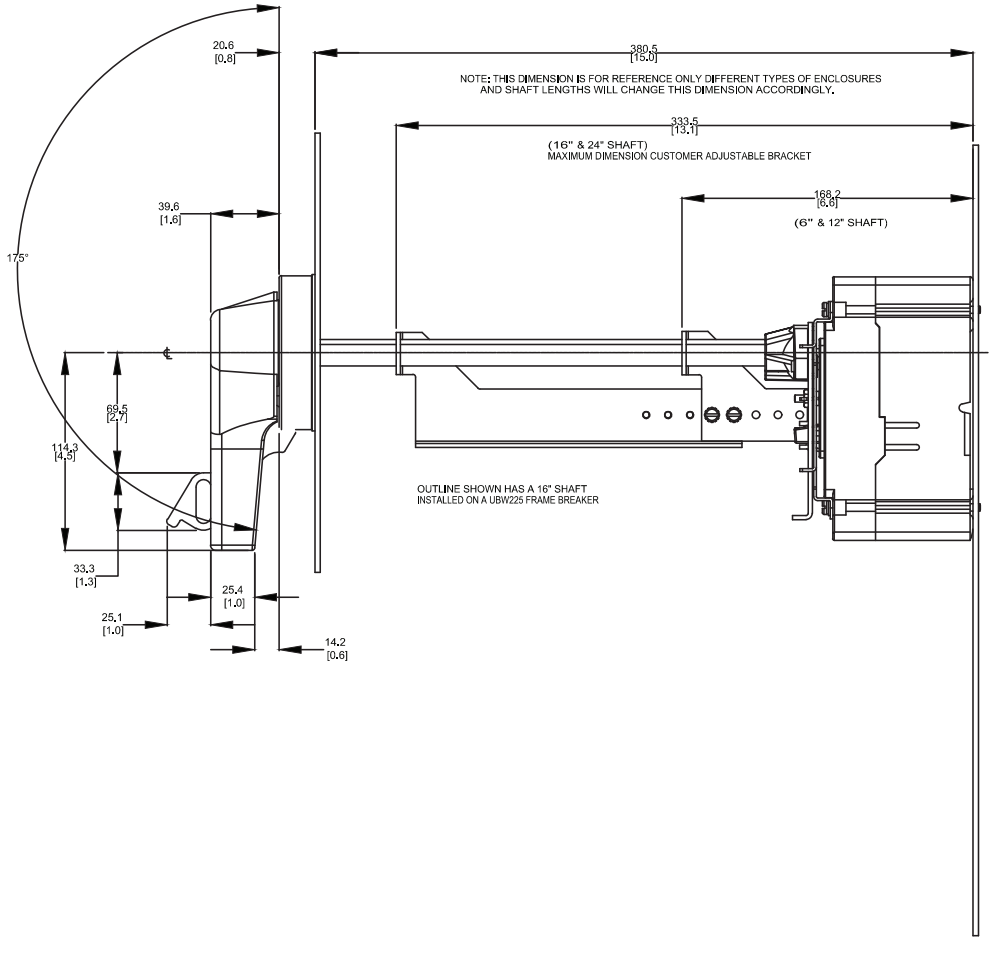




UBW

## Dimensions Frame 225 - Rotary Handle

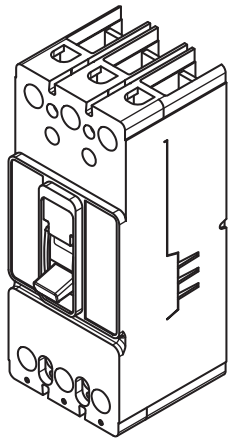


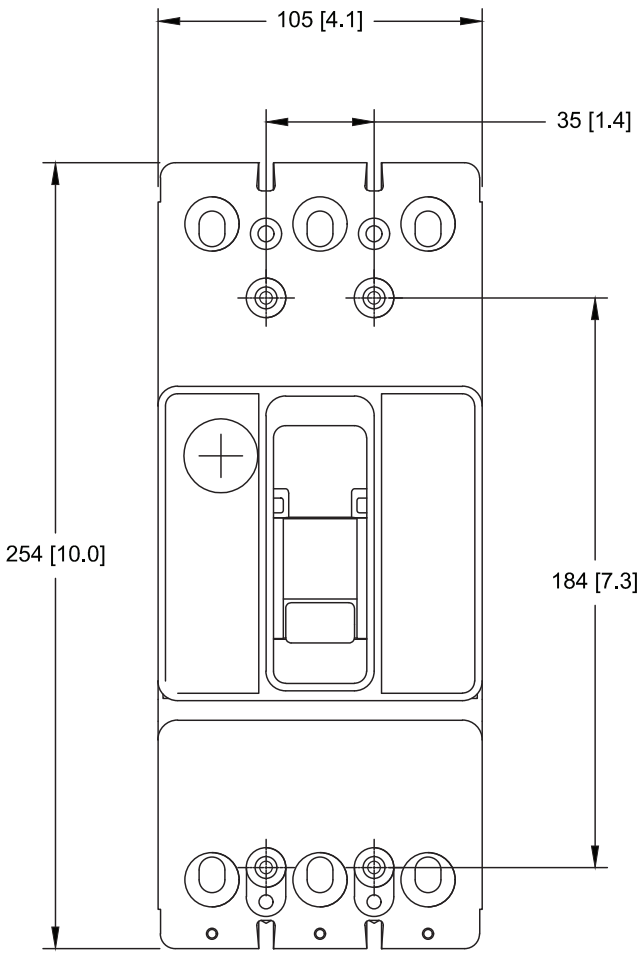



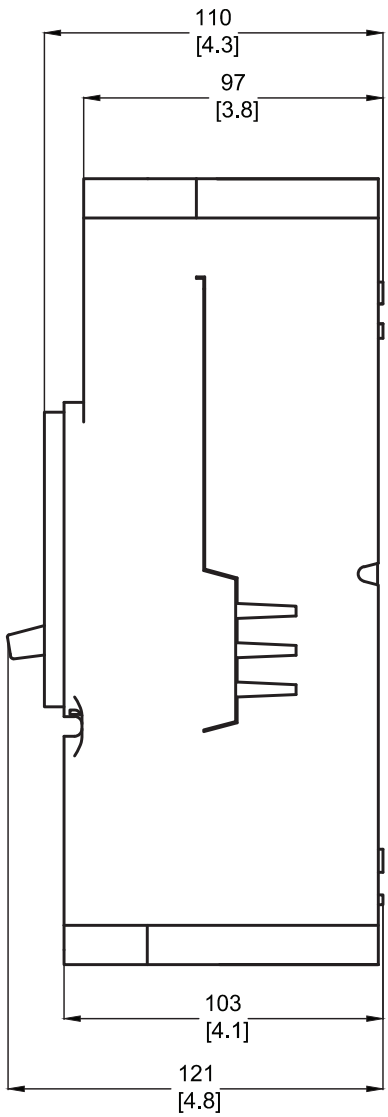



Data is subject to change without notice.

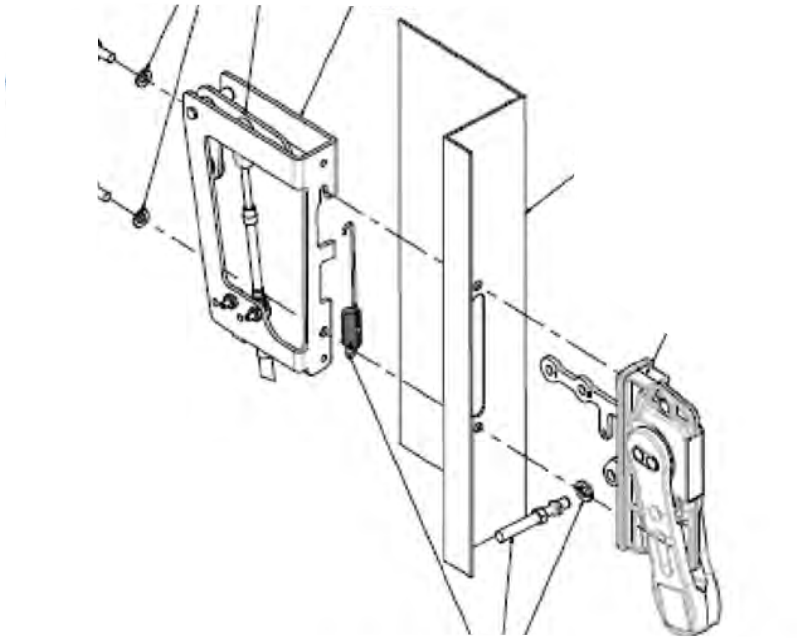
## Dimensions Frame 250

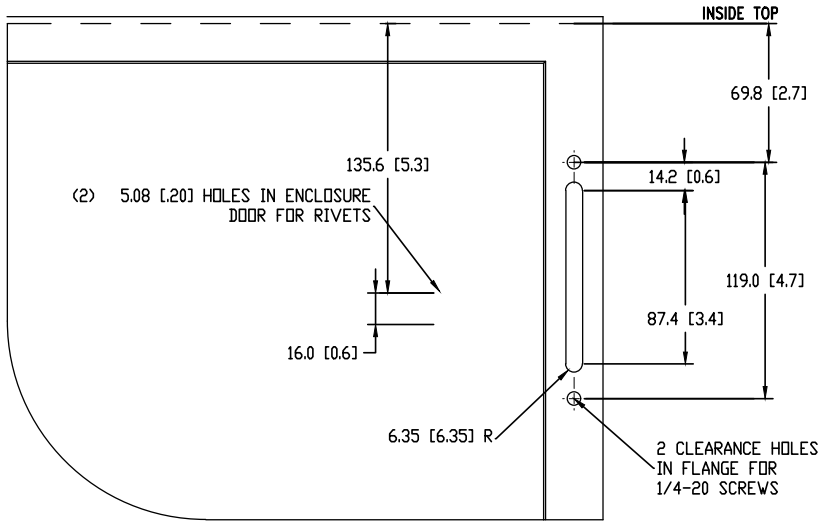




## Dimensions Frame 250 - Flange Handle



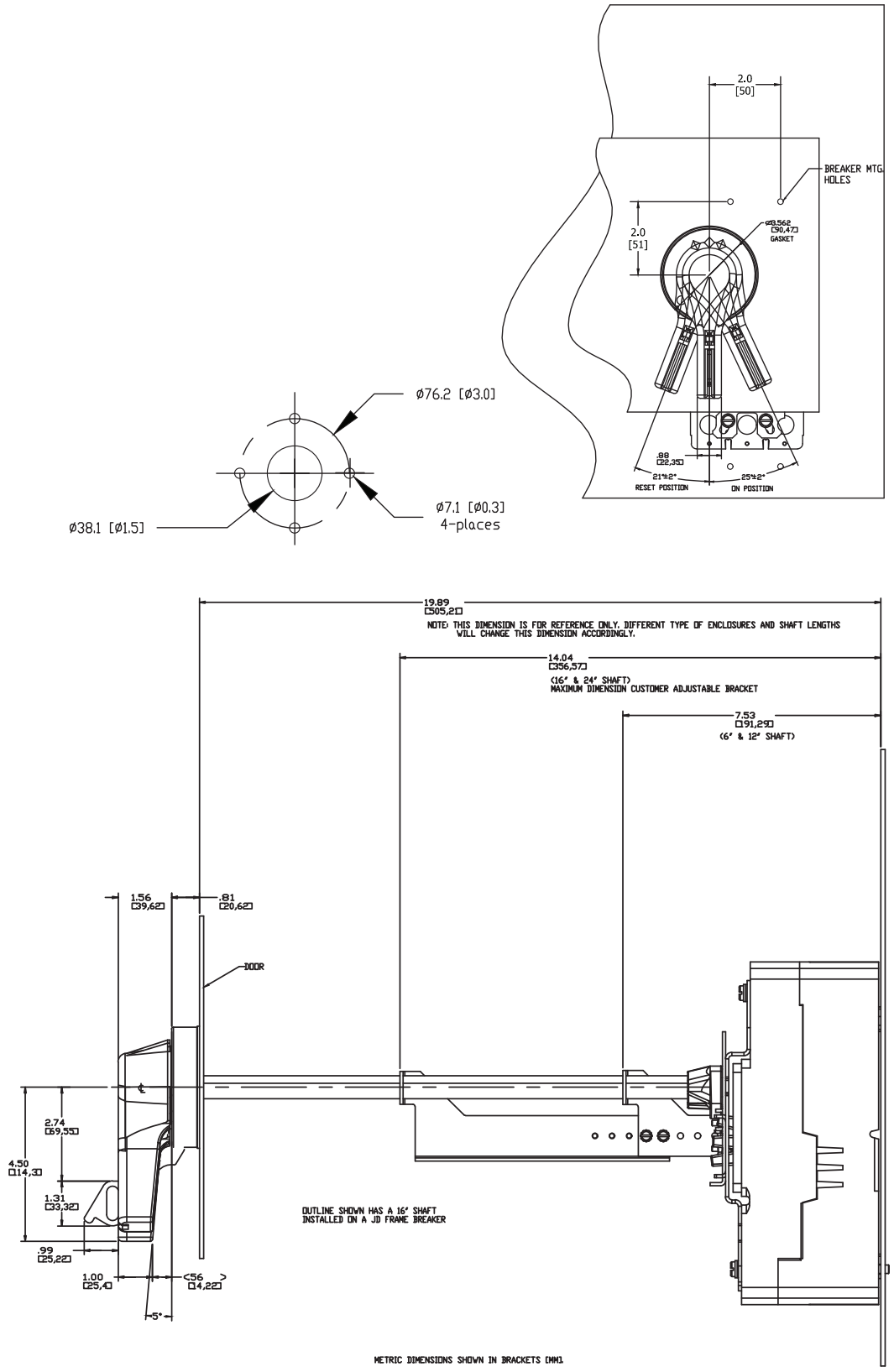






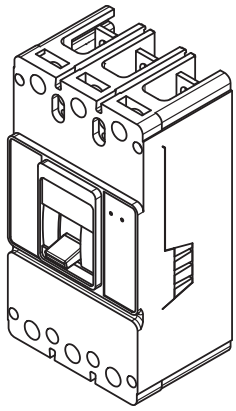

Data is subject to change without notice.

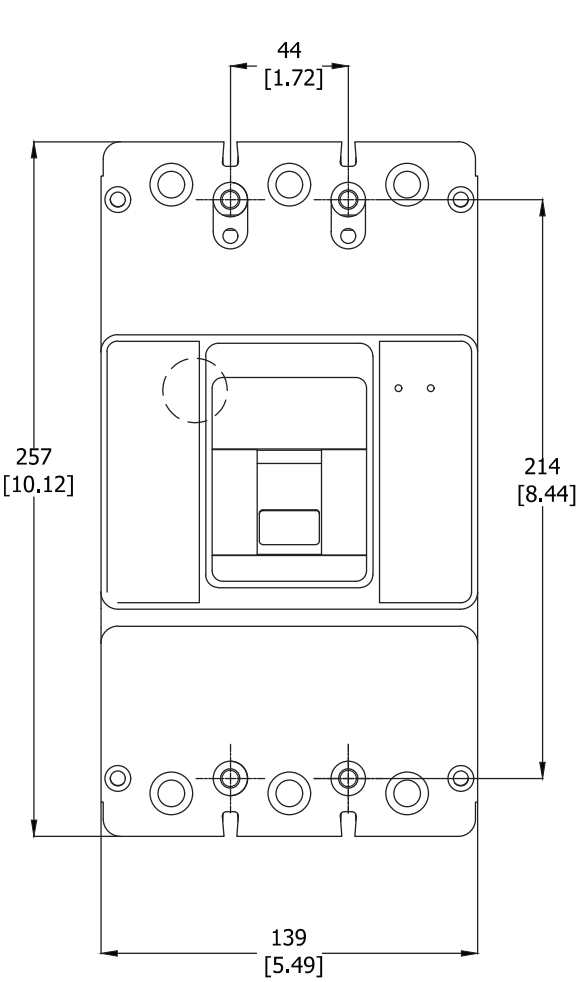
## Dimensions Frame 250 - Rotary Handle

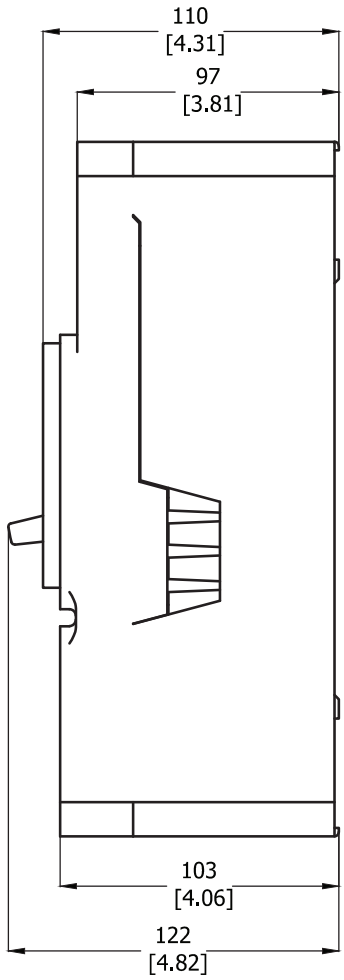


UBW

## Dimensions Frame 400





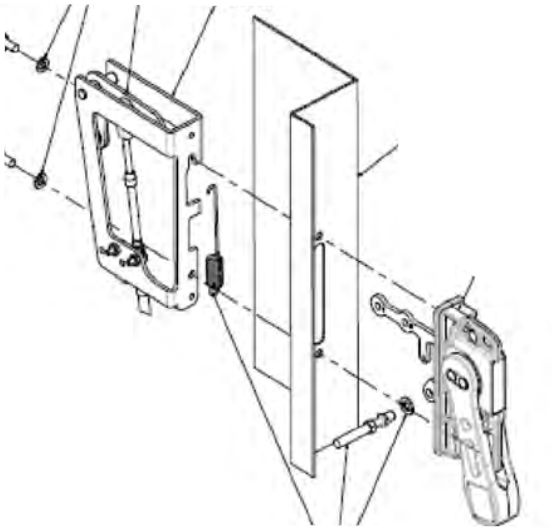



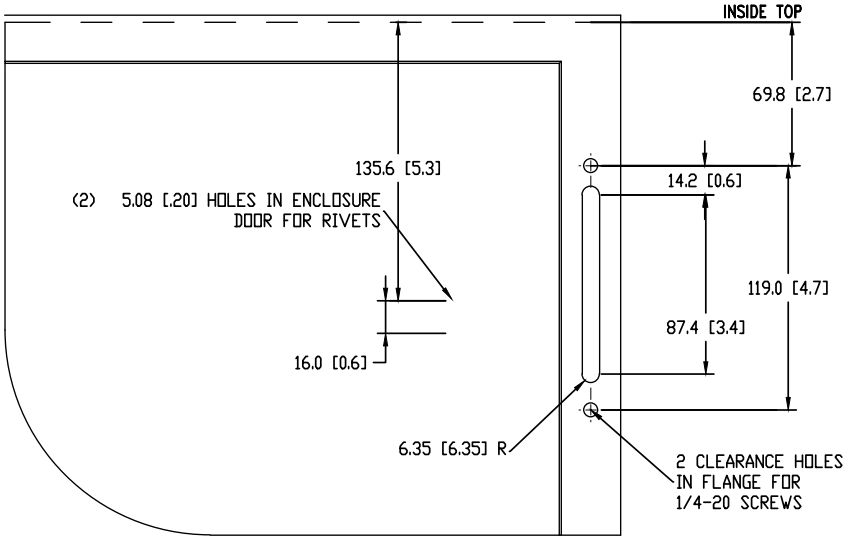




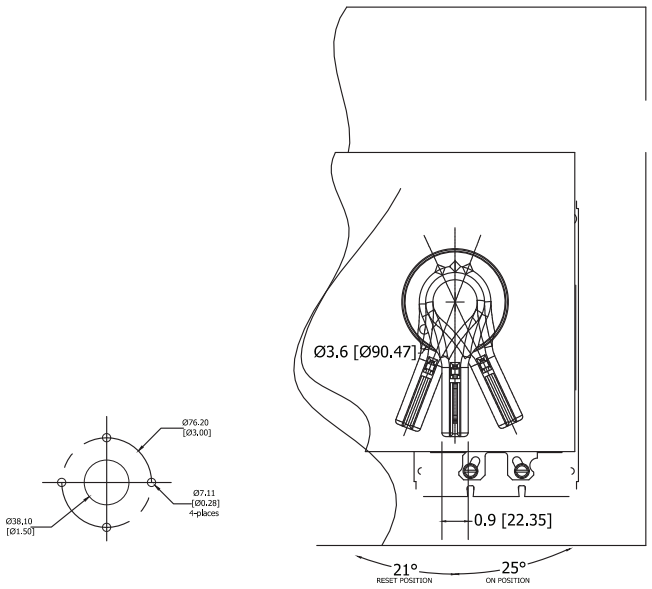

Data is subject to change without notice.

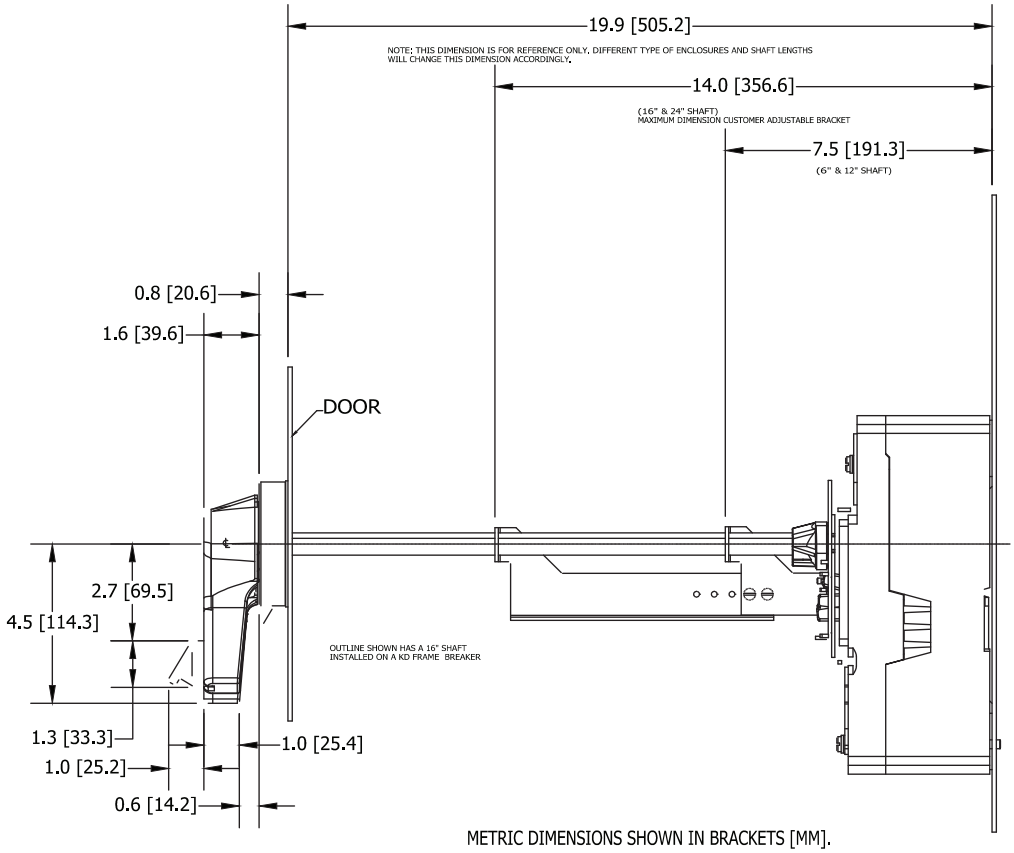
## Dimensions Frame 400 - Flange Handle





## Dimensions Frame 400 - Rotary Handle



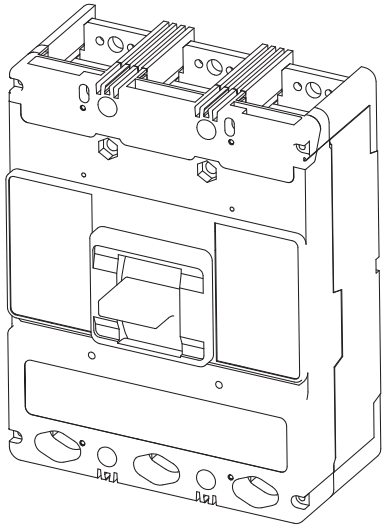



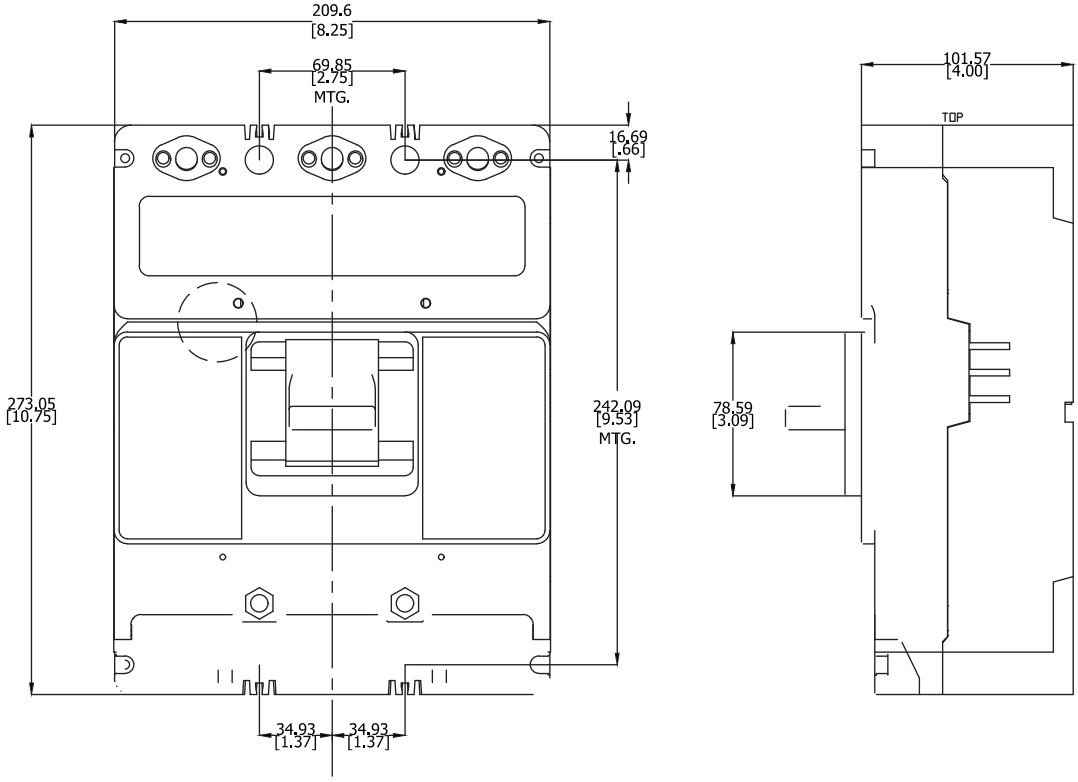

METRIC DIMENSIONS SHOWN IN BRACKETS [MM].



Data is subject to change without notice.

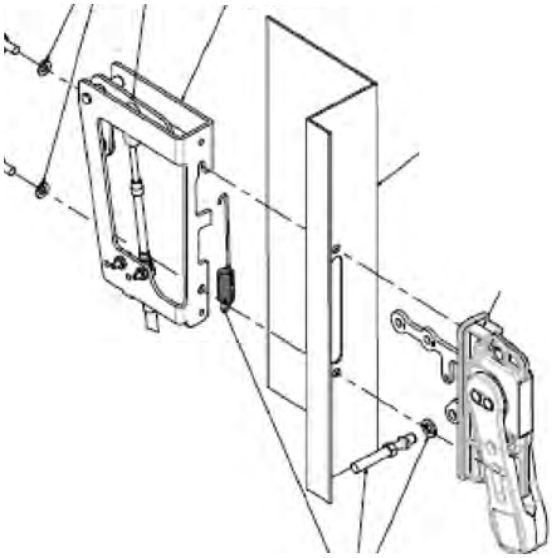
## Dimensions Frame 600

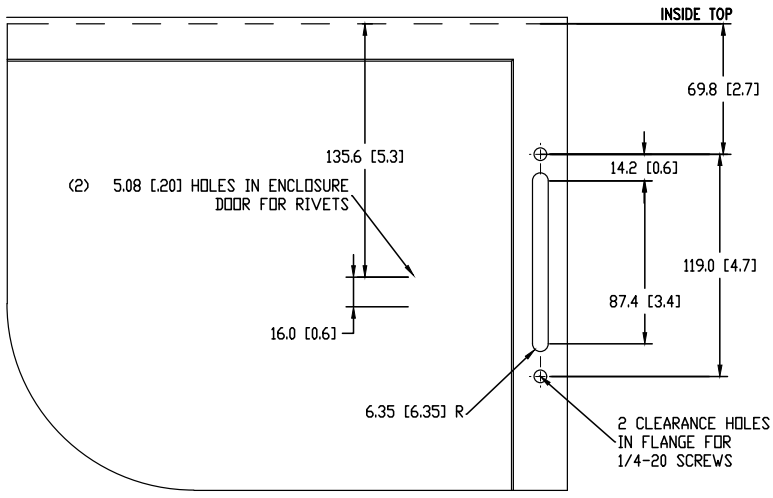




UBW

## Dimensions Frame 600 - Flange Handle

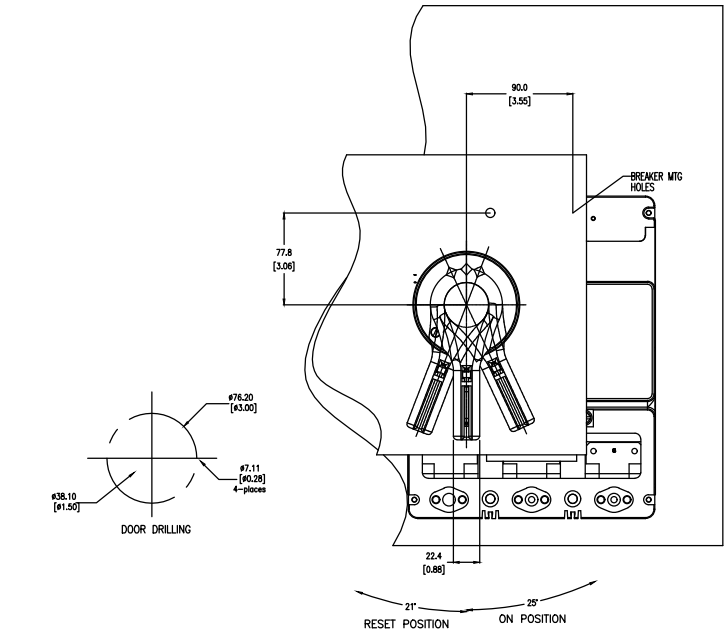


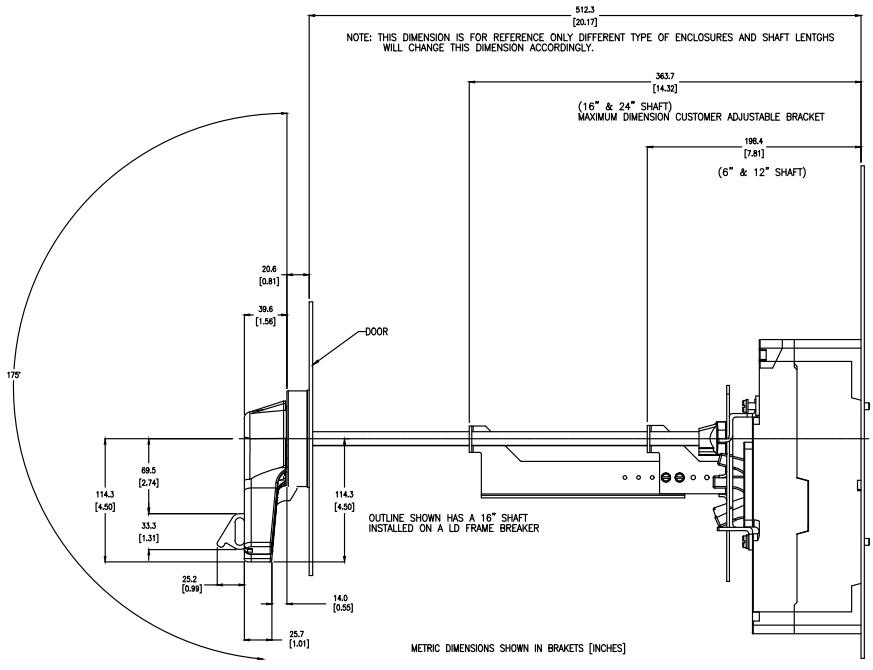





Data is subject to change without notice.

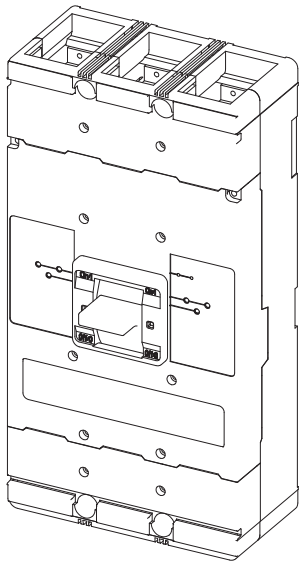
## Dimensions Frame 600 - Rotary Handle

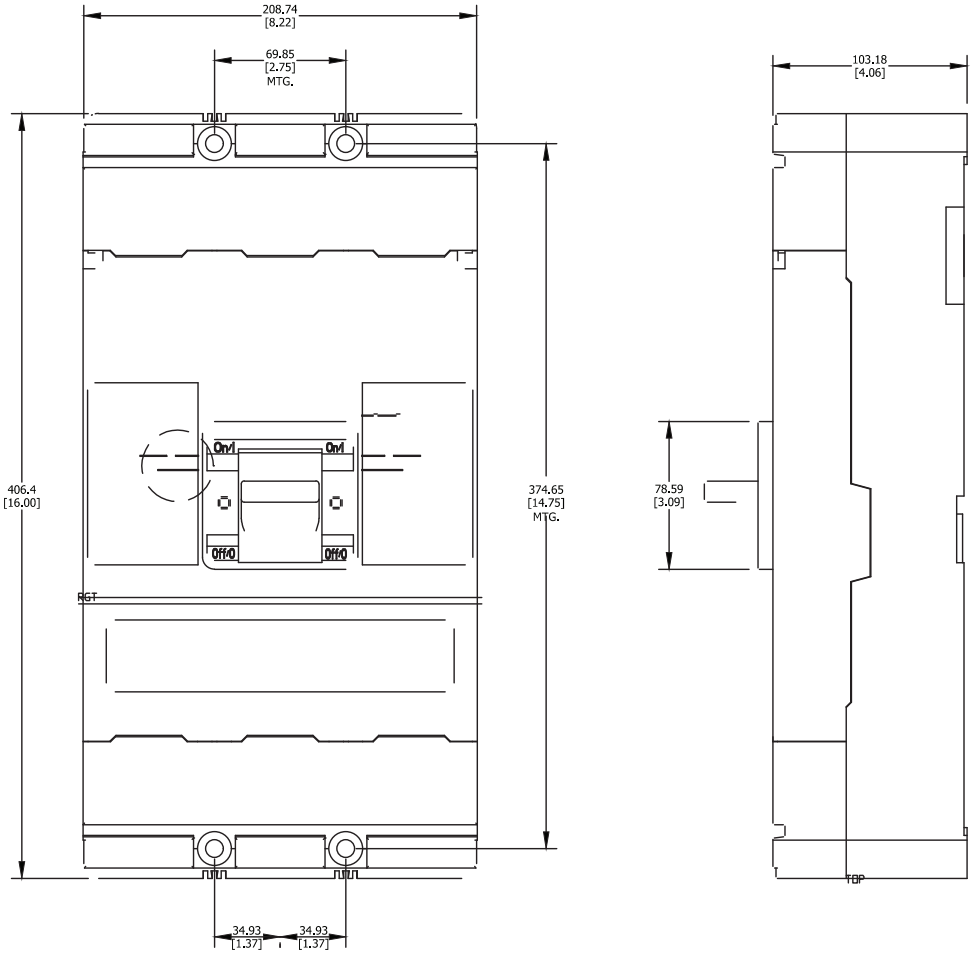


UBW

## Dimensions Frame 800

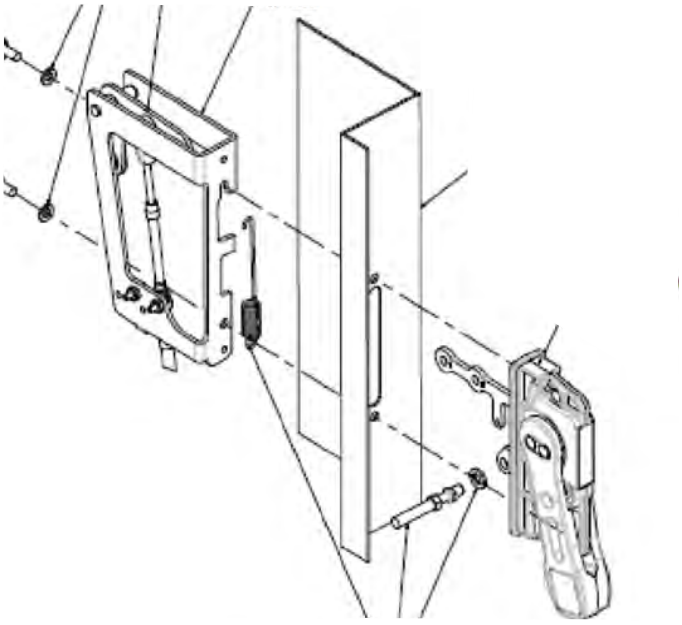


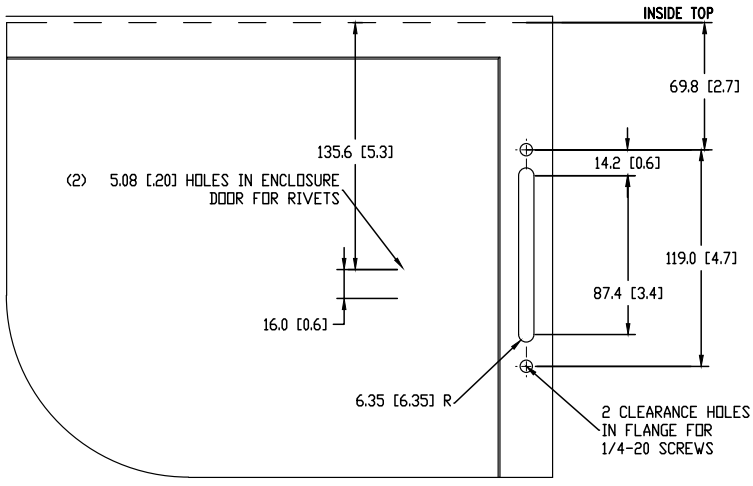





Data is subject to change without notice.

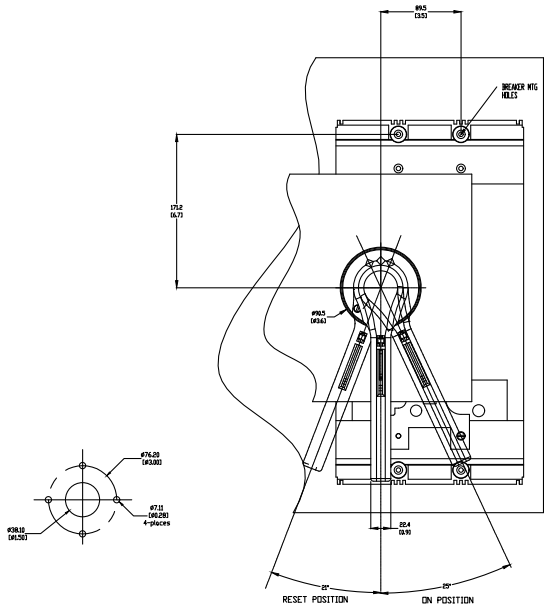
## Dimensions Frame 800 - Flange Handle

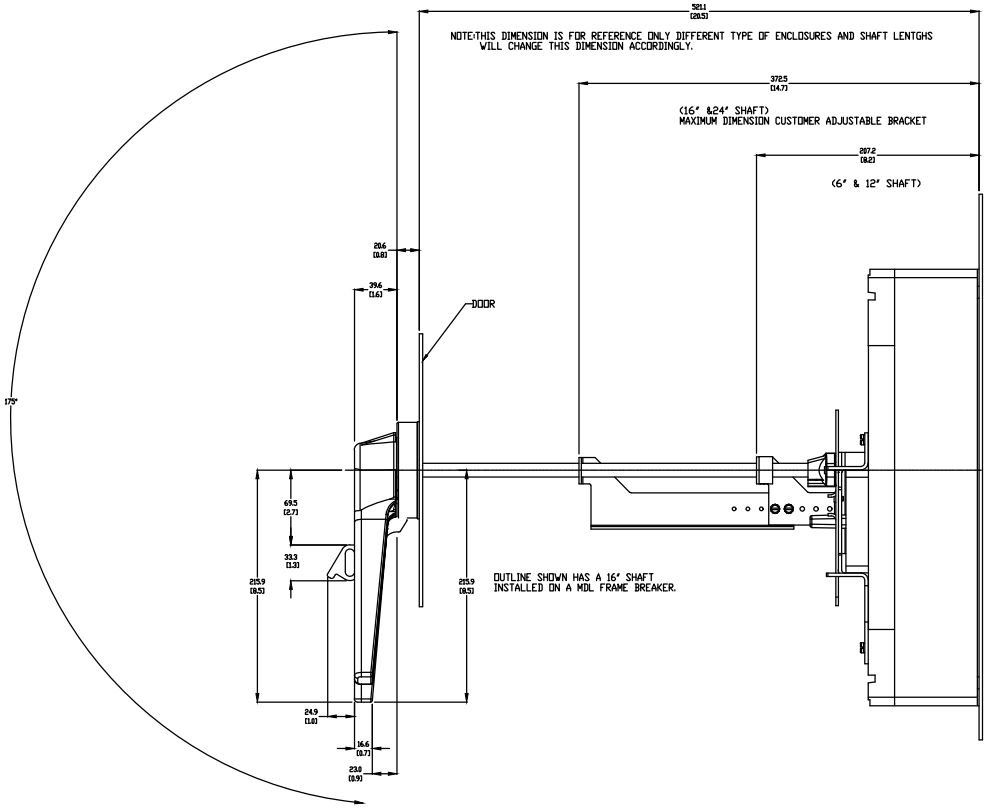




UBW

## Dimensions Frame 800 - Rotary Handle



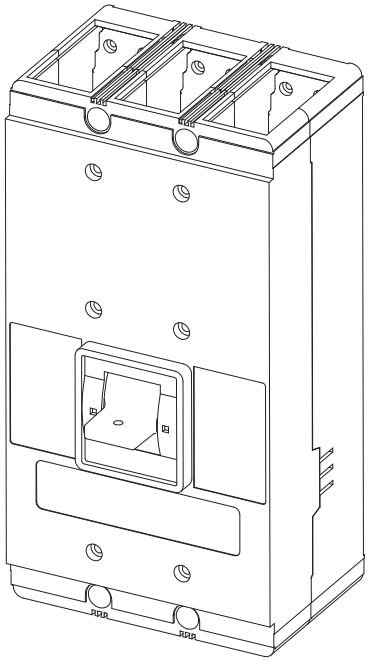



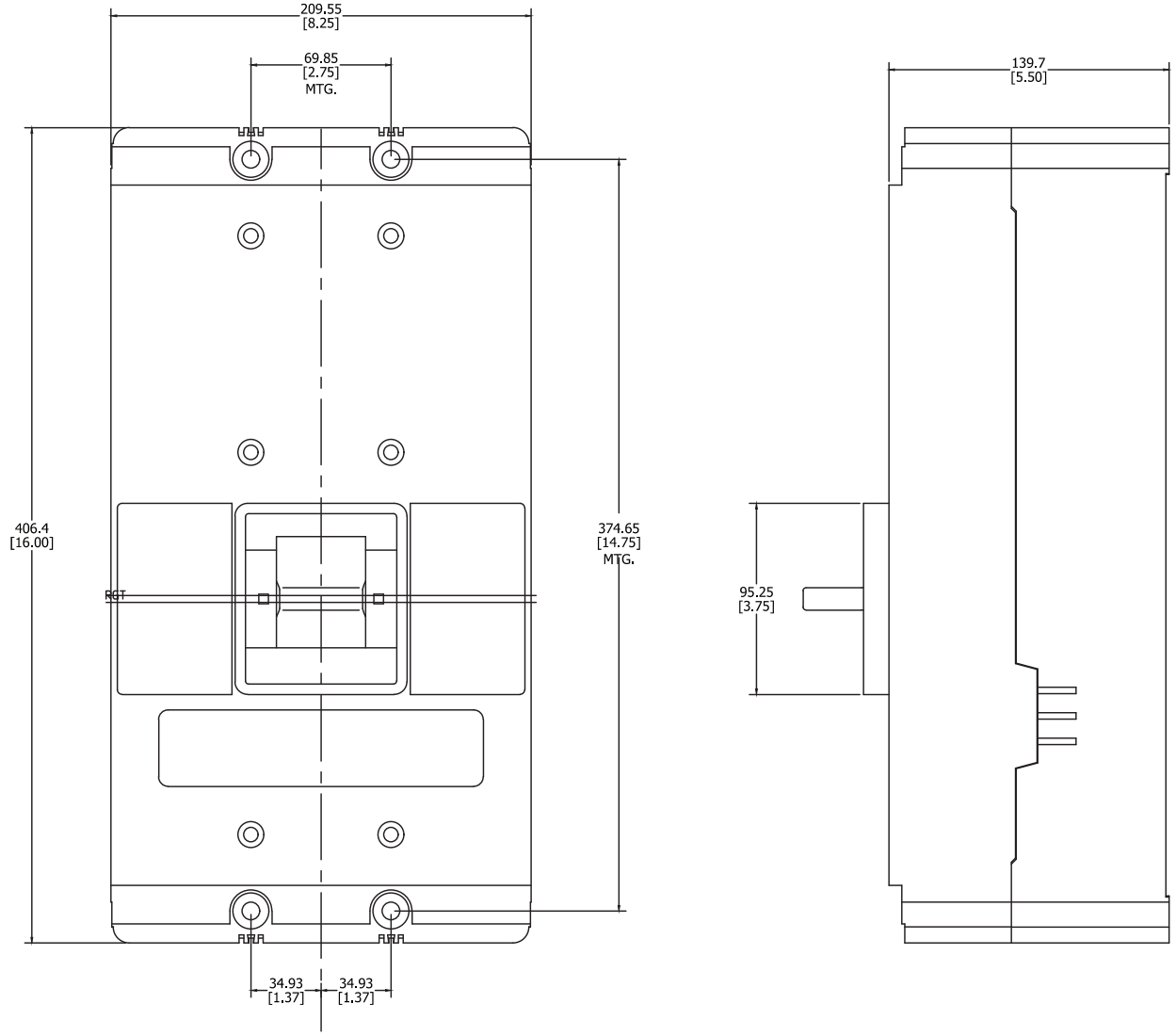

METRIC DIMENSIONS SHOWN IN BRAKETS [MM].



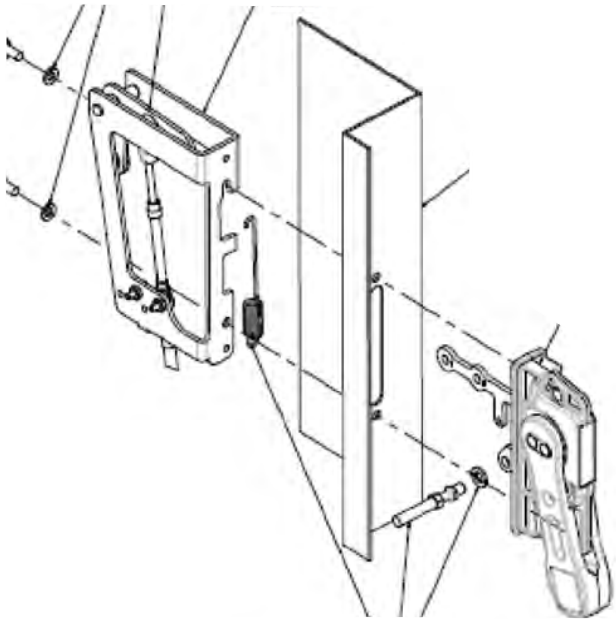
Data is subject to change without notice.

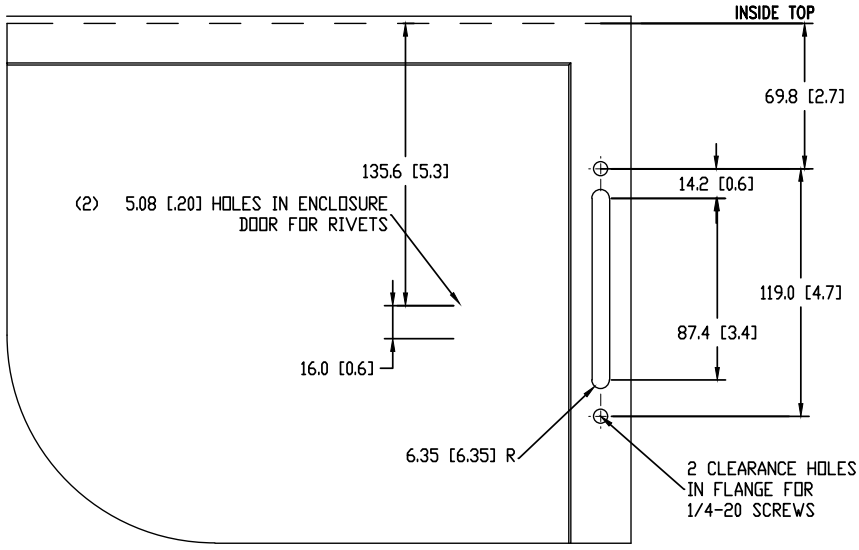
## Dimensions Frame 1200





## Dimensions Frame 1200 - Flange Handle



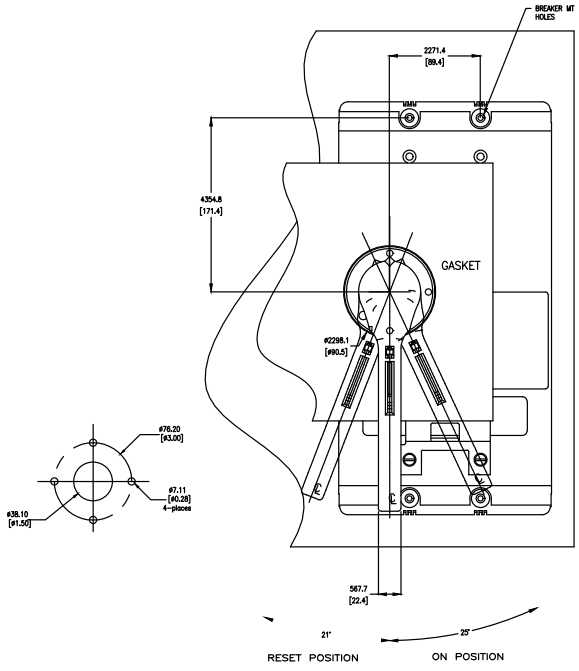


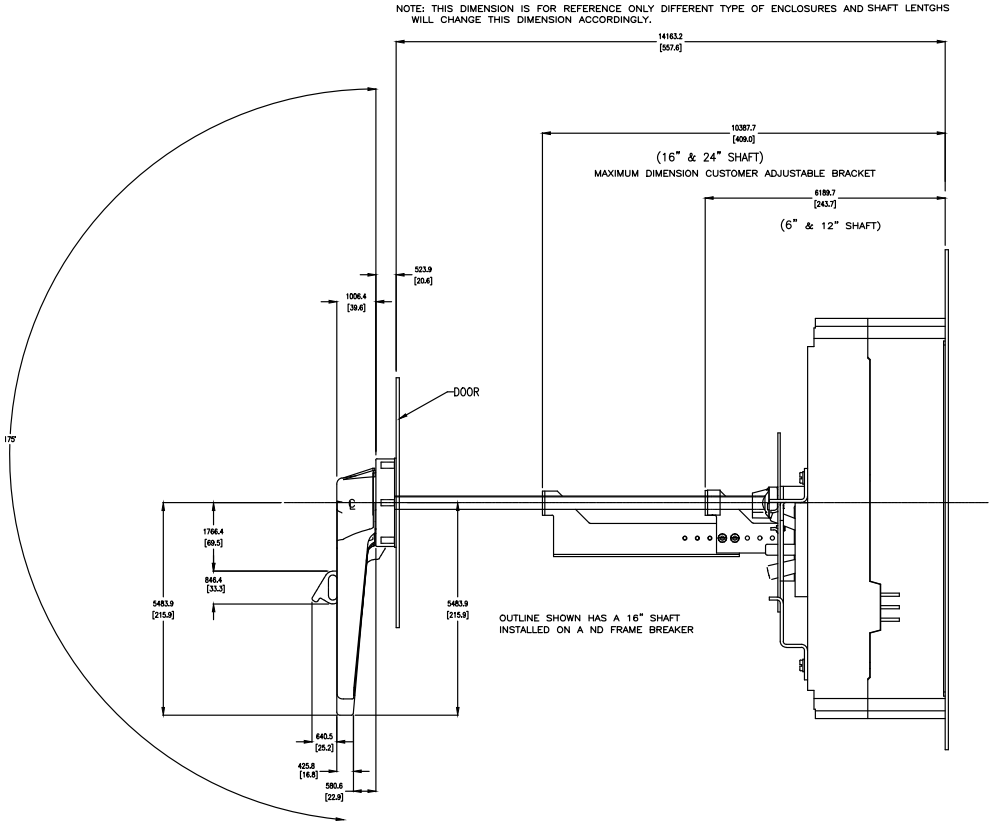





Data is subject to change without notice.

## Dimensions Frame 1200 - Rotary Handle

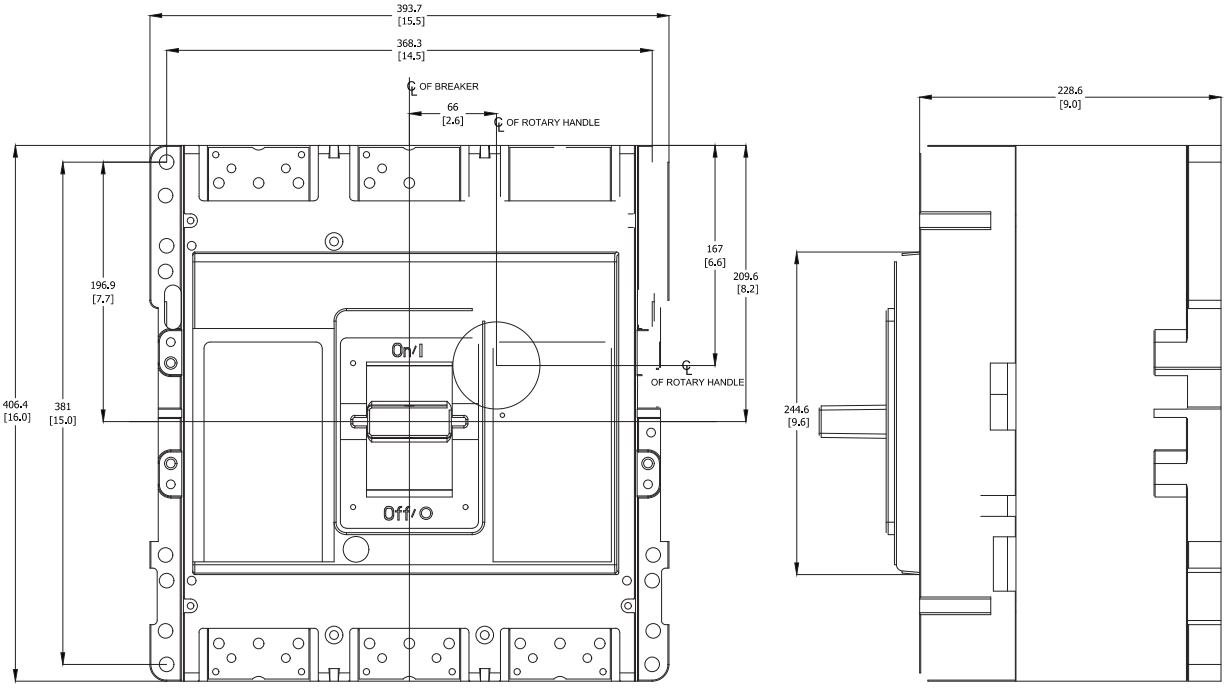



INCHES DIMENSIONS SHOWN IN BRAKETS

UBW

## Dimensions Frame 2500

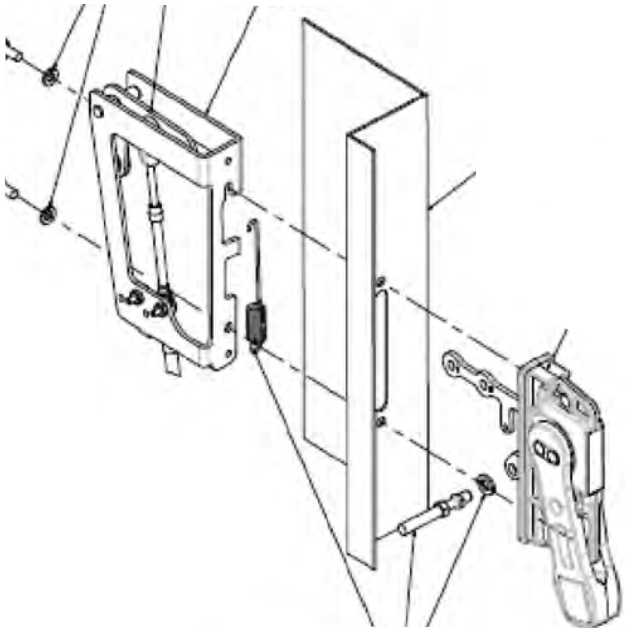


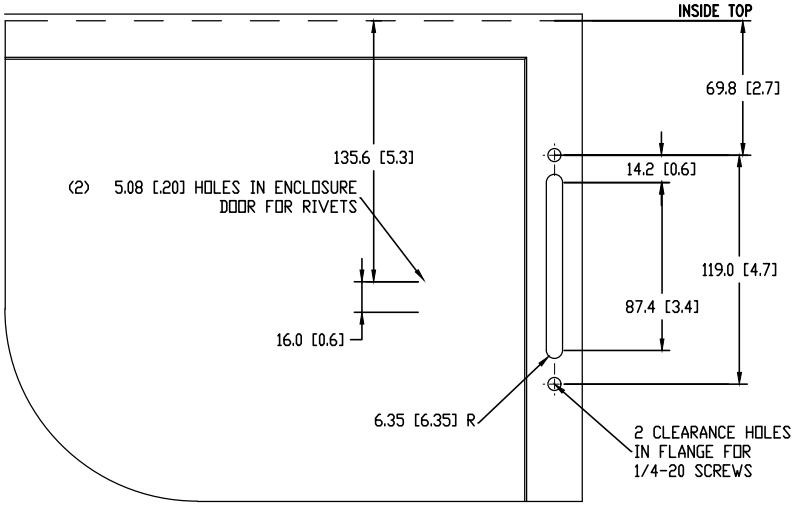





Data is subject to change without notice.

## Dimensions Frame 2500 - Flange Handle





# Circuit Protection

UBW

## Internal Locations for Breaker Options

| Frame 225 | | | |
|---|---|---|---|
| | Left | Center | Right |
| Auxiliary Alarm | ■ | | ■ |
| Alarm | □ | | □ |
| Auxiliary/Alarm | □ | | □ |
| Shunt Trip | ■ | | ■ |
| Undervoltage Release | ■ | | ■ |

■ Applicable in indicated pole position

□ May be mounted lefrt or right (not both)

| Frame 250 | | | |
|---|---|---|---|
| | Left | Center | Right |
| Auxiliary Alarm | ■ | | ■ |
| Alarm | □ | | □ |
| Auxiliary/Alarm | □ | | □ |
| Shunt Trip | ■ | | ■ |
| Undervoltage Release | ■ | | ■ |

■ Applicable in indicated pole position

□ May be mounted lefrt or right (not both)

| Frame 400 | | | |
|---|---|---|---|
| | Left | Center | Right |
| Auxiliary Alarm | ■ | | ■ |
| Alarm | □ | | □ |
| Auxiliary/Alarm | □ | | □ |
| Shunt Trip | ■ | | ■ |
| Undervoltage Release | ■ | | ■ |

■ Applicable in indicated pole position

□ May be mounted lefrt or right (not both)

| Frame 600 | | | |
|---|---|---|---|
| | Left | Center | Right |
| Auxiliary Alarm | ■ | | ■ |
| Alarm | ■ | | ■ |
| Auxiliary/Alarm | ■ | | ■ |
| Shunt Trip | ■ | | ■ |
| Undervoltage Release | ■ | | ■ |

■ Applicable in indicated pole position

□ May be mounted lefrt or right (not both)

| Frame 600 | | | |
|---|---|---|---|
| | Left | Center | Right |
| Auxiliary Alarm | ■ | | ■ |
| Alarm | ■ | | ■ |
| Auxiliary/Alarm | ■ | | ■ |
| Shunt Trip | ■ | | ■ |
| Undervoltage Release | ■ | | ■ |

■ Applicable in indicated pole position

□ May be mounted lefrt or right (not both)

| Frame 1200 | | | |
|---|---|---|---|
| | Left | Center | Right |
| Auxiliary Alarm | ■ | | ■ |
| Alarm | ■ | | ■ |
| Auxiliary/Alarm | ■ | | ■ |
| Shunt Trip | ■ | | |
| Undervoltage Release | ■ | | |

■ Applicable in indicated pole position

□ May be mounted lefrt or right (not both)

| Frame 2500 | | | |
|---|---|---|---|
| | Left | Center | Right |
| Auxiliary Alarm | | | ■ |
| Alarm | | | ■ |
| Auxiliary/Alarm | N/A | N/A | N/A |
| Shunt Trip | | | ■ |
| Undervoltage Release | | | ■ |

■ Applicable in indicated pole position

□ May be mounted lefrt or right (not both)



Data is subject to change without notice.

# UMBW-UL489 and UL1077 Listed

Introducing the New WEG UMBW Series Thermal-Magnetic Miniature Circuit Breakers. This new offering includes both UL489 and UL1077 approvals to provide a solution for circuit & equipment protection in Industrial Electrical equipment. The UMBW has a range from 1 to 63Amps, available in 1,2, 3 poles, and B, C, D trip curves.



## Standard Features:

- AC & DC voltages available in one Series
- UL489 Branch Circuit protective device
- UL1077 Equipment protection
- 17.5mm width per pole
- Visual status indication
- Positive trip-free snap action mechanism to ensure reliable switching
- Cuttable Bus Bar connecting system

UL 489 UL File No. E466810
UL 1077 UL File No. E466808

## UMBW Catalog Number Sequence

| UMBW | -1 | B | 1 | -1 |
|---|---|---|---|---|

**UL Approval**
-1= UL1077
-4= UL489

**Number of Poles**
1,2,3

**Trip Curve**
B= 4xIn (+/-20% ) Magnetic Trip Current
C= 8xIn (+/-20% ) Magnetic Trip Current
D= 12xIn (+/-20% ) Magnetic Trip Current

**Current Rating**
UL1077-1 to 63
UL489-1 to 63

*Table intended as reference only and not to create part numbers.*



# Circuit Protection

## UMBW - **UL1077**

| # Poles | Ampacity | Catalog Number | | | Max Voltage | List Price | Multiplier |
|---|---|---|---|---|---|---|---|
| | | B CURVE | C CURVE | D CURVE | | | |
| **1 POLE** | 1 | UMBW-1B1-1 | UMBW-1C1-1 | UMBW-1D1-1 | | | |
| | 1 | UMBW-1B1-1.2 | UMBW-1C1-1.2 | UMBW-1D1-1.2 | | | |
| | 1.5 | UMBW-1B1-1.5 | UMBW-1C1-1.5 | UMBW-1D1-1.5 | | | |
| | 1.6 | UMBW-1B1-1.6 | UMBW-1C1-1.6 | UMBW-1D1-1.6 | | | |
| | 2 | UMBW-1B1-2 | UMBW-1C1-2 | UMBW-1D1-2 | | | |
| | 3 | UMBW-1B1-3 | UMBW-1C1-3 | UMBW-1D1-3 | | | |
| | 4 | UMBW-1B1-4 | UMBW-1C1-4 | UMBW-1D1-4 | | | |
| | 5 | UMBW-1B1-5 | UMBW-1C1-5 | UMBW-1D1-5 | | | |
|  | 6 | UMBW-1B1-6 | UMBW-1C1-6 | UMBW-1D1-6 | | | |
| | 7 | UMBW-1B1-7 | UMBW-1C1-7 | UMBW-1D1-7 | | | |
| | 8 | UMBW-1B1-8 | UMBW-1C1-8 | UMBW-1D1-8 | | | |
| | 10 | UMBW-1B1-10 | UMBW-1C1-10 | UMBW-1D1-10 | | | |
| | 12 | UMBW-1B1-12 | UMBW-1C1-12 | UMBW-1D1-12 | 277 VAC | **$25** | Z12 |
| | 13 | UMBW-1B1-13 | UMBW-1C1-13 | UMBW-1D1-13 | | | |
| | 15 | UMBW-1B1-15 | UMBW-1C1-15 | UMBW-1D1-15 | | | |
| | 16 | UMBW-1B1-16 | UMBW-1C1-16 | UMBW-1D1-16 | | | |
| | 20 | UMBW-1B1-20 | UMBW-1C1-20 | UMBW-1D1-20 | | | |
| | 25 | UMBW-1B1-25 | UMBW-1C1-25 | UMBW-1D1-25 | | | |
| | 30 | UMBW-1B1-30 | UMBW-1C1-30 | UMBW-1D1-30 | | | |
| | 32 | UMBW-1B1-32 | UMBW-1C1-32 | UMBW-1D1-32 | | | |
| | 35 | UMBW-1B1-35 | UMBW-1C1-35 | UMBW-1D1-35 | | | |
| | 40 | UMBW-1B1-40 | UMBW-1C1-40 | UMBW-1D1-40 | | | |
| | 50 | UMBW-1B1-50 | UMBW-1C1-50 | UMBW-1D1-50 | | | |
| | 60 | UMBW-1B1-60 | UMBW-1C1-60 | UMBW-1D1-60 | | | |
| | 63 | UMBW-1B1-63 | UMBW-1C1-63 | UMBW-1D1-63 | | | |
| **2 POLE** | 1 | UMBW-1B2-1 | UMBW-1C2-1 | UMBW-1D2-1 | | | |
| | 1.2 | UMBW1B2-1.2 | UMBW-1C2-1.2 | UMBW-1D2-1.2 | | | |
| | 1.5 | UMBW-1B2-1.5 | UMBW-1C2-1.5 | UMBW-1D2-1.5 | | | |
| | 1.6 | UMBW-1B2-1.6 | UMBW-1C2-1.6 | UMBW-1D2-1.6 | | | |
| | 2 | UMBW-1B2-2 | UMBW-1C2-2 | UMBW-1D2-2 | | | |
| | 3 | UMBW-1B2-3 | UMBW-1C2-3 | UMBW-1D2-3 | | | |
| | 4 | UMBW-1B2-4 | UMBW-1C2-4 | UMBW-1D2-4 | | | |
| | 5 | UMBW-1B2-5 | UMBW-1C2-5 | UMBW-1D2-5 | | | |
|  | 6 | UMBW-1B2-6 | UMBW-1C2-6 | UMBW-1D2-6 | | | |
| | 7 | UMBW-1B2-7 | UMBW-1C2-7 | UMBW-1D2-7 | | | |
| | 8 | UMBW-1B2-8 | UMBW-1C2-8 | UMBW-1D2-8 | | | |
| | 10 | UMBW-1B2-10 | UMBW-1C2-10 | UMBW-1D2-10 | | | |
| | 12 | UMBW-1B2-12 | UMBW-1C2-12 | UMBW-1D2-12 | 277/480 VAC | **$48** | Z12 |
| | 13 | UMBW-1B2-13 | UMBW-1C2-13 | UMBW-1D2-13 | | | |
| | 15 | UMBW-1B2-15 | UMBW-1C2-15 | UMBW-1D2-15 | | | |
| | 16 | UMBW-1B2-16 | UMBW-1C2-16 | UMBW-1D2-16 | | | |
| | 20 | UMBW-1B2-20 | UMBW-1C2-20 | UMBW-1D2-20 | | | |
| | 25 | UMBW-1B2-25 | UMBW-1C2-25 | UMBW-1D2-25 | | | |
| | 30 | UMBW-1B2-30 | UMBW-1C2-30 | UMBW-1D2-30 | | | |
| | 32 | UMBW-1B2-32 | UMBW-1C2-32 | UMBW-1D2-32 | | | |
| | 35 | UMBW-1B2-35 | UMBW-1C2-35 | UMBW-1D2-35 | | | |
| | 40 | UMBW-1B2-40 | UMBW-1C2-40 | UMBW-1D2-40 | | | |
| | 50 | UMBW-1B2-50 | UMBW-1C2-50 | UMBW-1D2-50 | | | |
| | 60 | UMBW-1B2-60 | UMBW-1C2-60 | UMBW-1D2-60 | | | |
| | 63 | UMBW-1B2-63 | UMBW-1C2-63 | UMBW-1D2-63 | | | |



Data is subject to change without notice.

## UL1077 - UMBW

| # Poles | Ampacity | Catalog Number | | | Max Voltage | List Price | Multiplier |
|---|---|---|---|---|---|---|---|
| | | B CURVE | C CURVE | D CURVE | | | |
| 3 POLE | 1 | UMBW-1B3-1 | UMBW-1C3-1 | UMBW-1D3-1 | 277/480 VAC | $65 | Z12 |
| | 1.2 | UMBW-1B3-1.2 | UMBW-1C3-1.2 | UMBW-1D3-1.2 | | | |
| | 1.5 | UMBW-1B3-1.5 | UMBW-1C3-1.5 | UMBW-1D3-1.5 | | | |
| | 1.6 | UMBW-1B3-1.6 | UMBW-1C3-1.6 | UMBW-1C3-1.6 | | | |
| | 2 | UMBW-1B3-2 | UMBW-1C3-2 | UMBW-1D3-2 | | | |
| | 3 | UMBW-1B3-3 | UMBW-1C3-3 | UMBW-1D3-3 | | | |
| | 4 | UMBW-1B3-4 | UMBW-1C3-4 | UMBW-1D3-4 | | | |
| | 5 | UMBW-1B3-5 | UMBW-1C3-5 | UMBW-1D3-5 | | | |
|  | 6 | UMBW-1B3-6 | UMBW-1C3-6 | UMBW-1D3-6 | | | |
| | 7 | UMBW-1B3-7 | UMBW-1C3-7 | UMBW-1D3-7 | | | |
| | 8 | UMBW-1B3-8 | UMBW-1C3-8 | UMBW-1D3-8 | | | |
| | 10 | UMBW-1B3-10 | UMBW-1C3-10 | UMBW-1D3-10 | | | |
| | 12 | UMBW-1B3-12 | UMBW-1C3-12 | UMBW-1D3-12 | | | |
| | 13 | UMBW-1B3-13 | UMBW-1C3-13 | UMBW-1D3-13 | | | |
| | 15 | UMBW-1B3-15 | UMBW-1C3-15 | UMBW-1D3-15 | | | |
| | 16 | UMBW-1B3-16 | UMBW-1C3-16 | UMBW-1D3-16 | | | |
| | 20 | UMBW-1B3-20 | UMBW-1C3-20 | UMBW-1D3-20 | | | |
| | 25 | UMBW-1B3-25 | UMBW-1C3-25 | UMBW-1D3-25 | | | |
| | 30 | UMBW-1B3-30 | UMBW-1C3-30 | UMBW-1D3-30 | | | |
| | 32 | UMBW-1B3-32 | UMBW-1C3-32 | UMBW-1D3-32 | | | |
| | 35 | UMBW-1B3-35 | UMBW-1C3-35 | UMBW-1D3-35 | | | |
| | 40 | UMBW-1B3-40 | UMBW-1C3-40 | UMBW-1D3-40 | | | |
| | 50 | UMBW-1B3-50 | UMBW-1C3-50 | UMBW-1D3-50 | | | |
| | 60 | UMBW-1B3-60 | UMBW-1C3-60 | UMBW-1D3-60 | | | |
| | 63 | UMBW-1B3-63 | UMBW-1C3-63 | UMBW-1D3-63 | | | |

# Circuit Protection

## UMBW - **UL489**

| # Poles | Ampacity | Catalog Number | | | Max Voltage | List Price | Multiplier |
|---|---|---|---|---|---|---|---|
| | | B CURVE | C CURVE | D CURVE | | | |
| 1 POLE | 1 | UMBW-4B1-1 | UMBW-4C1-1 | UMBW-4D1-1 | 277 VAC /60 VDC | $53 | Z12 |
| | 1.2 | UMBW-4B1-1.2 | UMBW-4C1-1.2 | UMBW-4D1-1.2 | | | |
| | 1.5 | UMBW-4B1-1.5 | UMBW-4C1-1.5 | UMBW-4D1-1.5 | | | |
| | 1.6 | UMBW-4B1-1.6 | UMBW-4C1-1.6 | UMBW-4D1-1.6 | | | |
| | 2 | UMBW-4B1-2 | UMBW-4C1-2 | UMBW-4D1-2 | | | |
| | 3 | UMBW-4B1-3 | UMBW-4C1-3 | UMBW-4D1-3 | | | |
| | 4 | UMBW-4B1-4 | UMBW-4C1-4 | UMBW-4D1-4 | | | |
| | 5 | UMBW-4B1-5 | UMBW-4C1-5 | UMBW-4D1-5 | | | |
| | 6 | UMBW-4B1-6 | UMBW-4C1-6 | UMBW-4D1-6 | | | |
| | 7 | UMBW-4B1-7 | UMBW-4C1-7 | UMBW-4D1-7 | | | |
| | 8 | UMBW-4B1-8 | UMBW-4C1-8 | UMBW-4D1-8 | | | |
| | 10 | UMBW-4B1-10 | UMBW-4C1-10 | UMBW-4D1-10 | | | |
| | 12 | UMBW-4B1-12 | UMBW-4C1-12 | UMBW-4D1-12 | | | |
| | 13 | UMBW-4B1-13 | UMBW-4C1-13 | UMBW-4D1-13 | | | |
| | 15 | UMBW-4B1-15 | UMBW-4C1-15 | UMBW-4D1-15 | | | |
| | 16 | UMBW-4B1-16 | UMBW-4C1-16 | UMBW-4D1-16 | | | |
| | 20 | UMBW-4B1-20 | UMBW-4C1-20 | UMBW-4D1-20 | | | |
| | 25 | UMBW-4B1-25 | UMBW-4C1-25 | UMBW-4D1-25 | 120 VAC /60 VDC | $53 | Z12 |
| | 30 | UMBW-4B1-30 | UMBW-4C1-30 | UMBW-4D1-30 | | | |
| | 32 | UMBW-4B1-32 | UMBW-4C1-32 | UMBW-4D1-32 | | | |
| | 35 | UMBW-4B1-35 | UMBW-4C1-35 | UMBW-4D1-35 | | | |
| | 40 | UMBW-4B1-40 | UMBW-4C1-40 | UMBW-4D1-40 | | | |
| | 50 | UMBW-4B1-50 | UMBW-4C1-50 | UMBW-4D1-50 | | | |
| | 60 | UMBW-4B1-60 | UMBW-4C1-60 | UMBW-4D1-60 | | | |
| | 63 | UMBW-4B1-63 | UMBW-4C1-63 | UMBW-4D1-63 | | | |
| 2 POLE | 1 | UMBW-4B2-1 | UMBW-4C2-1 | UMBW-4D2-1 | 277/480 VAC 125 VDC | $107 | Z12 |
| | 1.2 | UMBW-4B2-1.2 | UMBW-4C2-1.2 | UMBW-4D2-1.2 | | | |
| | 1.5 | UMBW-4B2-1.5 | UMBW-4C2-1.5 | UMBW-4D2-1.5 | | | |
| | 1.6 | UMBW-4B2-1.6 | UMBW-4C2-1.6 | UMBW-4C2-1.6 | | | |
| | 2 | UMBW-4B2-2 | UMBW-4C2-2 | UMBW-4D2-2 | | | |
| | 3 | UMBW-4B2-3 | UMBW-4C2-3 | UMBW-4D2-3 | | | |
| | 4 | UMBW-4B2-4 | UMBW-4C2-4 | UMBW-4D2-4 | | | |
| | 5 | UMBW-4B2-5 | UMBW-4C2-5 | UMBW-4D2-5 | | | |
| | 6 | UMBW-4B2-6 | UMBW-4C2-6 | UMBW-4D2-6 | | | |
| | 7 | UMBW-4B2-7 | UMBW-4C2-7 | UMBW-4D2-7 | | | |
| | 8 | UMBW-4B2-8 | UMBW-4C2-8 | UMBW-4D2-8 | | | |
| | 10 | UMBW-4B2-10 | UMBW-4C2-10 | UMBW-4D2-10 | | | |
| | 12 | UMBW-4B2-12 | UMBW-4C2-12 | UMBW-4D2-12 | | | |
| | 13 | UMBW-4B2-13 | UMBW-4C2-13 | UMBW-4D2-13 | | | |
| | 15 | UMBW-4B2-15 | UMBW-4C2-15 | UMBW-4D2-15 | | | |
| | 16 | UMBW-4B2-16 | UMBW-4C2-16 | UMBW-4D2-16 | | | |
| | 20 | UMBW-4B2-20 | UMBW-4C2-20 | UMBW-4D2-20 | | | |
| | 25 | UMBW-4B2-25 | UMBW-4C2-25 | UMBW-4D2-25 | 277/480 VAC 125 VDC | $107 | Z12 |
| | 30 | UMBW-4B2-30 | UMBW-4C2-30 | UMBW-4D2-30 | | | |
| | 32 | UMBW-4B2-32 | UMBW-4C2-32 | UMBW-4D2-32 | | | |
| | 35 | UMBW-4B2-35 | UMBW-4C2-35 | UMBW-4D2-35 | | | |
| | 40 | UMBW-4B2-40 | UMBW-4C2-40 | UMBW-4D2-40 | | | |
| | 50 | UMBW-4B2-50 | UMBW-4C2-50 | UMBW-4D2-50 | | | |
| | 60 | UMBW-4B2-60 | UMBW-4C2-60 | UMBW-4D2-60 | | | |
| | 63 | UMBW-4B2-63 | UMBW-4C2-63 | UMBW-4D2-63 | | | |



Data is subject to change without notice.

## UL489 - UMBW

| # Poles | Ampacity | Catalog Number | | | Max Voltage | List Price | Multiplier |
|---|---|---|---|---|---|---|---|
| | | B CURVE | C CURVE | D CURVE | | | |
| 3 POLE | 1 | UMBW-4B3-1 | UMBW-4C3-1 | UMBW-4D3-1 | 277/480 VAC 125 VDC | $158 | Z12 |
| | 1.2 | UMBW-4B3-1.2 | UMBW-4C3-1.2 | UMBW-4D3-1.2 | | | |
| | 1.5 | UMBW-4B3-1.5 | UMBW-4C3-1.5 | UMBW-4D3-1.5 | | | |
| | 1.6 | UMBW-4B3-1.6 | UMBW-4C3-1.6 | UMBW-4D3-1.6 | | | |
| | 2 | UMBW-4B3-2 | UMBW-4C3-2 | UMBW-4D3-2 | | | |
| | 3 | UMBW-4B3-3 | UMBW-4C3-3 | UMBW-4D3-3 | | | |
| | 4 | UMBW-4B3-4 | UMBW-4C3-4 | UMBW-4D3-4 | | | |
| | 5 | UMBW-4B3-5 | UMBW-4C3-5 | UMBW-4D3-5 | | | |
| | 6 | UMBW-4B3-6 | UMBW-4C3-6 | UMBW-4D3-6 | | | |
| | 7 | UMBW-4B3-7 | UMBW-4C3-7 | UMBW-4D3-7 | | | |
| | 8 | UMBW-4B3-8 | UMBW-4C3-8 | UMBW-4D3-8 | | | |
| | 10 | UMBW-4B3-10 | UMBW-4C3-10 | UMBW-4D3-10 | | | |
| | 12 | UMBW-4B3-12 | UMBW-4C3-12 | UMBW-4D3-12 | | | |
| | 13 | UMBW-4B3-13 | UMBW-4C3-13 | UMBW-4D3-13 | | | |
| | 15 | UMBW-4B3-15 | UMBW-4C3-15 | UMBW-4D3-15 | | | |
| | 16 | UMBW-4B3-16 | UMBW-4C3-16 | UMBW-4D3-16 | | | |
| | 20 | UMBW-4B3-20 | UMBW-4C3-20 | UMBW-4D3-20 | | | |
| | 25 | UMBW-4B3-25 | UMBW-4C3-25 | UMBW-4D3-25 | 240 VAC / 125 VDC | $158 | Z12 |
| | 30 | UMBW-4B3-30 | UMBW-4C3-30 | UMBW-4D3-30 | | | |
| | 32 | UMBW-4B3-32 | UMBW-4C3-32 | UMBW-4D3-32 | | | |
| | 35 | UMBW-4B3-35 | UMBW-4C3-35 | UMBW-4D3-35 | | | |
| | 40 | UMBW-4B3-40 | UMBW-4C3-40 | UMBW-4D3-40 | | | |
| | 50 | UMBW-4B3-50 | UMBW-4C3-50 | UMBW-4D3-50 | | | |
| | 60 | UMBW-4B3-60 | UMBW-4C3-60 | UMBW-4D3-60 | | | |
| | 63 | UMBW-4B3-63 | UMBW-4C3-63 | UMBW-4D3-63 | | | |



# Circuit Protection

UMBW

## Miniature Circuit Breakers

## Accessories

| | |
|---|---|
| Auxiliary Contact | 1NO/1NC |
| Shunt Trip | 120,240,277AC…12,24,48,125DC |
| Bell Alarm | 1NO/1NC |
| Bus Bar | 1,2,3 Phase…1,2,3 Phase with Auxiliary |

### Auxiliary Contacts

Signaling contacts that open and close with the breaker. Provide remote status indicating ON and OFF only.

| For Use With | Catalog Number | Operating Voltage | Operating Amperage | Contacts | Mounting/Dims (mm) | Mechanical Operations | Torque | Mass | QTY | List Price | Multiplier |
|---|---|---|---|---|---|---|---|---|---|---|---|
| UMBW-1<br>UMBW-4 | **UMBW-AUX** | 12-240VAC | 6A | 1NO/1NC | Field Mountable..Left Side/ 9mm | 20,000 | 1 Nm .74 Ft. lbs. | 29g | 1 | **$55** | Z12 |
| | | 277VAC | 3A | | | | | | | | |
| | | 12-24VDC | 6A | | | | | | | | |
| | | 48VDC | 3A | | | | | | | | |
| | | 110-220VDC | 1.5A | | | | | | | | |

### Bell Alarm

Provides provisions for visual and alarm indication when the breaker in the Tripped status, due to Short Circuit, Overload or Undervoltage. Breaker must be re-set to open contacts.

| For Use With | Catalog Number | Operating Voltage | Operating Amperage | Contacts | Mounting/Dims (mm) | Mechanical Operations | Torque | Mass | QTY | List Price | Multiplier |
|---|---|---|---|---|---|---|---|---|---|---|---|
| UMBW-1<br>UMBW-4 | **UMBW-BAC** | 12-240VAC | 6A | 1NO/1NC | Field Mountable..Left Side/ 9mm | 10,000 | 1 Nm .74 Ft. lbs. | 29g | 1 | **$68** | Z12 |
| | | 277VAC | 3A | | | | | | | | |
| | | 12-24VDC | 6A | | | | | | | | |
| | | 48VDC | 3A | | | | | | | | |
| | | 110-220VDC | 1.5A | | | | | | | | |

### Shunt Trip

Provides ability to trip breaker from remote location when power is applied.

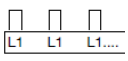
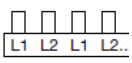
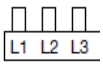
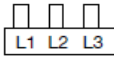
| For Use With | Catalog Number | Voltage/Min Trip Voltage | Amperage/ Power Consuption | Contacts | Mounting/Dims (mm) | Mechanical Operations | Torque | Mass | QTY | List Price | Multiplier |
|---|---|---|---|---|---|---|---|---|---|---|---|
| UMBW-1<br>UMBW-4 | **UMBW-ST12DC** | 12 VDC/ 8VDC | 6A/ 200W | 1NO/1NC | Field Mountable..Left Side/18mm | 20,000 | 1Nm, .74ft lbs | 60g | 1 | **$95** | Z12 |
| | **UMBW-ST24DC** | 24 VDC/ 16VDC | 6A/ 200W | | | | | | | **$95** | |
| | **UMBW-ST48DC** | 48 VDC/ 24VDC | 2A/ 200W | | | | | | | **$95** | |
| | **UMBW-ST125DC** | 125 VDC/ 80VDC | 1.5A/ 200W | | | | | | | **$95** | |
| | **UMBW-ST120AC** | 120 VAC/ 80VAC | 6A/ 200W | | | | | | | **$95** | |
| | **UMBW-ST240AC** | 240 VAC/ 160VAC | 6A/ 200W | | | | | | | **$95** | |
| | **UMBW-ST277AC** | 277 VAC/ 160VAC | 3A/ 200W | | | | | | | **$95** | |



Data is subject to change without notice.

# Minature Circuit Breakers

## Bus Bar Accessories

| For Use With | Catalog Number | AMP Rating End/ Center | Number of Poles | Max Voltage | Length (mm) | QTY | List Price | End Cap Catalog Number (Sold as Seprate Item) | QTY | List Price | Multiplier |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **1 Pole** | | | | | | | | | | | |
| UMBW-1 | **UMBW-BB-1-1**   | 80A/160A | 57 | 600 AC /1000 DC | 1009 | 1 | $125 | **UMBW-BB-1-1P-END CAP** | 10 (Sets of 2pcs) | **$30** | Z12 |
| UMBW-4 | **UMBW-BB-4-1** | 80A/160A | 57 | 1000 AC/DC | 1031 | 1 | $500 | **UMBW-BB-4-END CAP** | 10 | **$35** | |
| **1 Pole with Auxiliary** | | | | | | | | | | | |
| UMBW-1 | **UMBW-BB-1-1A**   | 80A/160A | 37 | 600 AC /1000 DC | 985 | 1 | $135 | **UMBW-BB-1-1P-END CAP** | 10 (Sets of 2pcs) | **$30** | Z12 |
| UMBW-4 | **UMBW-BB-4-1A** | 80A/160A | 37 | 1000 AC/DC | 972 | 1 | $570 | **UMBW-BB-4-END CAP** | 10 | **$35** | |
| **2 POLE** | | | | | | | | | | | |
| UMBW-1 | **UMBW-BB-1-2**   | 80A/160A | 56 | 600 AC/DC | 991 | 1 | $285 | **UMBW-BB-1-2/3P-E CAP** | 10 (Sets of 2pcs) | **$30** | Z12 |
| UMBW-4 | **UMBW-BB-4-2** | 80A/160A | 56 | 600 AC/DC | 979 | 1 | $575 | **UMBW-BB-4-END CAP** | 10 | **$35** | |
| **2 Pole with Auxiliary** | | | | | | | | | | | |
| UMBW-1 | **UMBW-BB-1-2A**   | 80A/160A | 46 | 600 AC/DC | 1009 | 1 | $295 | **UMBW-BB-1-2/3P-E CAP** | 10 (Sets of 2pcs) | **$30** | Z12 |
| UMBW-4 | **UMBW-BB-4-2A** | 80A/160A | 46 | 600 AC/DC | 981 | 1 | $645 | **UMBW-BB-4-END CAP** | 10 | **$35** | |
| **3 Pole** | | | | | | | | | | | |
| UMBW-1 | **UMBW-BB-1-3**   | 80A/160A | 57 | 600 AC/DC | 1009 | 1 | $340 | **UMBW-BB-1-2/3P-E CAP** | 10 (Sets of 2pcs) | **$30** | Z12 |
| UMBW-4 | **UMBW-BB-4-3** | 80A/160A | 57 | 600 AC/DC | 997 | 1 | $650 | **UMBW-BB-4-END CAP** | 10 | **$35** | |
| **3 Pole with Auxiliary** | | | | | | | | | | | |
| UMBW-1 | **UMBW-BB-1-3A**   | 80A/160A | 48 | 600 AC/DC | 982 | 1 | $345 | **UMBW-BB-1-2/3P-E CAP** | 10 (Sets of 2pcs) | **$30** | Z12 |
| UMBW-4 | **UMBW-BB-4-3A** | 80A/160A | | 600 AC/DC | 936 | 1 | $720 | **UMBW-BB-4-END CAP** | 10 | **$35** | |

*Note: Bus Bars May Be Center Fed to Increase Ampacity to Double Rated Value*

# Circuit Protection

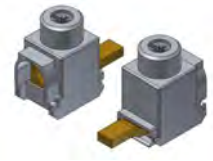
UMBW

## Miniature Circuit Breakers

### Bus Bar Accessories

| For Use With | Catalog Number | AMP Rating | Number of Poles | Max Voltage | Conductor Range Min/Max | Tightening Torque | QTY | List Price | Multiplier |
|---|---|---|---|---|---|---|---|---|---|
| UMBW-1 | UMBW-BB-1-1P-END CAP | N/A | 1 | N/A | N/A | N/A | 10 | $30 | Z12 |
| UMBW-1 | UMBW-BB-1-2/3-E-CAP | N/A | 2 or 3 | N/A | N/A | N/A | 10 (Sets of 2pcs) | $35 | Z12 |
| UMBW-1 | UMBW-BB-1-1P-TERM | 115A | 1 | 1000 AC/DC | 10AWG/1AWG | 50 lb.in | 10 | $320 | Z12 |
| UMBW-1 | UMBW-BB-1-2/3P-TERM | 115A | 2 or 3 | 1000 AC/DC | 10AWG/1AWG | 50 lb.in | 10 | $330 | Z12 |
| UMBW-1 | UMBW-BB-1-BUS CAP-Y | N/A | 5 | N/A | N/A | N/A | 10 ( Sets of 5pcs) | $115 | Z12 |

| For Use With | Catalog Number | AMP Rating | Number of Poles | Max Voltage | Conductor Range Min/Max | Tightening Torque | QTY | List Price | Multiplier |
|---|---|---|---|---|---|---|---|---|---|
| UMBW-4 | UMBW-BB-4-END CAP | N/A | | N/A | N/A | N/A | 10 | $40 | Z12 |
| UMBW-4 | UMBW-BB-4-1P-TERM | 115A | 1 | 1000 AC/DC | 14AWG/2AWG | 50 lb.in | 10 | $350 | Z12 |
| UMBW-4 | UMBW-BB-4-BUS CAP-Y | N/A | 3 | N/A | N/A | N/A | 10 (Sets of 3pcs) | $45 | Z12 |



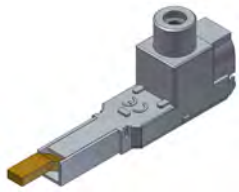
UMBW-BB-1-1-TERM



UMBW-BB-1-2/3P-TERM



UMBW-BB-1-BUS CAP-Y



UMBW-BB-4-1P-TERM



UMBW-BB-4-BUS CAP-Y



Data is subject to change without notice.

# Breaker Technical Data

## Electrical Ratings

| Approval | Poles | Voltage | Ampacity | Interrupting |
|---|---|---|---|---|
| UL1077 E468808 | 1 Pole | 240VAC | 1A - 63A | 7.5kA |
| | 1 Pole | 277VAC | 1A - 63A | 5kA |
| | 2,3 Pole | 240VAC | 1A - 63A | 5kA |
| | 2, 3 Pole | 277/480Y VAC | 1A - 63A | 5kA |
| | 1 Pole | 60VDC - pending | 1A - 63A | 7.5kA |
| | 2 Pole | 125VDC - pending | 1A - 63A | 7.5kA |
| UL489 E468810 | 1 Pole | 120VAC | 1A - 63A | 10kA |
| | 2, 3 Pole | 240VAC | 1A - 63A | 10kA |
| | 1 Pole | 277VAC | 1A - 20A | 10kA |
| | 2, 3 Pole | 277/480Y VAC | 1A - 20A | 10kA |
| | 1 Pole | 60VDC | 1A - 63A | 10kA |
| | 2 Pole | 125VDC | 1A - 63A | 10kA |
| IEC 60947-2 | 1 Pole | 230VAC | 1A - 63A | 10kA |
| | 2, 3 Pole | 400VAC | 1A - 63A | 10kA |

## Mechanical Ratings

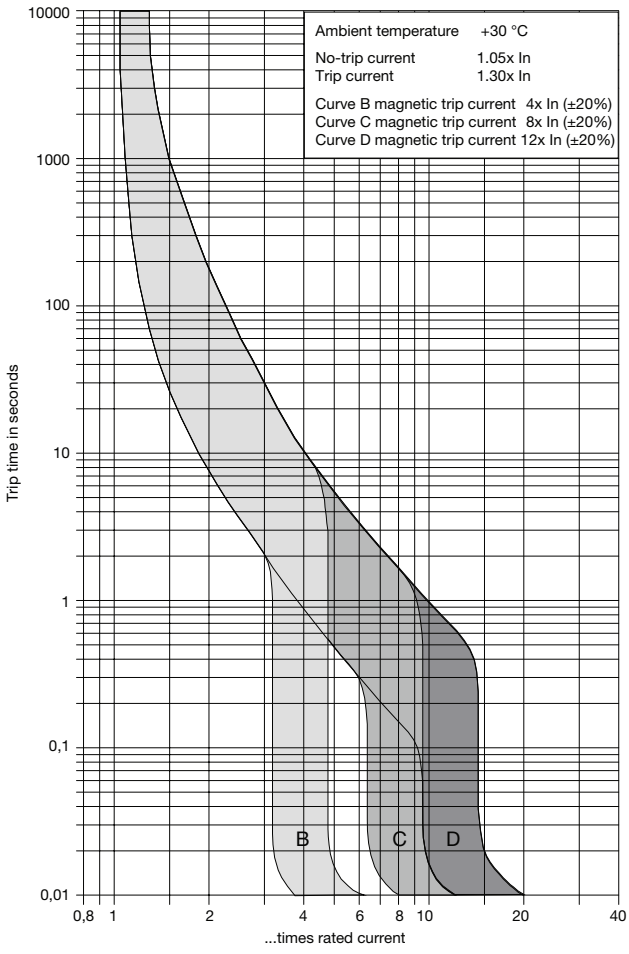
| | |
|---|---|
| Tripping Curves | B,C,D |
| Number of Poles | 1,2,3 |
| Mounting Position | Vertical, Horizontal |
| Torque | 2 Nm, 1.48 ft lbs Maximum |
| Cable Cross Section | 35mm sq, 2 Awg Maximum |
| Ambient Temperature | -35 deg C to +70 deg C |
| Mass | UL1077 - 116 grams per pole |
| | UL489 - 131 grams per pole |
| Protection Class | IP20 |
| Mechanical Operations | 10,000 |
| Vibration (sinusoidal) | +/- .38mm (10-57HZ), 5g |
| Test to IEC 60060-2-6 | (57-500HZ) |
| Test to Fc | 10 frequency cycles per axis |
| Shock Test to IEC60068-2-27, Test Ea | 30g (11ms) |
| Corrosion Test to IEC60068-2-11 Test Ka | 96hrs in 5% salt mist |
| Humidity Test to IEC60068-2-78 Test Cab | 48hrs at 95% RH, Temp +40 deg C |
| Terminals | Screw with Bus Bar Connections |

# Circuit Protection

UMBW

## Operating Ampacity Based on Ambient Temperature (Degree C)

| Amps | -35 | -30 | -25 | -20 | -15 | -10 | -5 | 0 | +5 | +10 | +15 | +20 | +25 | +30 | +35 | +40 | +45 | +50 | +55 | +60 | +65 | +70 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.3 | 1.3 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.0 | 1.0 | 1.0 | 0.9 | 0.9 | 0.9 | 0.9 | 0.8 | 0.8 | 0.8 |
| 2 | 2.5 | 2.5 | 2.5 | 2.4 | 2.4 | 2.3 | 2.3 | 2.3 | 2.2 | 2.2 | 2.1 | 2.1 | 2.0 | 2.0 | 1.9 | 1.9 | 1.8 | 1.8 | 1.7 | 1.7 | 1.6 | 1.5 |
| 4 | 5.1 | 5.0 | 4.9 | 4.8 | 4.8 | 4.7 | 4.6 | 4.5 | 4.4 | 4.3 | 4.2 | 4.2 | 4.1 | 4.0 | 3.9 | 3.8 | 3.6 | 3.6 | 3.4 | 3.3 | 3.2 | 3.1 |
| 6 | 7.7 | 7.6 | 7.5 | 7.3 | 7.2 | 7.1 | 7.0 | 6.8 | 6.7 | 6.6 | 6.4 | 6.3 | 6.1 | 6.0 | 5.8 | 5.7 | 5.5 | 5.4 | 5.2 | 5.0 | 4.8 | 4.6 |
| 10 | 13.9 | 13.6 | 13.4 | 13.1 | 12.8 | 12.5 | 12.2 | 11.9 | 11.6 | 11.3 | 11.0 | 10.7 | 10.3 | 10.0 | 9.6 | 9.2 | 8.9 | 8.5 | 8.0 | 7.6 | 7.1 | 6.6 |
| 16 | 20.8 | 20.4 | 20.1 | 19.8 | 19.4 | 19.1 | 18.7 | 18.3 | 18.0 | 17.6 | 17.2 | 16.8 | 16.4 | 16.0 | 15.6 | 15.1 | 14.7 | 14.2 | 13.7 | 13.2 | 12.7 | 12.8 |
| 20 | 25.7 | 25.3 | 24.9 | 24.5 | 24.1 | 23.6 | 23.2 | 22.8 | 22.3 | 21.9 | 21.4 | 21.0 | 20.5 | 20.0 | 19.5 | 19.0 | 18.4 | 17.9 | 17.3 | 16.7 | 16.1 | 15.5 |
| 25 | 32.2 | 31.7 | 31.2 | 30.7 | 30.2 | 29.7 | 29.1 | 28.6 | 28.0 | 27.4 | 26.8 | 26.2 | 25.6 | 25.0 | 24.3 | 23.7 | 23.0 | 22.3 | 21.6 | 20.8 | 20.0 | 19.2 |
| 32 | 41.0 | 40.5 | 39.8 | 39.2 | 38.5 | 37.8 | 37.2 | 36.5 | 35.8 | 35.0 | 34.3 | 33.5 | 32.8 | 32.0 | 31.2 | 30.3 | 29.5 | 28.7 | 27.7 | 26.8 | 25.8 | 24.8 |
| 40 | 51.6 | 50.9 | 50.0 | 40.2 | 48.4 | 47.5 | 46.6 | 45.7 | 44.8 | 43.9 | 43.0 | 42.0 | 41.0 | 40.0 | 38.9 | 37.9 | 36.8 | 35.6 | 34.4 | 33.2 | 32.0 | 30.6 |
| 50 | 64.9 | 64.0 | 62.9 | 61.9 | 60.8 | 59.7 | 58.5 | 57.4 | 56.2 | 55.1 | 53.8 | 52.6 | 51.3 | 50.0 | 47.8 | 46.2 | 44.8 | 43.3 | 41.8 | 40.2 | 38.6 | 35.8 |
| 63 | 83.5 | 82.1 | 60.6 | 79.2 | 77.7 | 76.2 | 74.7 | 73.1 | 71.5 | 69.9 | 68.2 | 66.5 | 64.8 | 63.0 | 60.1 | 58.2 | 56.2 | 54.2 | 52.0 | 49.8 | 47.5 | 43.1 |




Magnetic tripping currents are increased by 30 % on DC supplies.

**B CURVE - Tripping Characteristics:**
Calibrated for resistive or non/low inductive loads.
Applications: Lighting, Control Circuits

**C CURVE - Tripping Characteristics:**
Calibrated for general purpose inductive loads.
Applications: Fluorecent lighting, midrange inductive motors

**D CURVE - Tripping Characteristics:**
Calibrated for inductive loads with high inrush currents

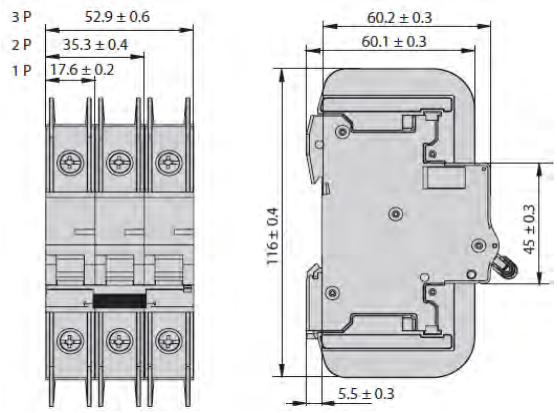
Applications: Motors, Transformers



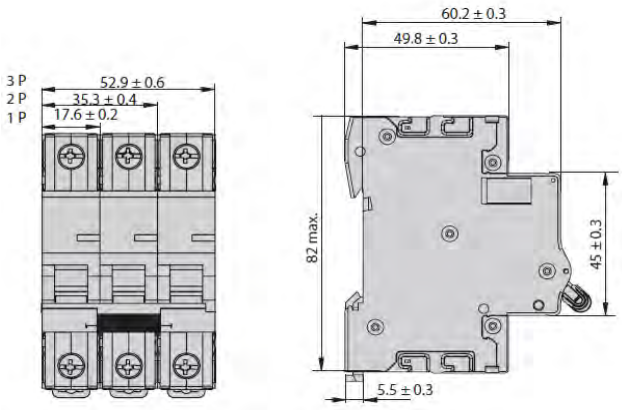
Data is subject to change without notice.

## Dimensions (mm)

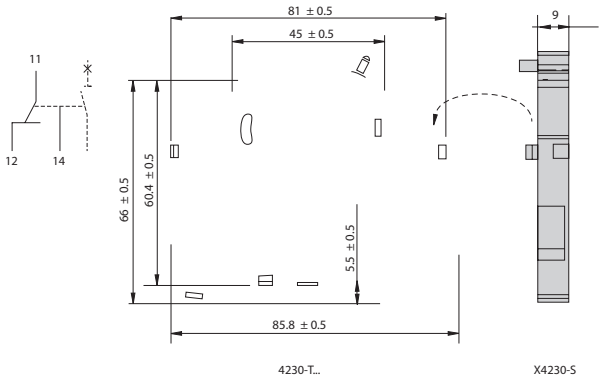
**UMBW-4 (UL489)**



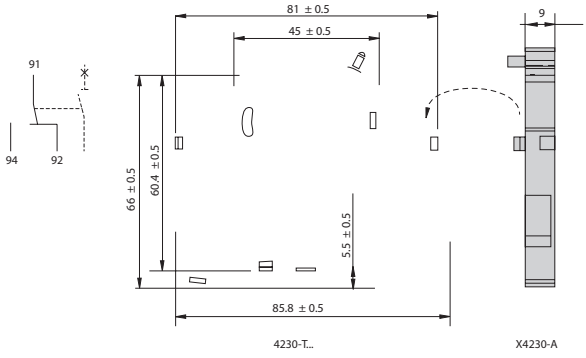

**UMBW-1 (UL1077)** **UMBW - 1 (UL1077)**



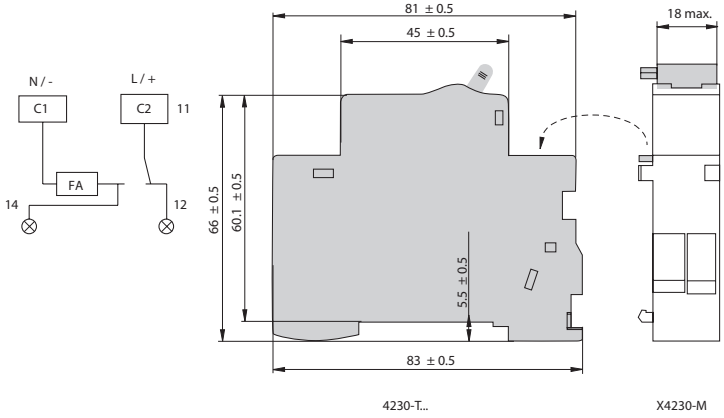

**UMBW - AUX**




**UMBW - BAC**



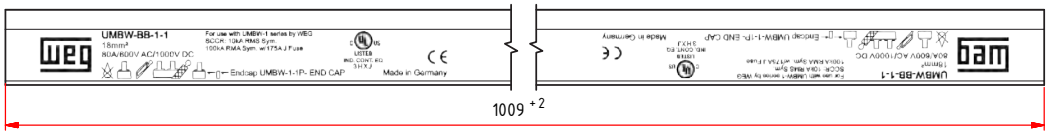

**UMBW - AUX**

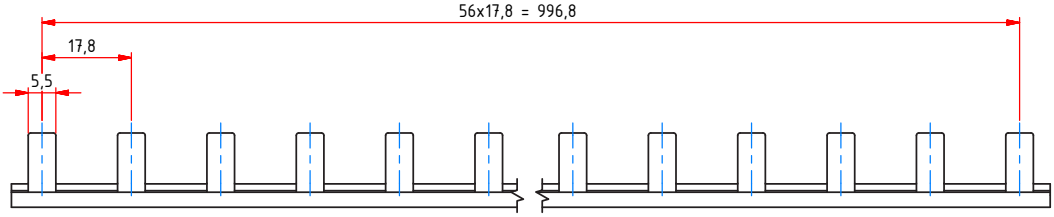


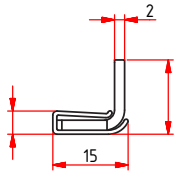
# Circuit Protection

## UMBW

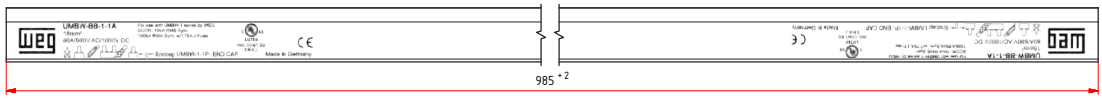
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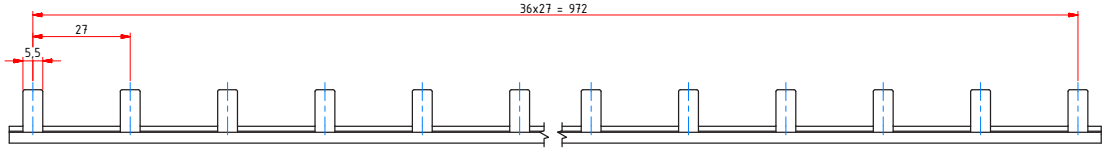


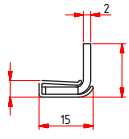




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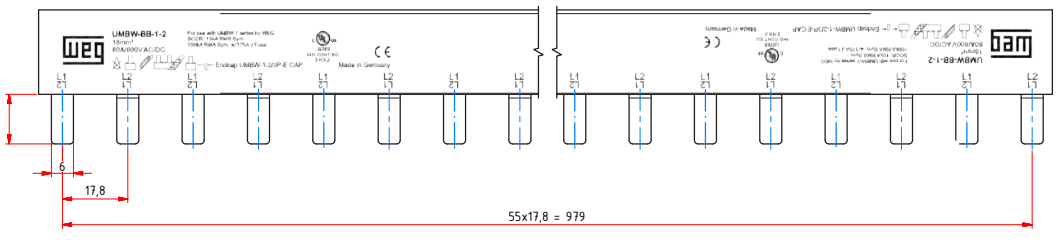


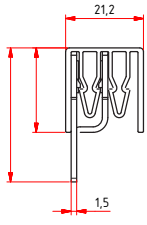



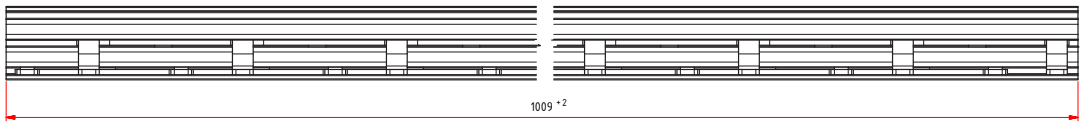

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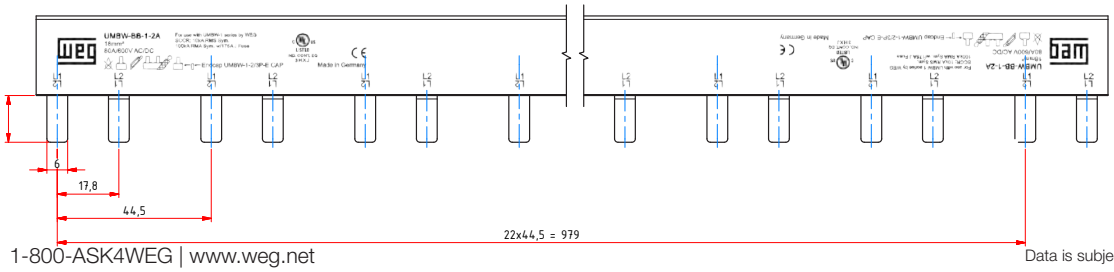


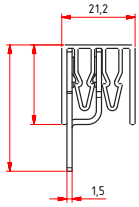




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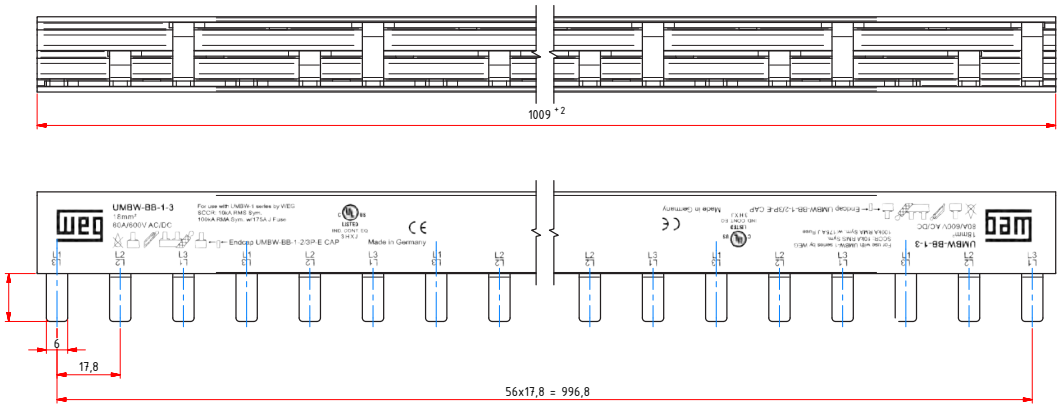



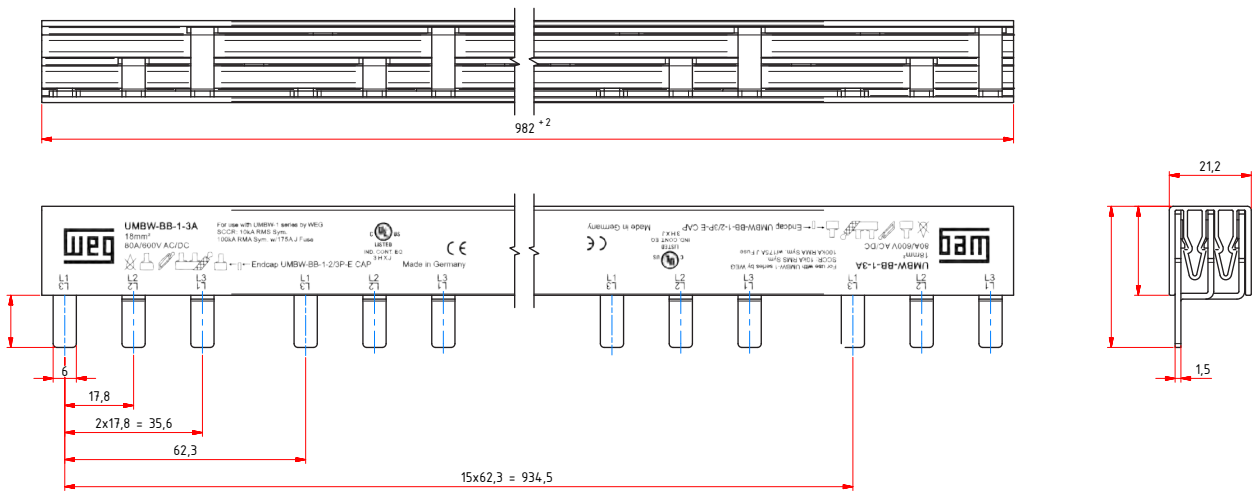



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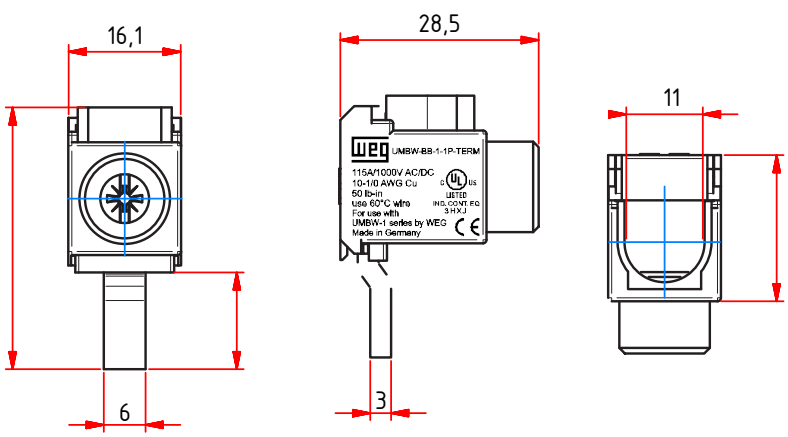
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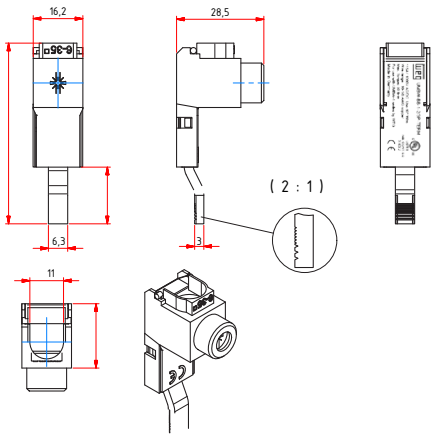

## UMBW-BB-1-3A




## UMBW-BB-1-1P-TERM



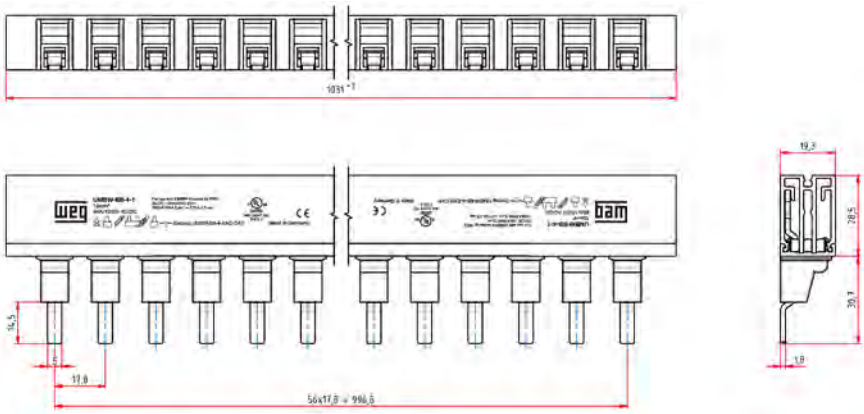

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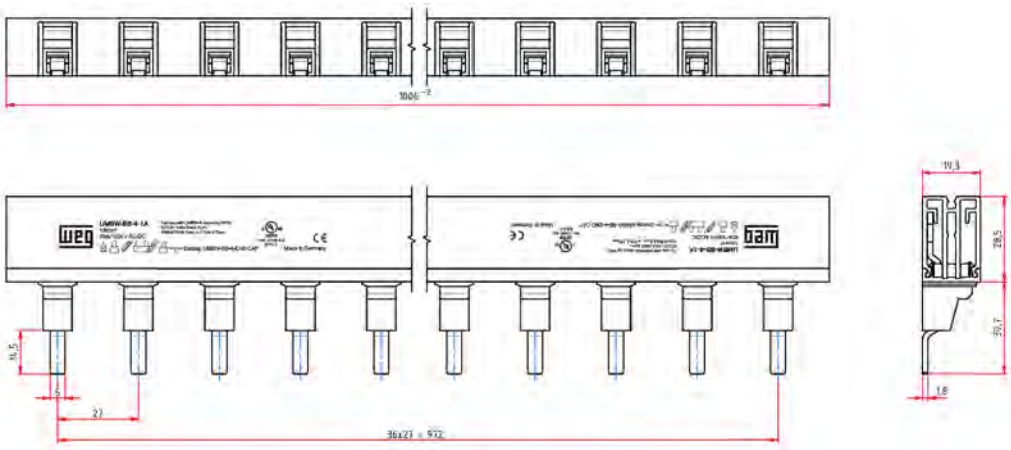
# Circuit Protection

## UMBW

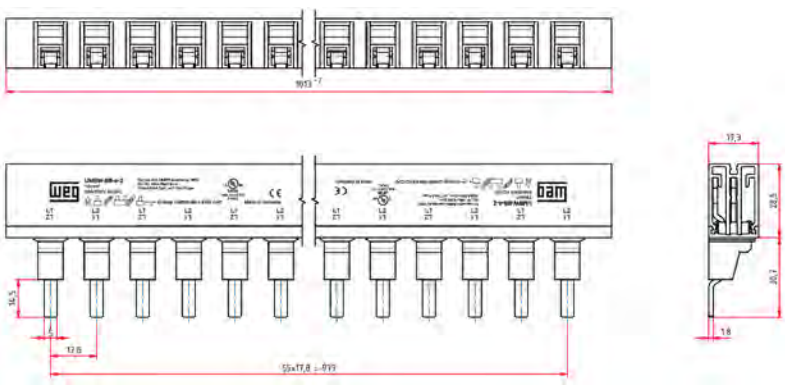
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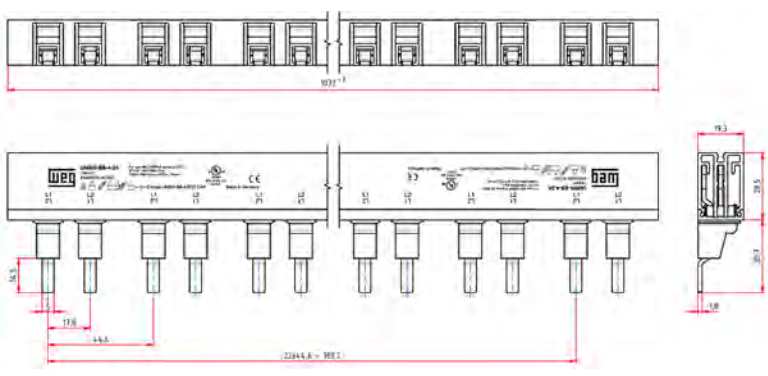
### UMBW-BB-4-1A



### UMBW-BB-4-2



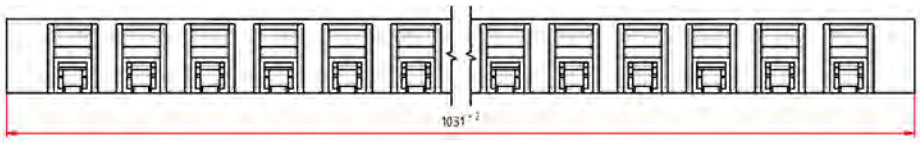
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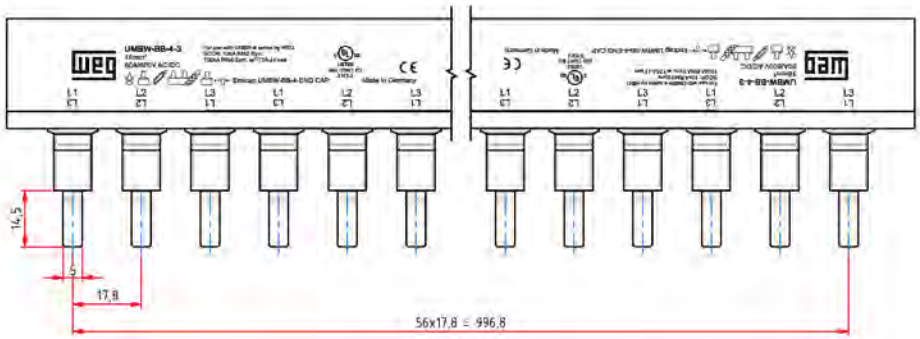


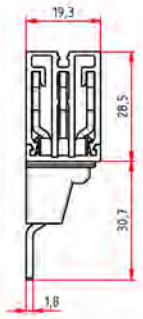


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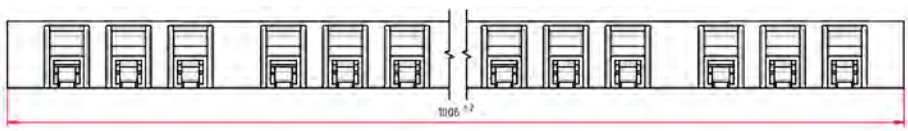
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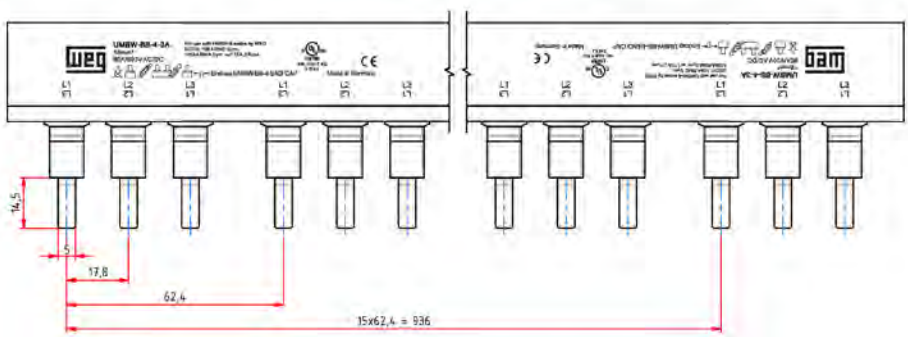


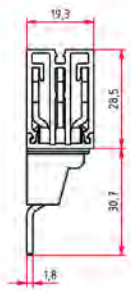



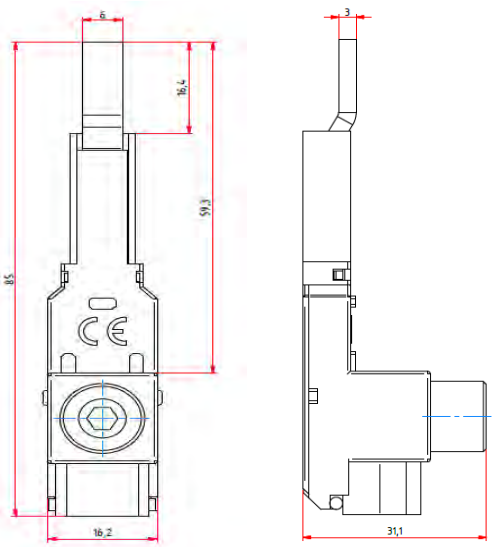

## UMBW-BB-4-3A




## UMBW-BB-4-1P-TERM



# MSW

Introducing the New WEG MSW Series Disconnect Switches. The MSW was developed according to IEC 60947-3 & UL508. The compact, reliable design of the MSW allows the operator to safely disconnect power and isolate the circuit within the panel. The MSW has a range of 25 to 160Amps, panel or door mount options, and offers a variety of accessories.



UL File No. E189202

## Standard Features

- Suitable as Motor Disconnect
- Base or Door mounting options
- DIN or base mounted
- Through the door or direct mount handles
- Touch Safe IP20

## MSW Catalog Number Sequence

| MSW | 25 | B | 3 | H |
|---|---|---|---|---|

**25** – Amperage Ratings/ Accessories

Door Mount- 25A, 40A, 63A, 80A, 100A,
Panel Mount- 25A, 40A, 63A, 80A, 125A, 160A

AP- Neutral Pole
AC- Auxiliary Contact
TS- Terminal Cover

**B** – Mounting

P- Panel Door Mount
B- Base Mount

**3** – Number of Poles

Poles- 3

**H** – Accessories

H- Red/Yellow Handle, + Shaft (Base Mount)
B- Black/Grey Handle, + Shaft (Base Mount)
NA- Neutral Pole
1NO- Auxiliary Contact
1NC - Auxiliary Contact

## Overview

| Mounting | Current (A) | Handle | | Shaft (mm) | | | Neutral pole | Auxiliary contact | | | Terminal cover |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Red/yellow | Black/gray | 85 | 185 | 300 | | 1NO | 1NC | 1NO/1NC | |
| Panel door | 32 | ● | ■ | | | | ■ | ■ | ■ | | ■ |
| | 40 | ● | ■ | | | | ■ | ■ | ■ | | ■ |
| | 63 | ● | ■ | | | | ■ | ■ | ■ | | ■ |
| | 80 | ● | ■ | | | | ■ | ■ | ■ | | ■ |
| | 100 | ● | | | | | | | | | ■ |
| Base | 32 | ● | ■ | ♦ | ■ | ■ | ■ | ■ | ■ | | ■ |
| | 40 | ● | ■ | ♦ | ■ | ■ | ■ | ■ | ■ | | ■ |
| | 63 | ● | ■ | ♦ | ■ | ■ | ■ | ■ | ■ | | ■ |
| | 80 | ● | ■ | ♦ | ■ | ■ | ■ | ■ | ■ | | ■ |
| | 125 | ● | | | ■ | ● | | | | ■ | ■ |
| | 160 | ● | | | ■ | ● | | | | ■ | ■ |

*Notes: ♦ - Only available as part of the standard configuration.*
*● - Available as part of the standard configuration or it can be supplied separately.*
*■ - Only available to be supplied separately.*



Data is subject to change without notice.

# Disconnect Switches for Panel Door Mounting

## Standard Configuration (Disconnect Switch + Handle Red/Yellow)

| Catalog Number | Ith (A) | Ie (A) | | | Poles | List Price | Multiplier |
|---|---|---|---|---|---|---|---|
| | | AC21 (690 V) | AC22 (690 V) | AC23 (690 V) | | | |
| MSW 25 P-3 H | 32 | 32 | 25 | 16 | 3 | $80 | Z13 |
| MSW 40 P-3 H | 40 | 40 | 32 | 20 | | $85 | |
| MSW 63 P-3 H | 63 | 63 | 63 | 26 | | $137 | |
| MSW 80 P-3 H | 80 | 80 | 80 | 32 | | $148 | |
| MSW 100 P-3 H | 100 | 100 | 86 | 38 | | $185 | |



## Disconnect Switches and Accessories

### Disconnect Switch

| Catalog Number | Ith (A) | Ie (A) | | | Poles | List Price | Multiplier |
|---|---|---|---|---|---|---|---|
| | | AC21 (690 V) | AC22 (690 V) | AC23 (690 V) | | | |
| MSW 25 P-3 | 32 | 32 | 25 | 16 | 3 | $53 | Z13 |
| MSW 40 P-3 | 40 | 40 | 32 | 20 | | $58 | |
| MSW 63 P-3 | 63 | 63 | 63 | 26 | | $110 | |
| MSW 80 P-3 | 80 | 80 | 80 | 32 | | $122 | |
| MSW 100 P-3 | 100 | 100 | 86 | 38 | | $158 | |



### Rotary Handle

| Catalog Number | Disconnect Switch | Color | List Price | Multiplier |
|---|---|---|---|---|
| MSW H 40 P | MSW25/MSW40 | Red/Yellow | $27 | Z13 |
| MSW H 100 P | MSW63/MSW80/MSW100 | Red/Yellow | $30 | |
| MSW H 40-P-B | MSW25/MSW40 | Black/Gray | $27 | |
| MSW H 100-P-B | MSW63/MSW80/MSW100 | Black/Gray | $30 | |



### Neutral Pole

| Catalog Number | Disconnect Switch | Contact | List Price | Multiplier |
|---|---|---|---|---|
| MSW AP 25-P-1 NA | MSW25 | 1 NO early make | $42 | Z13 |
| MSW AP 40-P-1 NA | MSW40 | 1 NO early make | $42 | |
| MSW AP 63-P-1 NA | MSW63 | 1 NO early make | $49 | |
| MSW AP 80-P-1 NA | MSW80 | 1 NO early make | $49 | |



### Auxiliary Contact

| Catalog Number | Disconnect Switch | Contact | List Price | Multiplier |
|---|---|---|---|---|
| MSW AC-40 P 1NC | MSW25/MSW40 | 1NC | $35 | Z13 |
| MSW AC-40 P 1NO | MSW25/MSW40 | 1NO | $35 | |
| MSW AC-80 P 1NC | MSW63/MSW80 | 1NC | $37 | |
| MSW AC-80 P 1NO | MSW63/MSW80 | 1NO | $37 | |



### Terminal Cover

| Catalog Number | Disconnect Switch | Poles | List Price | Multiplier |
|---|---|---|---|---|
| MSW TS-40 P | MSW25/MSW40 | 3 | $14 | Z13 |
| MSW TS-80 B/P | MSW63/MSW80 | | $28 | |
| MSW TS-100 P [1)] | MSW100 | 2 | $70 | |



*Note: 1) Necessary 2 pieces of MSW TS-100P to cover 3 poles.*
*Terminal cover to line or load side (1 piece supplied).*




Data is subject to change without notice.

# Disconnect Switches

MSW

## Disconnect Switch for Base Mounting (Screw or Din Rail)

### Standard Configuration (Disconnect Switch + Handle Red/Yellow + Shaft)

| Catalog Number | Ith (A) | Ie (A) | | | Shaft length (mm) | Poles | List Price | Multiplier |
|---|---|---|---|---|---|---|---|---|
| | | AC21 (690 V) | AC22 (690 V) | AC23 (690 V) | | | | |
| MSW 25 B-3 H | 32 | 32 | 25 | 16 | 85 | 3 | $96 | Z13 |
| MSW 40 B-3 H | 40 | 40 | 32 | 20 | 85 | | $102 | |
| MSW 63 B-3 H | 63 | 63 | 63 | 26 | 85 | | $156 | |
| MSW 80 B-3 H | 80 | 80 | 80 | 32 | 85 | | $167 | |
| MSW 125 B-3 H | 125 | 125 | 125 | 80 | 300 | | $352 | |
| MSW 160 B-3 H | 160 | 160 | 160 | 100 | 300 | | $490 | |



### Disconnect Switches and Accessories

| Catalog Number | Ith (A) | Ie (A) | | | Poles | List Price | Multiplier |
|---|---|---|---|---|---|---|---|
| | | AC21 (690 V) | AC22 (690 V) | AC23 (690 V) | | | |
| MSW 25 B-3 | 32 | 32 | 25 | 16 | 3 | $53 | Z13 |
| MSW 40 B-3 | 40 | 40 | 32 | 20 | | $59 | |
| MSW 63 B-3 | 63 | 63 | 63 | 26 | | $112 | |
| MSW 80 B-3 | 80 | 80 | 80 | 32 | | $124 | |
| MSW 125 B-3 | 125 | 125 | 125 | 80 | | $286 | |
| MSW 160 B-3 | 160 | 160 | 160 | 100 | | $435 | |



### Rotary Handle + Shaft

| Catalog Number | Disconnect Switch | Color | Shaft (mm) | List Price | Mulitplier |
|---|---|---|---|---|---|
| MSW H 40 B | MSW25/MSW40 | Red/Yellow | 85 | $42 | Z13 |
| MSW H 80 B | MSW63/MSW80 | Red/Yellow | 85 | $45 | |
| MSW H 160 B | MSW125/MSW160 | Red/Yellow | 300 | $65 | |
| MSW H 40-B-B | MSW25/MSW40 | Black/Gray | 85 | $42 | |
| MSW H 80-B-B | MSW63/MSW80 | Black/Gray | 85 | $45 | |



### Shaft

| Catalog Number | Disconnect Switch | Length (mm) | List Price | Multiplier |
|---|---|---|---|---|
| MSW HS 185-40 | MSW25/MSW40 | 185 | $12 | Z13 |
| MSW HS 300-40 | MSW25/MSW40 | 300 | $17 | |
| MSW HS 185-160 | MSW63/MSW80/ MSW125/MSW160 | 185 | $20 | |
| MSW HS 300-160 | MSW63/MSW80/ MSW125/MSW160 | 300 | $26 | |



### Neutral Pole

| Catalog Number | Disconnect Switch | Contact | List Price | Multiplier |
|---|---|---|---|---|
| MSW AP 25-B-1 NA | MSW25 | 1 NO early make | $42 | Z13 |
| MSW AP 40-B-1 NA | MSW40 | 1 NO early make | $42 | |
| MSW AP 63-B-1 NA | MSW63 | 1 NO early make | $49 | |
| MSW AP 80-B-1 NA | MSW80 | 1 NO early make | $49 | |



### Auxiliary Contact

| Catalog Number | Disconnect Switch | Contact | List Price | Multiplier |
|---|---|---|---|---|
| MSW AC-40 B 1NC | MSW25/MSW40 | 1NC | $35 | Z13 |
| MSW AC-40 B 1NO | MSW25/MSW40 | 1NO | $35 | |
| MSW AC-80 B 1NC | MSW63/MSW80 | 1NC | $37 | |
| MSW AC-80 B 1NO | MSW63/MSW80 | 1NO | $37 | |
| MSW AC-160 B 1NONC | MSW125/MSW160 | 1NO/NC | $70 | |



### Terminal Cover

| Catalog Number | Disconnect Switch | Poles | List Price | Multiplier |
|---|---|---|---|---|
| MSW TS-40 B | MSW25/MSW40 | 3 | $16 | Z13 |
| MSW TS-80 B/P | MSW63/MSW80 | | $32 | |
| MSW TS-160 B | MSW125/MSW160 | | $78 | |

*Note: Terminal cover to line or load side (1 piece supplied).*





Data is subject to change without notice.

## Technical Data

| IEC 60947-3 characteristics | | | Units | MSW 25 | MSW 40 | MSW 63 | MSW 80 | MSW 100 | MSW 125 | MSW 160 | Auxiliary contact |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Rated operating voltage $U_e$ | | | V | 690 | | | | | | | |
| Rated insulation voltage $U_i$ | | | V | 690 | 690 | 690 | 690 | 690 | 800 | 800 | 690 |
| Rated impulse withstand voltage $U_{imp}$ (sectionable) | | | kV | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 4 |
| Rated thermal current Ith | | | A | 32 | 40 | 63 | 80 | 100 | 125 | 160 | 16 |
| Rated thermal current in enclosed $I_{the}$ | | | A | 32 | 40 | 63 | 80 | 86 | 125 | 160 | 10 |
| Frequency | | | Hz | 50/60 | | | | | | | |
| **Rated operating current $I_e$: alternate current** | | | | | | | | | | | |
| AC-21A switching resistive loads | | 690 V | A | 32 | 40 | 63 | 80 | 100 | 125 | 160 | AC-15 240 V-5 A |
| AC-22A switching mixed resistive and inductive loads | | 500 V | A | - | - | - | - | 100 | 125 | 160 | DC-13 250 V-0.44 A |
| | | 690 V | A | 25 | 32 | 63 | 80 | 86 | 125 | 160 | - |
| AC-23A periodic switching of motors | 3 phase 3 poles | 230 V | A/kW | 25/7.5 | 32/10 | 63/20 | 80/25 | 70/22 | 125/30 | 160/45 | - |
| | | 400 V | A/kW | 25/15 | 32/18.5 | 50/28 | 75/42 | 67/37 | 125/55 | 160/75 | - |
| | | 500 V | A/kW | 22/15 | 27/18.5 | 50/35 | 75/52 | 67/45 | 100/63 | 125/80 | - |
| | | 690 V | A/kW | 16/15 | 20/18.5 | 26/25 | 32/31 | 38/37 | 80/75 | 100/90 | - |
| AC3 starting of cage motors (interruption while running) | 3 phase 3 poles | 230 V | A/kW | 22/5.5 | 27/7.5 | 45/14 | 60/19 | 60/18.5 | - | - | - |
| | | 400 V | A/kW | 22/11 | 27/15 | 40/22 | 55/30 | 55/30 | - | - | - |
| | | 500 V | A/kW | 22/11 | 22/15 | 35/24 | 45/31 | 55/37 | - | - | - |
| | | 690 V | A/kW | 16/11 | 16/15 | 22/21 | 25/24 | 32/30 | - | - | - |
| Rated interruption current AC-23A (cosfi 0.45) | | 230 V | A | 200 | 256 | 360 | 600 | 560 | - | - | - |
| | | 400 V | A | 200 | 256 | 320 | 536 | 536 | 1,000 | 1,280 | - |
| | | 500 V | A | 176 | 216 | 280 | 536 | 536 | - | - | - |
| | | 690 V | A | 128 | 160 | 176 | 256 | 304 | 800 | 800 | - |
| **Short circuit characteristics** | | | | | | | | | | | |
| Rated short-time short circuit withstand current Icw (1s) | | | A | 800 | 800 | 1,200 | 1,500 | 1,500 | 3,000 | 3,000 | - |
| Rated short circuit making capacity Icm | | | A | 1,500 | 1,500 | 2,200 | 2,800 | 2,840 | 4,500 | 4,500 | - |
| Conditional rated short circuit withstand current | | | kA | 10 | 10 | 10/5 | 10/5 | 10 | 15 | 15 | 1 |
| Fuse rating gG | | 500 V | A | - | - | - | - | 100 | 125 | 125 | 10 |
| | | 690 V | A | 40 | 40 | 63/80 | 63/80 | - | - | - | - |
| **UL 508 characteristics - UL File E189202** | | | | | | | | | | | |
| General use | | 600 V ac | A | 32 | 40 | 60 | 80 | 100 | 125 | 160 | HD A600 ac Q600 dc |
| Standard motors load | Single phase 2 poles | 120 V ac | HP (FLA) | 1.5 (20) | 2 (24) | 2 | 3 | 3 (34) | - | - | - |
| | | 240 V ac | HP (FLA) | 3 (17) | 5 (28) | 5 | 7.5 | 10 (50) | - | - | - |
| | 3 phase 3 poles | 240 V ac | HP (FLA) | 7.5 (22) | 10 (28) | 10 | 15 | 10 (28) | 40 (104) | 40 (104) | - |
| | | 480 V ac | HP (FLA) | 10 (14) | 15 (21) | 25 | 30 | 25 (34) | 100 (124) | 100 (124) | - |
| | | 600 V ac | HP (FLA) | 15 (17) | 20 (22) | 30 | 40 | 30 (32) | 125 (125) | 125 (125) | - |
| **General characteristics** | | | | | | | | | | | |
| Protection degree | | Handle | EN 60529/UL 50 | IP65 / Type 1-4-4X-NEMA 4X | | | | | | | - |
| | | Terminals | EN 60529 | IP20 | | | | | | | |
| Material group | | EN 60947-1 | - | II | | | | | IIIa | IIIa | II |
| Pollution grade | | EN 60947-1 | - | 3 | | | | | | | |
| Flammability | | UL 94 | - | V0 | | | | | | | |
| Ambient temperature | | Operation | °C | -25 +55 | | | | | | | |
| | | Storage | °C | -30 +70 | | | | | | | |
| Climate withstand | | IEC 68 part 2-3 | - | Hot damp | | | | | | | |
| | | IEC 68 part 2-30 | - | Unsetted hot damp | | | | | | | |
| Switching force (3 poles) | | - | - | 0.8 Nm (7.1 lb.in.) | | 1 Nm (8.85 lb.in.) | | 1.5 Nm | 2.6 (23 lb.in.) | | - |
| Connections | | EN 60947-1 | - | - | | - | | | - | - | - |
| Terminal block caliber | | - | - | A6 | | A8 | | | - | - | A2 |
| Terminal screw | | - | - | M4 | | M5 | | | M8 | M8 | M3.5 |
| Tightening torque | | EN 60947-1 | - | 1.2 Nm | | 3 Nm | | | 6 Nm | 6 Nm | 0.8 Nm |
| | | UL 508 | - | 10.6 lb.in. (1.2 Nm) | | 32 lb.in. (3.6 Nm) | | | 53 lb.in. (6Nm) | | 7.1 lb.in. |
| Main terminal capacity | | - | mm² | 1.5-10 | | 6-25 | | | 10-70 | 10-70 | 1-2.5 |
| Flexible conductors | | - | AWG | 12-6 | | 10-2 | | | 3/0-6 | 3/0-6 | 18-12 |
| | | - | mm² | 1.5-16 | | 10-35 | | | 10-70 | 10-70 | 1-2.5 |
| Solid conductors | | - | AWG | 12-6 | | 10-2 | | | 3/0-6 | 3/0-6 | 18-12 |
| Opening angles | | | | 90° | | | | | | | - |

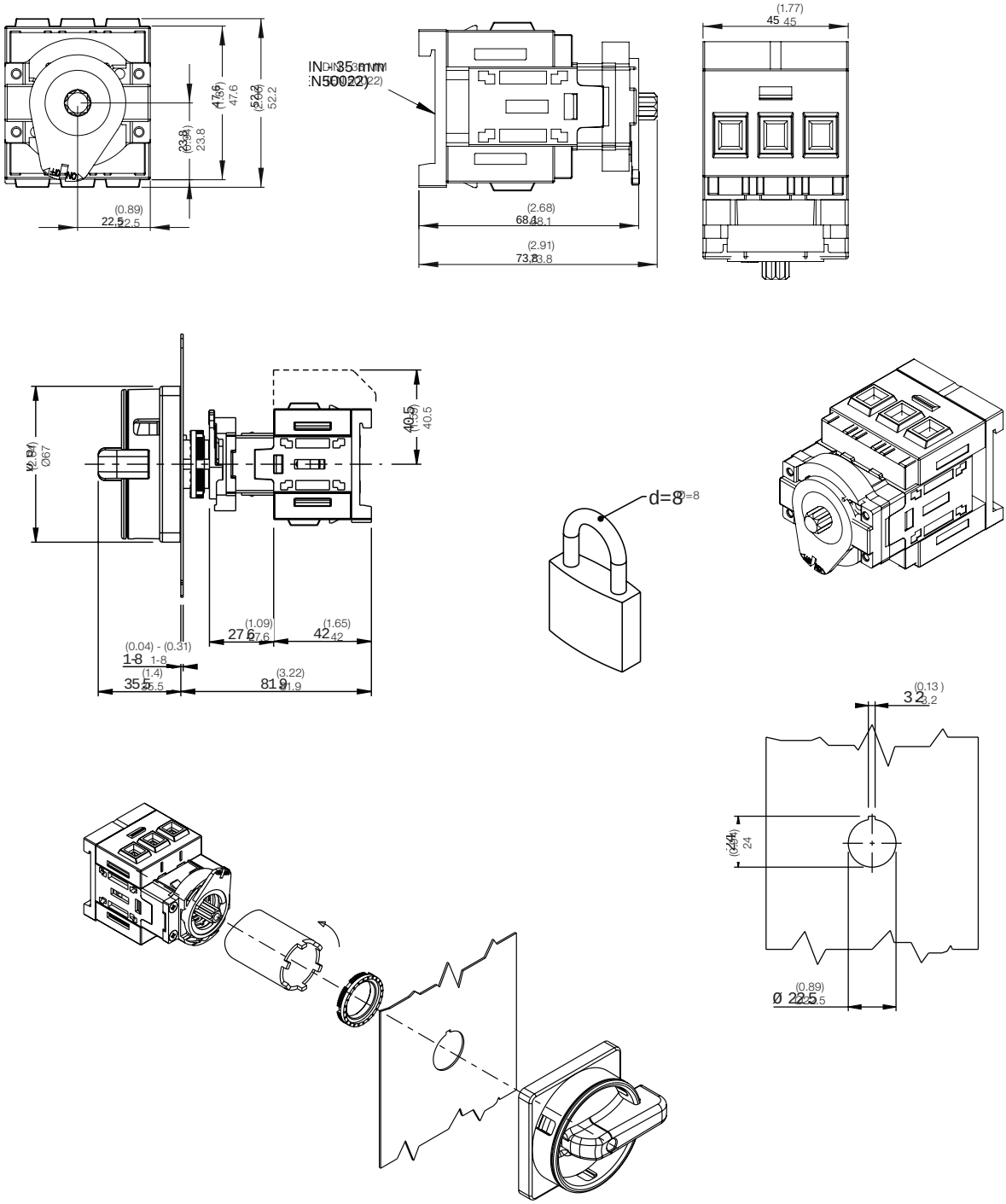
# Disconnect Switches

MSW

## Dimensions

## Disconnect Switches for Panel Door Mounting

### MSW25...40P-3



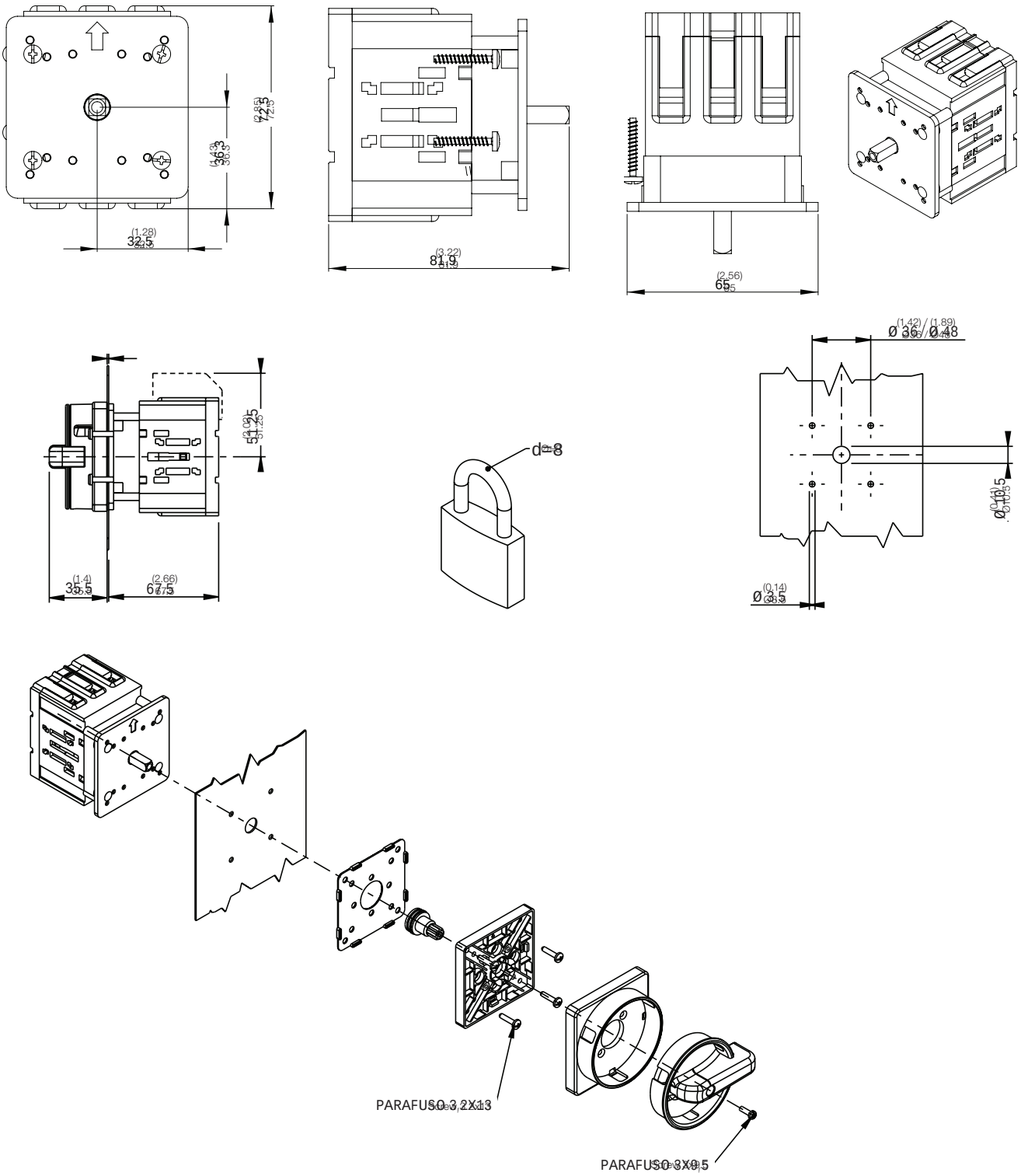

*Note: Dimensions mm (in).*



Data is subject to change without notice.

## Dimensions

### MSW63...80P-3



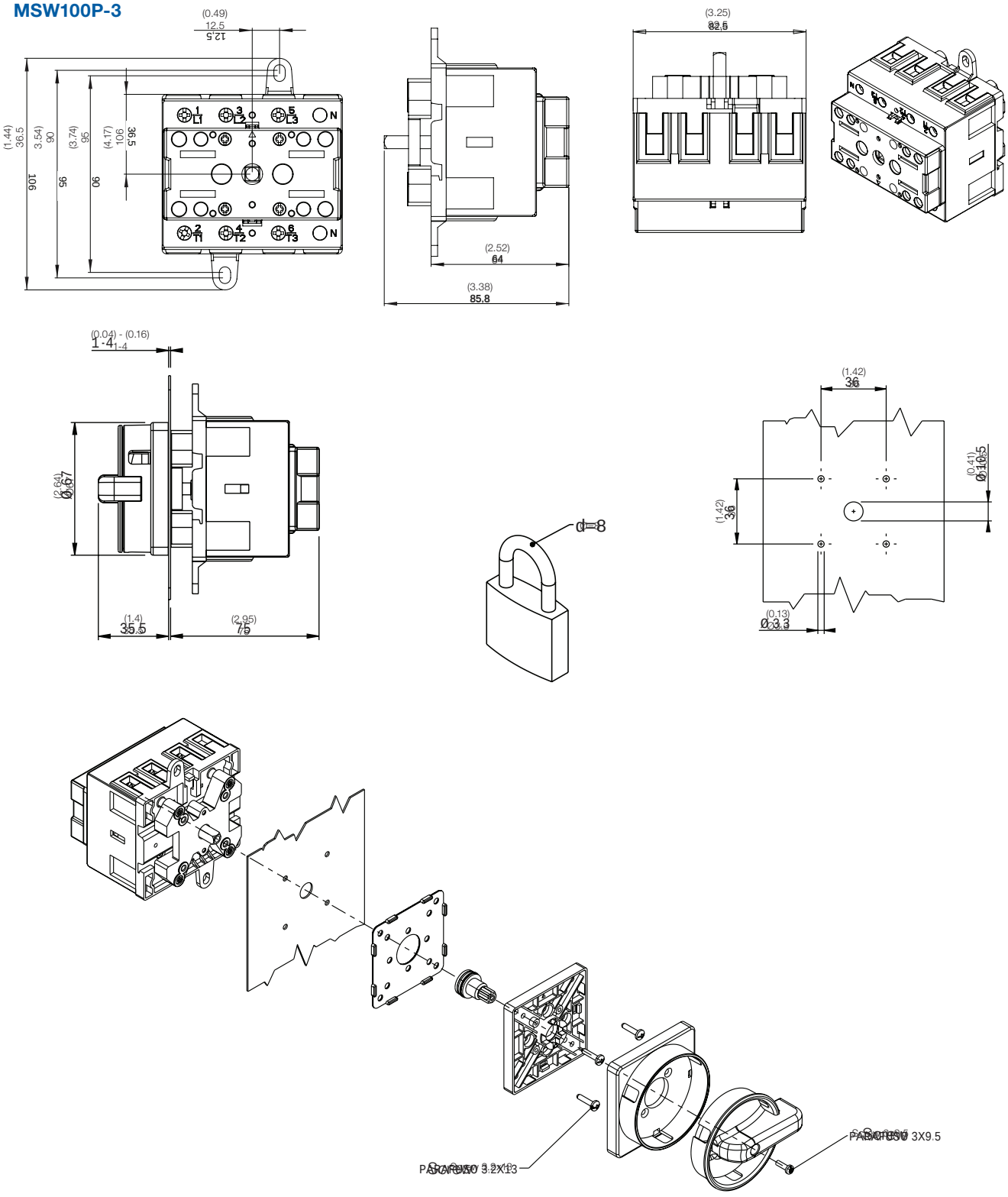

*Note: Dimensions mm (in).*

# Disconnect Switches

MSW

## Dimensions

### MSW100P-3




*Note: Dimensions mm (in).*

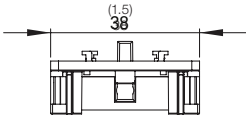


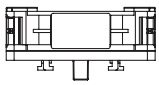
Data is subject to change without notice.

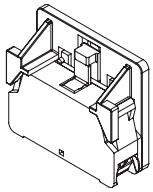
# Dimensions

## Auxiliary Contact

### MSWAC-40...80P1NC / MSWAC-40...80P1NO

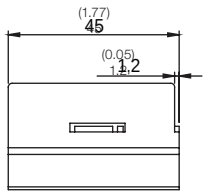


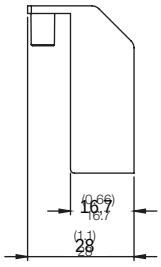



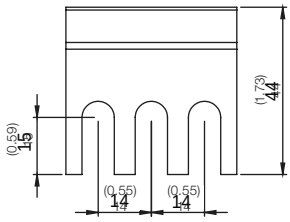


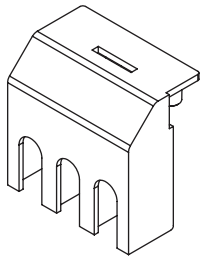
## Terminal Cover

### MSWTS-40P

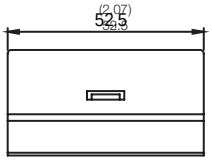


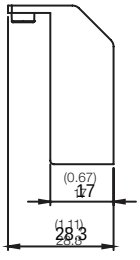



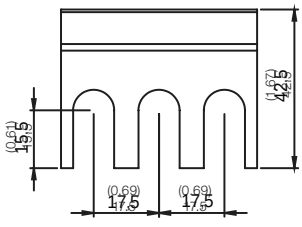



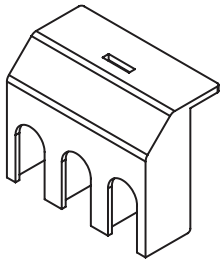



### MSWTS-80B-P

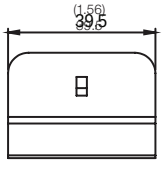


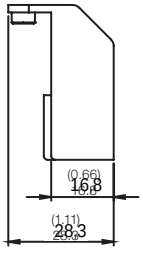



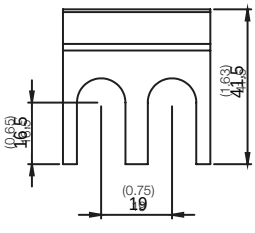



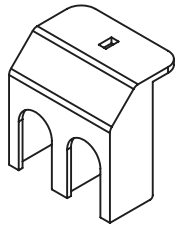



### MSWTS-100P



*Note: Dimensions mm (in).*

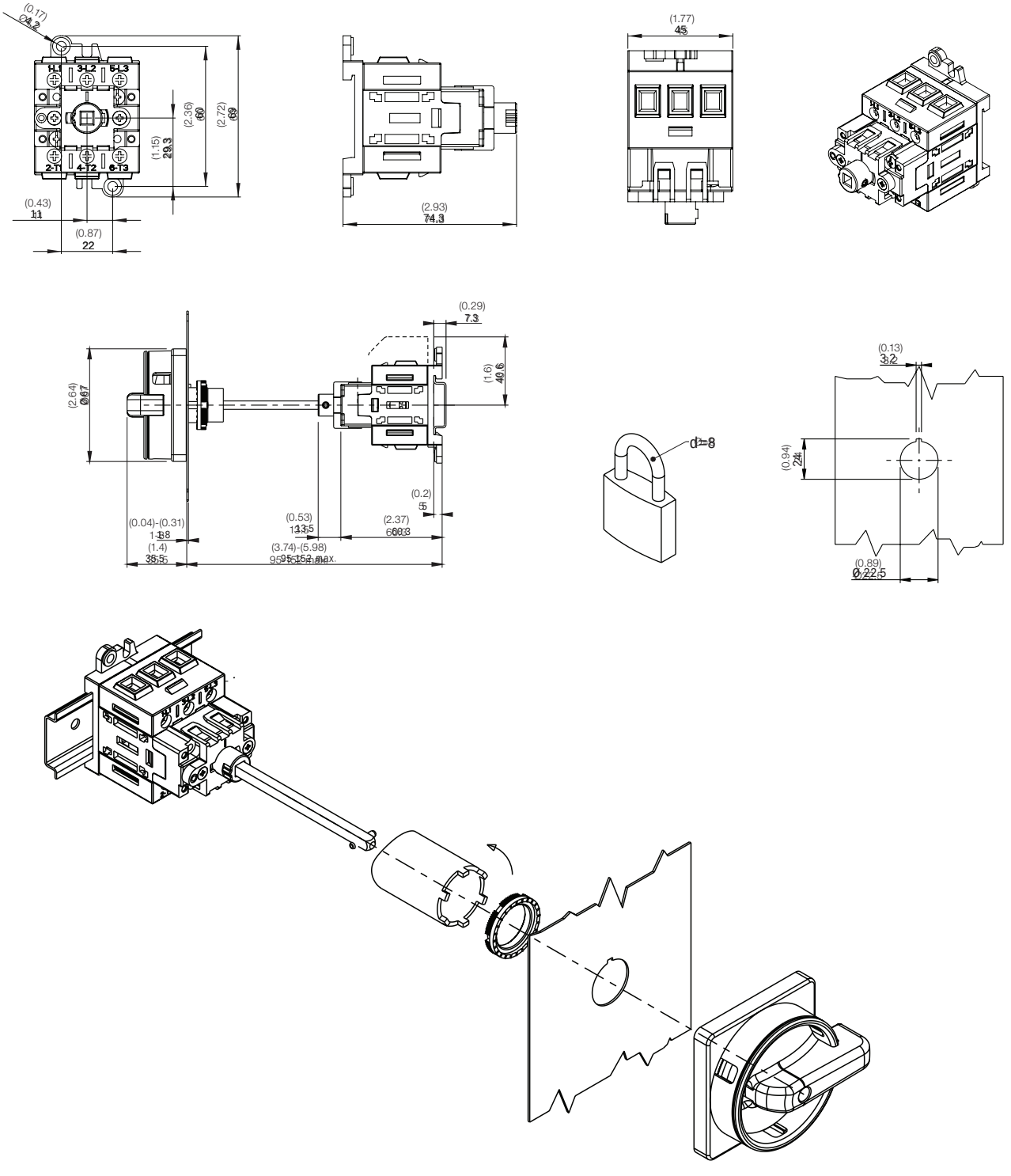
# Disconnect Switches

MSW

## Dimensions

## Disconnect Switches for Base Mounting

### MSW25...40B-3



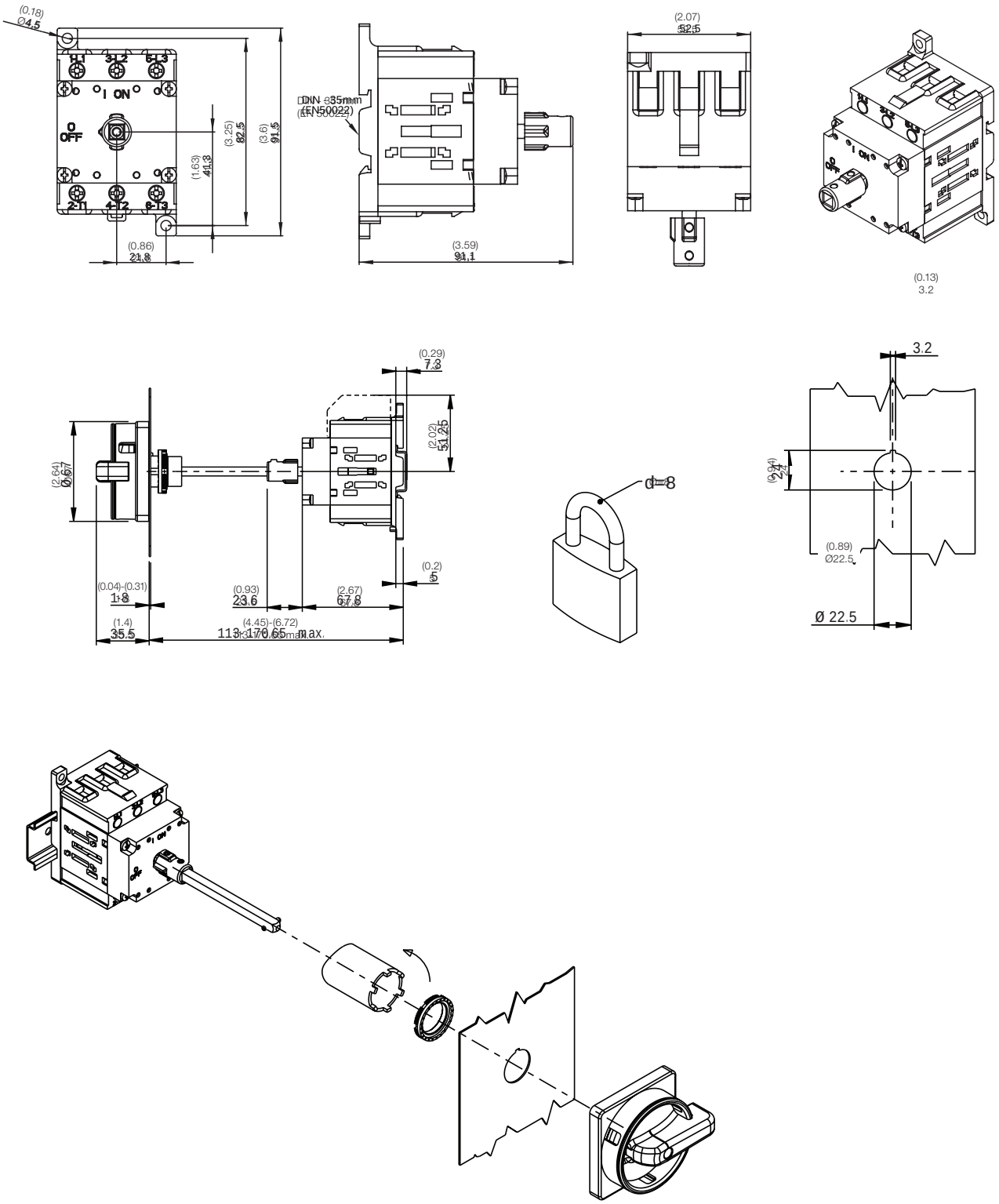

*Note: Dimensions mm (in).*



Data is subject to change without notice.

## Dimensions

### MSW63...80B-3



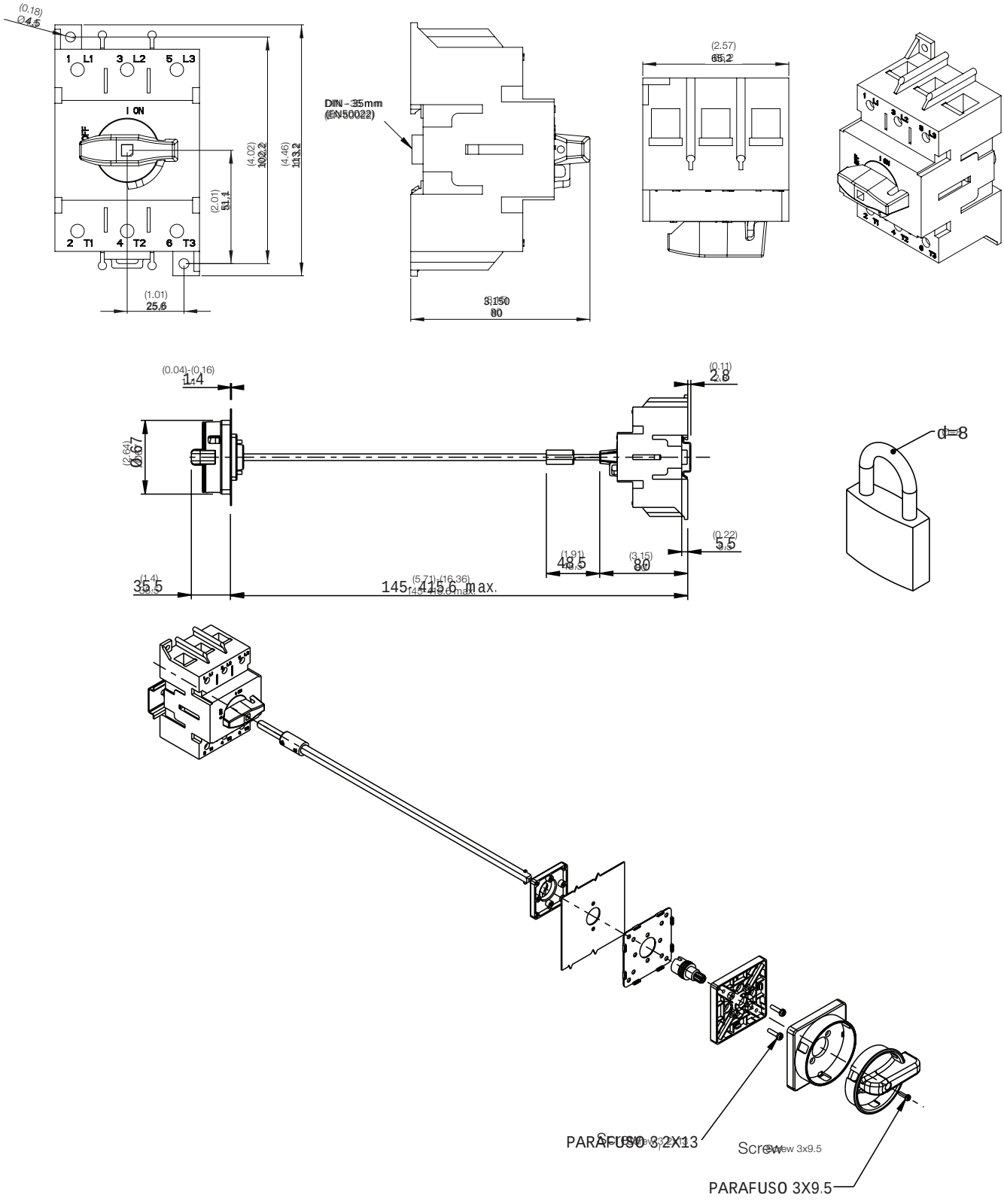

*Note: Dimensions mm (in).*

# Disconnect Switches

MSW

## Dimensions

### MSW125...160B-3




*Note: Dimensions mm (in).*

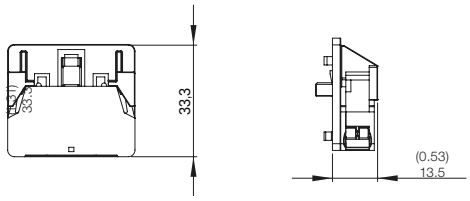


Data is subject to change without notice.

# Dimensions

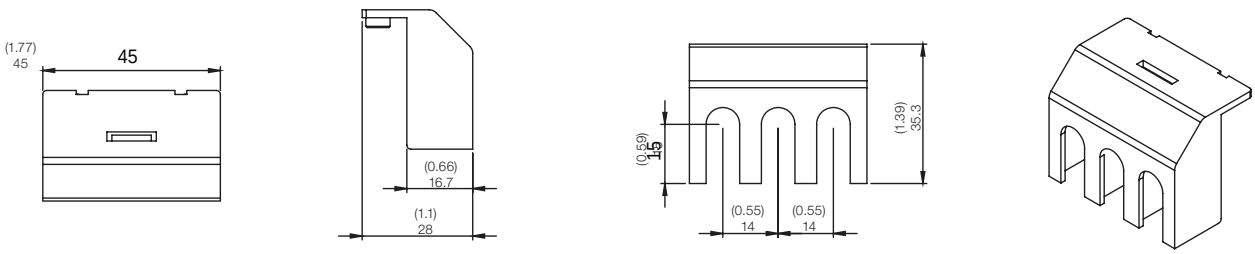
## Auxiliary Contact

### MSWAC-40...80B1NC / MSWAC-40...80B1NO

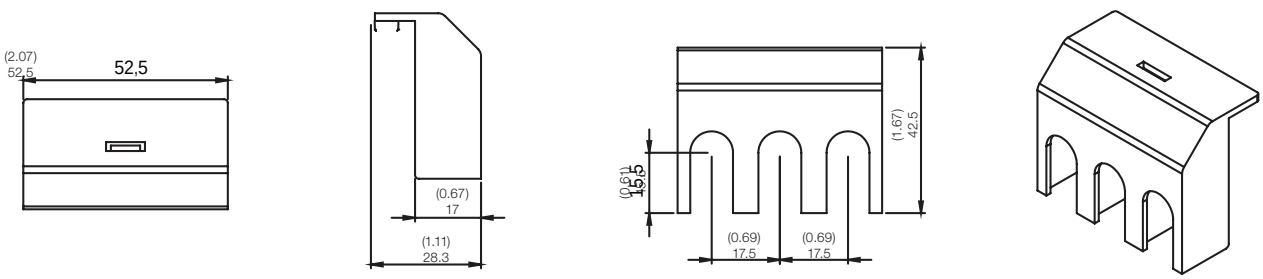



## Terminal Cover

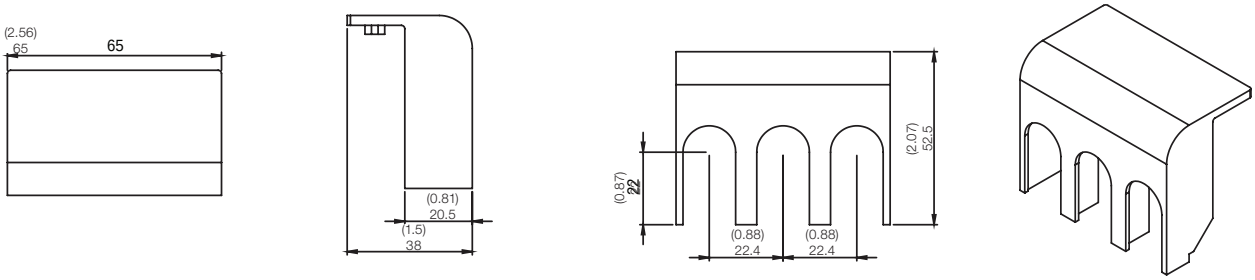
### MSWTS-40B




### MSWTS-80B-P




### MSWTS-160B




*Note: Dimensions mm (in).*

# MPW Series

The WEG MPW Series Manual Motor Protectors provide a very compact solution for operation and protection in motor control applications. The NEC requires four functions to be considered a combination motor starter: Motor Disconnect, Branch Circuit Protection, Motor Controller and Motor Overload Protection. The WEG MPW meets all of these requirements, and the requirements of UL for Self-Protected Motor Controllers to be used in Type-E & F applications. With worldwide approvals the WEG MPW can be used in a variety of applications all over the world.




UL File No. E172121

## Standard Features

- High short-circuit interrupting ratings- Up to 65kA @480V
- Phase Loss sensitivity protection
- UL Type-E self-protected combination starter
- Suitable for Motor Disconnect applications
- Group motor installations (per NEC Article 430)
- Wide variety of Accessories
- Rated for DC applications

## MPW Catalog Number Sequence

| MPW | 18 | - | 3 | - | U004 |
|---|---|---|---|---|---|

**Manual Motor Protector Series:**

MPW:Manual Motor Protectors

**# Poles**

3 = 3

**Frame Size**

18: to use with CWC07…025 & CWM9…CWM18
40: to use with CWC07…025 & CWM9…40
65: to use with CWM50…80
100: to use with CWM95…105

**Overload Setting Current**

| MPW18 | MPW65 |
|---|---|
| CO16: 1.10…0.16A | UO16:10…16A |
| UO16: 10…18A | UO65: 50…65A |
| **MPW40** | **MPW100** |
| CO16: 1.10…0.16A | UO75: 55…75A |
| U032: 25…40A | U100: 80…100A |

For more details refer to selection table for each frame size

*Table intended as reference only and not to create part numbers*



Data is subject to change without notice.

## MPW18 - Product Selection

- Suitable for manual motor controller and group installation
- Built-in protection: disconnect means, short circuit protection, motor control and overload protection
- Short circuit interrupting capacity up to 50kA@480Vac (10kA@600Vac)
- Fixed short circuit release 13 x Iu
- Phase loss sensivity
- Ambient temperature compensation -40...+1400F (-20...+600C)




| Maximum UL Horsepower | | | | | | Thermal Setting | Short-Circuit interruption capacity | | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Single Phase | | Three Phase | | | | | | | | | |
| 115V | 230V | 200V | 230V | 460V | 575V | [A] | 480V | 600V | | | |
| - | - | - | - | - | - | 0.10 - 0.16 | 50kA | 10kA | MPW18-3-C016 | $97 | Z4 |
| - | - | - | - | - | - | 0.16 - 0.25 | 50kA | 10kA | MPW18-3-C025 | $97 | |
| - | - | - | | - | - | 0.25 - 0.40 | 50kA | 10kA | MPW18-3-D004 | $97 | |
| - | - | - | - | - | - | 0.40 - 0.63 | 50kA | 10kA | MPW18-3-C063 | $105 | |
| - | - | - | - | - | 1/2 | 0.63 - 1.0 | 50kA | 10kA | MPW18-3-U001 | $105 | |
| - | 1/10 | - | - | 3/4 | 3/4 | 1.0 - 1.6 | 50kA | 10kA | MPW18-3-D016 | $105 | |
| - | 1/6 | 1/2 | 1/2 | 1 | 1 1/2 | 1.6 - 2.5 | 50kA | 10kA | MPW18-3-D025 | $105 | |
| 1/8 | 1/3 | 3/4 | 3/4 | 2 | 3 | 2.5 - 4.0 | 50kA | 10kA | MPW18-3-U004 | $105 | |
| 1/4 | 1/2 | 1 | 1 1/2 | 3 | 5 | 4.0 - 6.3 | 50kA | 10kA | MPW18-3-D063 | $105 | |
| 1/2 | 1 1/2 | 2 | 3 | 5 | 7 1/2 | 6.3 - 10 | 50kA | 5kA | MPW18-3-U010 | $125 | |
| 1 | 2 | 3 | 5 | 10 | 10 | 10 - 16 | 30kA | 5kA | MPW18-3-U016 | $125 | |
| 1 | 3 | 5 | 5 | 10 | 15 | 12-18 | 30kA | 5kA | MPW18-3-U018 | $145 | |

*Note: Horsepower ratings shown in the table are for reference only.*
*Please refer to the Full Load Amps of the Motor for final selection.*

# Motor Protectors

MPW

## Accessories for MPW18 - Summary

| Description | Catalog Number | List Price | Multiplier |
|---|---|---|---|
| **Auxiliary Contact Blocks** | | | |
| 1NO&1NC auxiliary contact block front mounting - 250Vmax. | ACBF-11 | $20 | Z4 |
| 1NO&1NC auxiliary contact block left side mounting - 600Vmax. | ACBS-11 | $22 | |
| 2NO Auxiliary contact block left side mounting - 600Vmax. | ACBS-20 | $22 | |
| 2NC Auxiliary contact block left side mounting - 600Vmax. | ACBS-02 | $22 | |
| **Link Modules** | | | |
| Mechanical and electrical link module for CWB9...38 AC coil | ECCMP-18B38 | $20 | Z4 |
| Mechanical and electrical link module for CWC07...16 AC coil | ECCMP-C016 | $20 | |
| Mechanical and electrical link module for CWC025 miniature contactor series | ECCMP-C025 | $20 | |
| **Accessories for Group Motor Installation** [1] | | | |
| Three Phase Line Side Feeder Terminal | FTBBS | $35 | Z4 |
| Bus bar system 45mm (for 2 MPW without side mounting auxiliary contacts) | BBS45-2 | $32 | |
| Bus bar system 45mm (for 3 MPW without side mounting auxiliary contacts) | BBS45-3 | $35 | |
| Bus bar system 45mm (for 4 MPW without side mounting auxiliary contacts) | BBS45-4 | $45 | |
| Bus bar system 45mm (for 5 MPW without side mounting auxiliary contacts) | BBS45-5 | $60 | |
| Bus bar system 54mm (for 2 MPW with side mounting auxiliary contacts) | BBS54-2 | $32 | |
| Bus bar system 54mm (for 3 MPW with side mounting auxiliary contacts) | BBS54-3 | $35 | |
| Bus bar system 54mm (for 4 MPW with side mounting auxiliary contacts) | BBS54-4 | $45 | |
| Bus bar system 54mm (for 5 MPW with side mounting auxiliary contacts) | BBS54-5 | $60 | |
| Shroud for unused terminals of BBS bars | CSD | $10 [2] | |
| **Under Voltage and Shunt Block Releases** | | | |
| Shunt release block right side mounting - 20-24V 50/60Hz | SRMP D51 | $56 | Z4 |
| Shunt release block right side mounting - 100-127V 50/60Hz | SRMP D59 | $56 | |
| Shunt release block right side mounting - 200-240V 50/60Hz | SRMP D65 | $56 | |
| Under voltage release block right side mounting - 24V 60Hz | URMP V05 | $56 | |
| Under voltage release block right side mounting - 120V 60Hz | URMP V18 | $56 | |
| Under voltage release block right side mounting - 208V 60Hz | URMP V23 | $56 | |
| Under voltage release block right side mounting - 240V 60Hz | URMP V30 | $56 | |
| Under voltage release block right side mounting - 480V 60Hz | URMP V47 | $56 | |
| **IEC Enclosures** | | | |
| IEC IP66 enclosure (non-UL) | PE66GN | $45 | Z4 |
| **Other Accessories** | | | |
| Scale cover protection for the current range adjustment - package with 5 units | SCMP | $5 | Z4 |
| Lugs for panel mounting - package with 2 pieces (one MPW mounting) | PLMP | $0.50 | |

*Notes: [1] Maximum Amps of each Bus bar system (BBS) must not be exceeded by adding multiple MPW. Bus bar capacity is 63Amps.*
*[2] Unit list price. Product sold in multiples of 5 units.*



Data is subject to change without notice.

## MPW40 - Product Selection




- Suitable for manual motor controller, group installation, tap conductor and combination starters* Type E & Type F
- Built-in protection: disconnect means, short-circuit protection, motor control and overload protection
- Short-circuit interrupting capacity up to 50kA@480Vac (25kA@600Vac)
- Fixed short-circuit release 13 x Iu
- Phase loss sensitivity
- Ambient temperature compensation -4…+140ºF (-20…+60ºC)

** When associated with line side terminal LST25 and trip indicator TSB-22*

| Maximum UL Horsepower | | | | | | Thermal Setting | Short-Circuit Ratings for Group Installation | | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Single Phase | | Three Phase | | | | | | | | | |
| 115V | 230V | 200V | 230V | 460V | 575V | [A] | 480V | 600V | | | |
| - | - | - | - | - | - | 0.10 - 0.16 | 65kA | 25kA | MPW40-3-C016 | $116 | |
| - | - | - | - | - | - | 0.16 - 0.25 | 65kA | 25kA | MPW40-3-C025 | $116 | |
| - | - | - | - | - | - | 0.25 - 0.40 | 65kA | 25kA | MPW40-3-D004 | $116 | |
| - | - | - | - | - | 1/4 | 0.40 - 0.63 | 65kA | 25kA | MPW40-3-C063 | $137 | |
| - | - | - | - | 1/2 | 1/2 | 0.63 - 1.0 | 65kA | 25kA | MPW40-3-U001 | $137 | |
| - | 1/10 | 1/4 | 1/3 | 3/4 | 1 | 1.0 - 1.6 | 65kA | 25kA | MPW40-3-D016 | $137 | |
| - | 1/6 | 1/2 | 1/2 | 1 1/2 | 1 1/2 | 1.6 - 2.5 | 65kA | 25kA | MPW40-3-D025 | $137 | |
| 1/8 | 1/3 | 3/4 | 1 | 2 | 3 | 2.5 - 4.0 | 65kA | 25kA | MPW40-3-U004 | $137 | Z4 |
| 1/4 | 3/4 | 1 1/2 | 1 1/2 | 3 | 5 | 4.0 - 6.3 | 65kA | 25kA | MPW40-3-D063 | $137 | |
| 1/2 | 1 1/2 | 3 | 3 | 5 | 7 1/2 | 6.3 - 10 | 65kA | 25kA | MPW40-3-U010 | $137 | |
| 1 | 3 | 5 | 5 | 10 | 15 | 10 - 16 | 50kA | 25kA | MPW40-3-U016 | $150 | |
| 1 1/2 | 3 | 5 | 7 1/2 | 15 | 15 | 16 - 20 | 50kA | 25kA | MPW40-3-U020 | $165 | |
| 2 | 3 | 7 1/2 | 7 1/2 | 15 | 20 | 20 - 25 | 50kA | 25kA | MPW40-3-U025 | $195 | |
| - | 5 | 10 | 10 | 20 | 25 | 25 - 32 | 50kA | 25kA | MPW40-3-U032 | $210 | |
| - | 5 | 10 | 15 | 25 | - | 32 - 40 | 20kA | 5kA | MPW40-3-U040 | $250 | |

*Note: Horsepower ratings shown in the table are for reference only. Please refer to the Full Load Amps of the Motor for final selection.*

# Motor Protectors

MPW

## MPW40 with current Limiter - Product Selection




- Suitable for manual motor controller, group installation, tap conductor and combination starters* type E & type F
- Built-in protection: disconnect means, short-circuit protection, motor control and overload protection
- Short-circuit interrupting capacity up to 100kA@480Vac (50kA@600Vac)
- Fixed short-circuit release 13 x Iu
- Phase loss sensitivity
- Ambient temperature compensation -4…+140°F (-20…+60°C)

** When associated with line side terminal LST25 and trip indicator TSB-22*

*1) Individual Component Catalog Numbers are ordered separately.*

| Maximum UL Horsepower | | | | | | Thermal Setting | Short-Circuit interruption capacity | | Individual Component Catalog Number[1] | | | | Multiplier |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Single Phase | | Three Phase | | | | | | | Catalog Number | List Price | Catalog Number | List Price | |
| 115V | 230V | 200V | 230V | 460V | 575V | [A] | 480V | 600V | | | | | |
| - | - | - | - | - | - | 0.10 - 0.16 | 100kA | 50kA | MPW40-3-C016 | $116 | CLT32 MPW40 | $100 | Z4 |
| - | - | - | - | - | - | 0.16 - 0.25 | 100kA | 50kA | MPW40-3-C025 | $116 | CLT32 MPW40 | $100 | |
| - | - | - | - | - | - | 0.25 - 0.40 | 100kA | 50kA | MPW40-3-D004 | $116 | CLT32 MPW40 | $100 | |
| - | - | - | - | - | 1/4 | 0.40 - 0.63 | 100kA | 50kA | MPW40-3-C063 | $137 | CLT32 MPW40 | $100 | |
| - | - | - | - | 1/2 | 1/2 | 0.63 - 1.0 | 100kA | 50kA | MPW40-3-U001 | $137 | CLT32 MPW40 | $100 | |
| - | 1/10 | 1/4 | 1/3 | 3/4 | 1 | 1.0 - 1.6 | 100kA | 50kA | MPW40-3-D016 | $137 | CLT32 MPW40 | $100 | |
| - | 1/6 | 1/2 | 1/2 | 1 1/2 | 1 1/2 | 1.6 - 2.5 | 100kA | 50kA | MPW40-3-D025 | $137 | CLT32 MPW40 | $100 | |
| 1/8 | 1/3 | 3/4 | 1 | 2 | 3 | 2.5 - 4.0 | 100kA | 50kA | MPW40-3-U004 | $137 | CLT32 MPW40 | $100 | |
| 1/4 | 3/4 | 1 1/2 | 1 1/2 | 3 | 5 | 4.0 - 6.3 | 100kA | 50kA | MPW40-3-D063 | $137 | CLT32 MPW40 | $100 | |
| 1/2 | 1 1/2 | 3 | 3 | 5 | 7 1/2 | 6.3 - 10 | 100kA | 50kA | MPW40-3-U010 | $137 | CLT32 MPW40 | $100 | |
| 1 | 3 | 5 | 5 | 10 | 15 | 10 - 16 | 100kA | 50kA | MPW40-3-U016 | $150 | CLT32 MPW40 | $100 | |
| 1 1/2 | 3 | 5 | 7 1/2 | 15 | 15 | 16 - 20 | 100kA | 50kA | MPW40-3-U020 | $165 | CLT32 MPW40 | $100 | |
| 2 | 3 | 7 1/2 | 7 1/2 | 15 | 20 | 20 - 25 | 100kA | 50kA | MPW40-3-U025 | $195 | CLT32 MPW40 | $100 | |
| - | 5 | 10 | 10 | 20 | 25 | 25 - 32 | 100kA | 50kA | MPW40-3-U032 | $210 | CLT32 MPW40 | $100 | |

*Note: Horsepower ratings shown in the table are for reference only. Please refer to the Full Load Amps of the Motor for final selection.*



Data is subject to change without notice.

## Accessories for MPW40 - Summary

| Description | Catalog Number | List Price | Multiplier |
|---|---|---|---|
| **Auxiliary Contact Blocks** | | | |
| 1NO&1NC auxiliary contact block front mounting - 250Vmax. | ACBF-11 | $20 | Z4 |
| 1NO&1NC auxiliary contact block left side mounting - 600Vmax. | ACBS-11 | $22 | |
| 2NO Auxiliary contact block left side mounting - 600Vmax. | ACBS-20 | $22 | |
| 2NC Auxiliary contact block left side mounting - 600Vmax. | ACBS-02 | $22 | |
| **Accessories for Combination Type-E Construction** | | | |
| Line power terminal | LST25 | $42 | Z4 |
| Trip Signaling and Alarm Contact Block (1NO&1NC for Short-circuit and 1NO&1NC for Overload) | TSB-22 | $38 | |
| **Current Limiter** | | | |
| Current Limiter | CLT32 MPW40 | $100 | Z4 |
| **Link Modules** | | | |
| Mechanical and electrical link module for CWC07... CWC016 miniature contactor series | ECCMP-C0 | $20 | Z4 |
| Mechanical and electrical link module for CWM9…CWM25 contactor series | ECCMP-25 | $20 | |
| Mechanical and electrical link module for CWM32…CWM40 contactor series | ECCMP-32 | $25 | |
| Mechanical and electrical link module for CWB9…CWB38 contactor series | ECCMP-40B38 | $25 | |
| Mechanical and electrical link module for CWB9…CWB38 DC coil contactor series | ECCMP-40B38DC | $25 | |
| **Accessories for Group Motor Installation** [1] | | | |
| Income power terminal for bus bar system | FTBBS | $35 | Z4 |
| Bus bar system 45mm (for 2 MPW without side mounting auxiliary contacts) | BBS45-2 | $32 | |
| Bus bar system 45mm (for 3 MPW without side mounting auxiliary contacts) | BBS45-3 | $35 | |
| Bus bar system 45mm (for 4 MPW without side mounting auxiliary contacts) | BBS45-4 | $45 | |
| Bus bar system 45mm (for 5 MPW without side mounting auxiliary contacts) | BBS45-5 | $60 | |
| Bus bar system 54mm (for 2 MPW with side mounting auxiliary contacts) | BBS54-2 | $32 | |
| Bus bar system 54mm (for 3 MPW with side mounting auxiliary contacts) | BBS54-3 | $40 | |
| Bus bar system 54mm (for 4 MPW with side mounting auxiliary contacts) | BBS54-4 | $45 | |
| Bus bar system 54mm (for 5 MPW with side mounting auxiliary contacts) | BBS54-5 | $60 | |
| Shroud for unused terminals of BBS bars | CSD | $10[2] | |
| **Through-the-door Rotary Mechanisms** | | | |
| Rotary NEMA 1 Through the Door Mechanism - gray/black handle with 130mm shaft | RMMP-130 | $70 | Z4 |
| Rotary NEMA 1 Through the Door Mechanism - yellow/red handle with 130mm shaft | RMMP-130-E | $70 | |
| Rotary NEMA 1 Through the Door Mechanism - gray/black handle with 330mm shaft | RMMP-330 | $85 | |
| Rotary NEMA 1 Through the Door Mechanism - yellow/red handle with 330mm shaft | RMMP-330-E | $85 | |
| Rotary NEMA 4X Through the Door Mechanism - gray/black handle with 130mm shaft | MRX-130 | $105 | |
| Rotary NEMA 4X Through the Door Mechanism - yellow/red handle with 130mm shaft | MRX-130-E | $105 | |
| Rotary NEMA 4X Through the Door Mechanism - gray/black handle with 330mm shaft | MRX-330 | $115 | |
| Rotary NEMA 4X Through the Door Mechanism - yellow/red handle with 330mm shaft | MRX-330-E | $115 | |
| **Under Voltage and Shunt Block Releases** | | | |
| Shunt release block right side mounting - 20-24V 50/60Hz | SRMP D51 | $56 | Z4 |
| Shunt release block right side mounting - 100-127V 50/60Hz | SRMP D59 | $56 | |
| Shunt release block right side mounting - 200-240V 50/60Hz | SRMP D65 | $56 | |
| Under voltage release block right side mounting - 24V 60Hz | URMP V05 | $56 | |
| Under voltage release block right side mounting - 120V 60Hz | URMP V18 | $56 | |
| Under voltage release block right side mounting - 208V 60Hz | URMP V23 | $56 | |
| Under voltage release block right side mounting - 240V 60Hz | URMP V30 | $56 | |
| Under voltage release block right side mounting - 480V 60Hz | URMP V47 | $56 | |
| **Mounting adapter** | | | |
| Mounting adapter for a D.O.L. assembly with MPW40 and CWM contactors series | MA45DOL | $40 | Z4 |
| Mounting adapter for a REVERSING assembly with MPW40 and CWM contactors series | MA90RVS | $50 | |
| Mounting adapter for a STAR-DELTA assembly with MPW40 and CWM contactors series | MA90SDS | $85 | |
| **IEC Enclosures** | | | |
| IEC IP55 enclosure yellow/red handle (non-UL) | PE55GN-E | $45 | Z4 |
| IEC IP55 enclosure + lateral auxiliary device yellow/red handle (non-UL) | LPE55GN-E | $55 | |
| IEC IP55 enclosure gray/black handle (non-UL) | PE55GN | $45 | |
| IEC IP55 enclosure + lateral auxiliary device gray/black handle (non-UL) | LPE55GN | $55 | |
| **Other Accessories** | | | |
| Scale cover protection for the current range adjustment - package with 5 units | SCMP | $5 | Z4 |
| Lugs for panel mounting - package with 2 pieces (one MPW mounting) | PLMP | $0.50 | |

*Notes: [1] Maximum Amps of each Bus bar system (BBS) must not be exceeded by adding multiple MPW. Bus bar capacity is 63Amps.*
*[2] Unit list price. Product sold in multiples of 5 units.*

# Motor Protectors

MPW

## MPW65 - Product Selection



- Suitable for manual motor controller, group installation, tap conductor and combination starters[1] Type E & Type F
- Built-in protection: disconnect means, short-circuit protection, motor control and overload protection
- Short-circuit interrupting capacity up to 35kA@480Vac (10kA@600Vac)
- Fixed short-circuit release 13 x Iu
- Phase loss sensitivity
- Ambient temperature compensation -4…+140°F (-20…+60°C)

*1) When associated with line side terminal (LST65) and Trip indicator (TSB-22)*

| Maximum UL Horsepower | | | | | | Thermal Setting | Short-Circuit interruption capacity | | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Single Phase | | Three Phase | | | | | | | | | |
| 115V | 230V | 200V | 230V | 460V | 575V | [A] | 480V | 600V | | | |
| 3 | 7 1/2 | - | 15 | 25 | 30 | 32 ... 40 | 35kA | 10kA | MPW65-3-U040 | $380 | Z4 |
| - | 10 | 15 | 15 | 30 | 40 | 40 ... 50 | 35kA | 10kA | MPW65-3-U050 | $380 | |
| 5 | 10 | 20 | 20 | 50 | 60 | 50 ... 65 | 35kA | 10kA | MPW65-3-U065 | $380 | |

*Note: Horsepower ratings shown in the table are for reference only. Please refer to the Full Load Amps of the Motor for final selection*

## MPW100 - Product Selection



- Suitable for manual motor controller, group installation, tap conductor and combination starters[2] type E& type F
- Built-in protection: disconnect means, short-circuit protection, motor control and overload protection
- Short-circuit interrupting capacity up to 50kA@480Vac (10kA@600Vac)
- Fixed short-circuit release 13 x Iu
- Phase loss sensitivity
- Ambient temperature compensation -4…+140°F (-20…+60°C)

*[2] When associated with line side terminal (IB MPW100) and Trip indicator (TSB SC-11 MPW100)*

| Maximum UL Horsepower | | | | | | Thermal Setting | Short-Circuit interruption capacity | | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Single Phase | | Three Phase | | | | | | | | | |
| 115V | 230V | 200V | 230V | 460V | 575V | [A] | 480V | 600V | | | |
| 5 | 15 | 20 | 25 | 50 | 60 | 55 ... 75 | 50kA | 10kA | MPW100-3-U075 | $665 | Z4 |
| 7 1/2 | 20 | 25 | 30 | 60 | 75 | 70 ... 90 | 50kA | 10kA | MPW100-3-U090 | $720 | |
| 10 | 20 | 30 | 30 | 75 | 100 | 80 ... 100 | 50kA | 10kA | MPW100-3-U100 | $720 | |

*Note: Horsepower ratings shown in the table are for reference only. Please refer to the Full Load Amps of the Motor for final selection.*



Data is subject to change without notice.

## Accessories for MPW65 - Summary

| Description | Catalog Number | List Price | Multiplier |
|---|---|---|---|
| **Auxiliary Contact Blocks** | | | |
| 1NO&1NC auxiliary contact block front mounting - 250Vmax. | ACBF-11 | $20 | Z4 |
| 1NO&1NC auxiliary contact block left side mounting - 600Vmax. | ACBS-11 | $22 | |
| 2NO Auxiliary contact block left side mounting - 600Vmax. | ACBS-20 | $22 | |
| 2NC Auxiliary contact block left side mounting - 600Vmax. | ACBS-02 | $22 | |
| **Accessories for Combination Type-E Construction** | | | |
| Line power terminal (for MPW65-3-U040 to MPW65-3-U065) | LST65 | $85 | Z4 |
| Trip Signaling and Alarm Contact Block (1NO&1NC for Short-circuit and 1NO&1NC for Overload) | TSB-22 | $38 | |
| **Through-the-door Rotary Mechanisms** | | | |
| Rotary NEMA 1 Through the Door Mechanism - gray/black handle with 130mm shaft | RMMP65-130 | $80 | Z4 |
| Rotary NEMA 1 Through the Door Mechanism - yellow/red handle with 130mm shaft | RMMP65-130-E | $80 | |
| Rotary NEMA 1 Through the Door Mechanism - gray/black handle with 330mm shaft | RMMP65-330 | $90 | |
| Rotary NEMA 1 Through the Door Mechanism - yellow/red handle with 330mm shaft | RMMP65-330-E | $90 | |
| Rotary NEMA 4X Through the Door Mechanism - black/red handle with 130mm shaft | MRX65-130 | $120 | |
| Rotary NEMA 4X Through the Door Mechanism - yellow/red handle with 130mm shaft | MRX65-130-E | $120 | |
| Rotary NEMA 4X Through the Door Mechanism - black/red handle with 330mm shaft | MRX65-330 | $130 | |
| Rotary NEMA 4X Through the Door Mechanism - yellow/red handle with 330mm shaft | MRX65-330-E | $130 | |
| **Under Voltage and Shunt Block Releases** | | | |
| Shunt release block right side mounting - 20-24V 50/60Hz | SRMP D51 | $56 | Z4 |
| Shunt release block right side mounting - 100-127V 50/60Hz | SRMP D59 | $56 | |
| Shunt release block right side mounting - 200-240V 50/60Hz | SRMP D65 | $56 | |
| Under voltage release block right side mounting - 24V 60Hz | URMP V05 | $56 | |
| Under voltage release block right side mounting - 120V 60Hz | URMP V18 | $56 | |
| Under voltage release block right side mounting - 208V 60Hz | URMP V23 | $56 | |
| Under voltage release block right side mounting - 240V 60Hz | URMP V30 | $56 | |
| Under voltage release block right side mounting - 480V 60Hz | URMP V47 | $56 | |
| **Other Accessories** | | | |
| Scale cover protection for the current range adjustment - package with 5 units | SCMP | $5 | Z4 |
| Lugs for panel mounting - package with 2 pieces (one MPW mounting) | PLMP | $0.50 | |

## Accessories for MPW100 - Summary

| Description | Catalog Number | List Price | Multiplier |
|---|---|---|---|
| **Auxiliary Contact Blocks** | | | |
| 1NO&1NC auxiliary contact block front mounting - 250Vmax. | ACBF-11 MPW100 | $35 | Z4 |
| 1NO&1NC auxiliary contact block left side mounting - 600Vmax. | ACBS-11 MPW100 | $27[1] | |
| 2NO Auxiliary contact block left side mounting - 600Vmax. | ACBS-20 MPW100 | $27[1] | |
| 2NC Auxiliary contact block left side mounting - 600Vmax. | ACBS-02 MPW100 | $27[1] | |
| **Accessories for Combination Type-E Construction** | | | |
| Insulators | IB MPW100 | $30 | Z4 |
| Trip Signaling and Alarm Contact Block (1NO&1NC for Short-circuit and Overload) | TSB-SC-11 MPW100 | $38[1] | |
| **Through-the-door Rotary Mechanisms** | | | |
| Rotary NEMA 1 Through the Door Mechanism - gray/black handle with 115mm shaft | MR MPW100-115 | $100 | Z4 |
| Rotary NEMA 1 Through the Door Mechanism - gray/black handle with 315mm shaft | MR MPW100-315 | $115 | |
| Rotary NEMA 4X Through the Door Mechanism - gray/black handle with 130mm shaft | MRX100-130 | $130 | |
| Rotary NEMA 4X Through the Door Mechanism - yellow/red handle with 130mm shaft | MRX100-130E | $130 | |
| **Under Voltage and Shunt Block Releases** | | | |
| Shunt release block right side mounting - 120V 50/60Hz | SRMP V18 MPW100 | $56 | Z4 |
| Shunt release block right side mounting - 240-260V 60Hz | SRMP V33 MPW100 | $56 | |
| Under voltage release block right side mounting - 120V 60Hz | URMP V18 MPW100 | $56 | |
| Under voltage release block right side mounting - 240V 60Hz | URMP V33 MPW100 | $56 | |
| Under voltage release block right side mounting - 460V 60Hz | URMP V43 MPW100 | $56 | |

*Notes: [1] Unit list price. Product sold in multiples of 2 units.*

# Motor Protectors

MPW

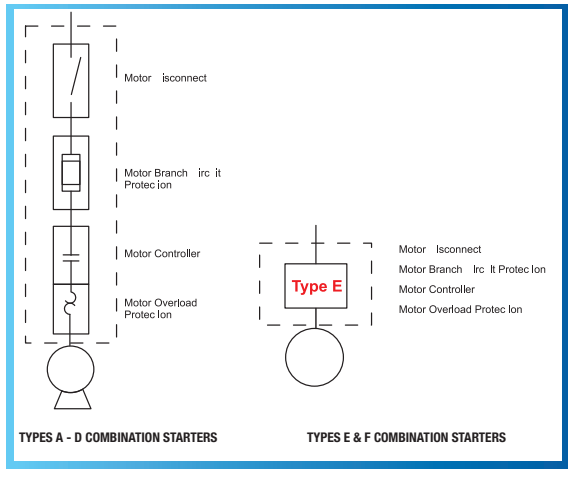
## WEG's Self Protected Combination Type-E Motor Controller with Unmatched Features and Benefits

Combination starters are the most common type of packaged motor controllers. They are called combination because of their construction and combined functions required by the US National Electric Code (NEC): Motor Disconnect, Motor Branch Circuit Protection, Motor Controller and Motor Overload Protection. UL1 currently recognizes six different types of combination starters that meet the requirements of a motor branch circuit.
Constructions Types A through D are traditional starters that use either a listed disconnect switch and fuses or a listed circuit breakers as the disconnect means and for short circuit protection. Each type uses a separate UL 508 listed motor controller and overload relay. Recently revisions on UL508 introduced the Type E and Type F starters.

| UL Combination Starter Type | Device Used for Component Function | | | |
|---|---|---|---|---|
| | Disconnected | Branch Circuit Protection | Motor Controller | Motor OL Relay |
| A | UL 98 Manual Disconnect | UL 248 Fuses | UL 508 Magnetic or Solid State Controller | UL 508 Motor Overload Relay |
| B | | UL 508 Motor Short Circuit Protector | | |
| C | UL 489 Inverse Time Circuit Breaker | | | |
| D | UL 489 Instantaneous Trip Circuit Breaker | | | |
| E | UL 508 Self-protected Combination Controller | | | |
| F | UL 508 Manual Self-protected Combination Controller | | UL 508 Magnetic or Solid State Controller | UL 508 Manual Self-Protected Combination Controller |

Type E starter is a self-protected combination motor controller that combines in a single device all the required functions of a combination starter and eliminates any additional requirements for upstream fuses or circuit breakers. These starters clear faults within their rating without sustaining damage to themselves or the rest of the system, being able to get back into operation. There are two arrangements for a Type E starter: manual (as stand-alone) and associated with a contactor. Both are submitted to the same tests sequences.
Type F starter consists of a listed manual Type E combined with a UL508 listed contactor. The difference between the two types is related to the absence of self-protected characteristic; hence, Type F has softened tests sequences allowing damages on the contactor after a fault.

Tests performed in order to fulfill the Type E requirements are considered the hardest in UL508, including short-circuit and endurance tests on the same sample. As a comparison, UL Type E exceeds the requirements for Type F and IEC60947-4-1 Coordination type 2.
WEG's self-protected combination Type E combines all of these functions within a single product for a manual operation or within a set of two products (with a listed contactor) for a remote operation. Both options must be associated with the accessories Line Side Terminal (LST25) and Tripping Signaling Block (TSB-22) to accomplish UL508/UL489 requirements for spacing (clearance and creepage) and short-circuit indication.
They are recommended for a wide range of applications where full voltage combination starters are required. Some examples are: Pumps, Industrial Washing Machines, Compressors, Blowers, Cutting Machines, Conveyors, Lumber Processing and many others.
The Manual Type E Starter is a stand-alone product – MPW series – that ranges from fractional up to 75Hp@460V motors (0.16 to 100A) with up to 100KA@480V and 50KA@600V interrupting short-circuit capability. Together with some accessories that complete this product line, the MPW series are a compact and reliable solution for starting and protecting motors.
WEG also offers an option for a remote Type E & F Starter, combining the MPW series (as a manual type E) together with a contactor from CWM Series. As this version undergoes the same tests, it has the same horse power ratings and short-circuit capabilities as the manual Type E. However, it provides remote operation and controlling of the application through the contactor's coil.
In addition to its popular line of UL enclosed starters, WEG is also providing a NEMA 4X (IP65) enclosed Type E & F Starter – ESWE & ESWF – featuring as standard a handle for disconnect means through the door and a contactor for remote operation. Provisions for control circuit transformer installation as well as pilot lights are also included.





Data is subject to change without notice.

## Manual Self-Protected Combination Motor Controller Type-E



- No need of upstream protective devices such as UL489 MCCB or UL248 fuses
- Built-in protections: disconnect means, short-circuit protection, motor control and over load protection
- Short-circuit interrupting capacity up to 100kA@480Vac (50kA@600Vac)
- Compact combination starter
- Phase loss sensitivity
- Ambient temperature compensation -4…+140°F (-20…+60°C)

### High Interruption Capacity

| Maximum UL Horsepower | | | | | | Thermal Setting | Short-Circuit Interruption Capacity | Individual Component Catalog Number[1] | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Single Phase | | Three Phase | | | | | | Manual Motor Protector | Line Side Terminal | Tripping Indicator | List Price | Multiplier |
| 115V | 230V | 200V | 230V | 460V | 575V | [A] | 480V | | | | | |
| - | - | - | - | - | - | 0.10 - 0.16 | 65kA | MPW40-3-C016 | LST25 | TSB-22 | $192 | Z4 |
| - | - | - | - | - | - | 0.16 - 0.25 | 65kA | MPW40-3-C025 | LST25 | TSB-22 | | |
| - | - | - | - | - | - | 0.25 - 0.40 | 65kA | MPW40-3-D004 | LST25 | TSB-22 | | |
| - | - | - | - | - | 1/4 | 0.40 - 0.63 | 65kA | MPW40-3-C063 | LST25 | TSB-22 | $213 | |
| - | - | - | - | 1/2 | 1/2 | 0.63 - 1.0 | 65kA | MPW40-3-U001 | LST25 | TSB-22 | | |
| - | 1/10 | 1/4 | 1/3 | 3/4 | 1 | 1.0 - 1.6 | 65kA | MPW40-3-D016 | LST25 | TSB-22 | | |
| - | 1/6 | 1/2 | 1/2 | 1 1/2 | 1 1/2 | 1.6 - 2.5 | 65kA | MPW40-3-D025 | LST25 | TSB-22 | | |
| 1/8 | 1/3 | 3/4 | 1 | 2 | 3 | 2.5 - 4.0 | 65kA | MPW40-3-U004 | LST25 | TSB-22 | | |
| 1/4 | 3/4 | 1 1/2 | 1 1/2 | 3 | 5 | 4.0 - 6.3 | 65kA | MPW40-3-D063 | LST25 | TSB-22 | | |
| 1/2 | 1 1/2 | 3 | 3 | 5 | 7 1/2 | 6.3 - 10 | 65kA | MPW40-3-U010 | LST25 | TSB-22 | | |
| 1 | 3 | 5 | 5 | 10 | 15 | 10 - 16 | 65kA | MPW40-3-U016 | LST25 | TSB-22 | $245 | |
| 1 1/2 | 3 | 5 | 7 1/2 | 15 | 15 | 16 - 20 | 50kA | MPW40-3-U020 | LST25 | TSB-22 | | |
| 2 | 3 | 7 1/2 | 7 1/2 | 15 | 20 | 20 - 25 | 50kA | MPW40-3-U025 | LST25 | TSB-22 | $275 | |
| - | 5 | 10 | 10 | 20 | 25 | 25 - 32 | 42kA | MPW40-3-U032 | LST25 | TSB-22 | $290 | |
| - | 10 | 15 | 15 | 30 | 40 | 40 ... 50 | 30kA | MPW65-3-U050 | LST65 | TSB-22 | $503 | |
| 5 | 10 | 20 | 20 | 50 | 60 | 50 ... 65 | 30kA | MPW65-3-U065 | LST65 | TSB-22 | | |
| 5 | 15 | 20 | 25 | 50 | 60 | 55 ... 75 | 50kA | MPW100-3-U075 | IB MPW100 | TSB SC-11 MPW100 | $733 | |
| 7 1/2 | 20 | 25 | 30 | 60 | 75 | 70 ... 90 | 50kA | MPW100-3-U090 | IB MPW100 | TSB SC-11 MPW100 | $788 | |
| 10 | 20 | 30 | 30 | 75 | 100 | 80 ... 100 | 50kA | MPW100-3-U100 | IB MPW100 | TSB SC-11 MPW100 | | |

*Note: Horsepower ratings shown in the table are for reference only. Please refer to the Full Load Amps of the Motor for final selection.*
*[1] Individual Component Catalog Numbers are ordered separately. Multiplier Z4.*

### Extra High Interruption Capacity

| Maximum UL Horsepower | | | | | | Thermal Setting | Short-Circuit Interruption Capacity | Individual Component Catalog Number1 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Single Phase | | Three Phase | | | | | | Manual Motor Protector | Current Limiter | Line Side Terminal | Tripping Indicator | List Price | Multiplier |
| 115V | 230V | 200V | 230V | 460V | 575V | [A] | 480V | | | | | | |
| - | - | - | - | - | - | 0.10 - 0.16 | 100kA | MPW40-3-C016 | CLT32 MPW40 | LST25 | TSB-22 | | Z4 |
| - | - | - | - | - | - | 0.16 - 0.25 | 100kA | MPW40-3-C025 | CLT32 MPW40 | LST25 | TSB-22 | $292 | |
| - | - | - | - | - | - | 0.25 - 0.40 | 100kA | MPW40-3-D004 | CLT32 MPW40 | LST25 | TSB-22 | | |
| - | - | - | - | - | 1/4 | 0.40 - 0.63 | 100kA | MPW40-3-C063 | CLT32 MPW40 | LST25 | TSB-22 | | |
| - | - | - | - | 1/2 | 1/2 | 0.63 - 1.0 | 100kA | MPW40-3-U001 | CLT32 MPW40 | LST25 | TSB-22 | | |
| - | 1/10 | 1/4 | 1/3 | 3/4 | 1 | 1.0 - 1.6 | 100kA | MPW40-3-D016 | CLT32 MPW40 | LST25 | TSB-22 | | |
| - | 1/6 | 1/2 | 1/2 | 1 1/2 | 1 1/2 | 1.6 - 2.5 | 100kA | MPW40-3-D025 | CLT32 MPW40 | LST25 | TSB-22 | $313 | |
| 1/8 | 1/3 | 3/4 | 1 | 2 | 3 | 2.5 - 4.0 | 100kA | MPW40-3-U004 | CLT32 MPW40 | LST25 | TSB-22 | | |
| 1/4 | 3/4 | 1 1/2 | 1 1/2 | 3 | 5 | 4.0 - 6.3 | 100kA | MPW40-3-D063 | CLT32 MPW40 | LST25 | TSB-22 | | |
| 1/2 | 1 1/2 | 3 | 3 | 5 | 7 1/2 | 6.3 - 10 | 100kA | MPW40-3-U010 | CLT32 MPW40 | LST25 | TSB-22 | | |
| 1 | 3 | 5 | 5 | 10 | 15 | 10 - 16 | 100kA | MPW40-3-U016 | CLT32 MPW40 | LST25 | TSB-22 | $345 | |
| 1 1/2 | 3 | 5 | 7 1/2 | 15 | 15 | 16 - 20 | 100kA | MPW40-3-U020 | CLT32 MPW40 | LST25 | TSB-22 | | |
| 2 | 3 | 7 1/2 | 7 1/2 | 15 | 20 | 20 - 25 | 100kA | MPW40-3-U025 | CLT32 MPW40 | LST25 | TSB-22 | $375 | |
| - | 5 | 10 | 10 | 20 | 25 | 25 - 32 | 100kA | MPW40-3-U032 | CLT32 MPW40 | LST25 | TSB-22 | $390 | |

*Note: Horsepower ratings shown in the table are for reference only. Please refer to the Full Load Amps of the Motor for final selection.*
*[1] Individual Component Catalog Numbers are ordered separately. Multiplier Symbol Z4.*

# Motor Protectors

MPW

## Combination Motor Controller Type-F

- No need of upstream protective devices such as UL489 MCCB or UL248 fuses
- Built-in protections: disconnect means, short-circuit protection, motor control and overload protection
- Short-circuit interrupting capacity up to 100kA@480Vac (50kA@600Vac)
- Compact combination starter
- Phase loss sensitivity
- Ambient temperature compensation -4…+140°F (-20…+60°C)
- Remote operation



(4)

### High interruption capacity

| Maximum UL Horsepower | | | | | | Thermal Setting | Short-Circuit Interruption Capacity | Individual Component Catalog Number[1] | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Single Phase | | Three Phase | | | | | | Manual Motor Protector | Line Side Terminal | Tripping Indicator | Link Module | List Price[2] | Contactor[3] | List Price[3] |
| 115V | 230V | 200V | 230V | 460V | 575V | [A] | 480V | | | | | | | |
| - | - | - | - | - | - | 0.10 -0.16 | 65kA | MPW40-3-C016 | LST25 | TSB-22 | ECCMP-40B38 | $221 | CWB9 | $72 |
| - | - | - | - | - | - | 0.16 - 0.25 | 65kA | MPW40-3-C025 | LST25 | TSB-22 | ECCMP-40B38 | | CWB9 | |
| - | - | - | - | - | - | 0.25 - 0.40 | 65kA | MPW40-3-D004 | LST25 | TSB-22 | ECCMP-40B38 | | CWB9 | |
| - | - | - | - | - | 1/4 | 0.40 - 0.63 | 65kA | MPW40-3-C063 | LST25 | TSB-22 | ECCMP-40B38 | $242 | CWB9 | |
| - | - | - | - | 1/2 | 1/2 | 0.63 - 1.0 | 65kA | MPW40-3-U001 | LST25 | TSB-22 | ECCMP-40B38 | | CWB9 | |
| - | 1/10 | 1/4 | 1/3 | 3/4 | 1 | 1.0 - 1.6 | 65kA | MPW40-3-D016 | LST25 | TSB-22 | ECCMP-40B38 | | CWB9 | |
| - | 1/6 | 1/2 | 1/2 | 1 1/2 | 1 1/2 | 1.6 - 2.5 | 65kA | MPW40-3-D025 | LST25 | TSB-22 | ECCMP-40B38 | | CWB9 | |
| 1/8 | 1/3 | 3/4 | 1 | 2 | 3 | 2.5 - 4.0 | 65kA | MPW40-3-U004 | LST25 | TSB-22 | ECCMP-40B38 | | CWB9 | |
| 1/4 | 3/4 | 1 1/2 | 1 1/2 | 3 | 5 | 4.0 - 6.3 | 65kA | MPW40-3-D063 | LST25 | TSB-22 | ECCMP-40B38 | | CWB9 | |
| 1/2 | 1 1/2 | 3 | 3 | 5 | 7 1/2 | 6.3 - 10 | 65kA | MPW40-3-U010 | LST25 | TSB-22 | ECCMP-40B38 | | CWB9 | |
| 1 | 3 | 5 | 5 | 10 | 15 | 10 - 16 | 65kA | MPW40-3-U016 | LST25 | TSB-22 | ECCMP-40B38 | $270 | CWB18 | $103 |
| 1 1/2 | 3 | 5 | 7 1/2 | 15 | 15 | 16 - 20 | 50kA | MPW40-3-U020 | LST25 | TSB-22 | ECCMP-40B38 | | CWB18 | |
| 2 | 3 | 7-1/2 | 7-1/2 | 15 | 15 | 20-25 | 50kA | MPW40-3-U020 | LST25 | TSB-22 | ECCMP-40B38 | $300 | CWB25 | $118 |
| 2 | 3 | 7 1/2 | 7 1/2 | 15 | 20 | 25 - 32 | 42kA | MPW40-3-U025 | LST25 | TSB-22 | ECCMP-40B38 | $315 | CWB32 | $140 |
| - | 5 | 10 | 10 | 20 | 25 | 25 - 32 | 42kA | MPW40-3-U032 | LST25 | TSB-22 | ------- | $290 | CWM40 | $164 |
| - | 10 | 15 | 15 | 30 | 40 | 40 ... 50 | 30kA | MPW65-3-U050 | LST65 | TSB-22 | ------- | $503 | CWM65 | $215 |
| 5 | 10 | 20 | 20 | 50 | 60 | 50 ... 65 | 30kA | MPW65-3-U065 | LST65 | TSB-22 | ------- | | CWM80 | $261 |
| 5 | 15 | 20 | 25 | 50 | 60 | 55 ... 75 | 50kA | MPW100-3-U075 | IB MPW100 | TSB SC-11 MPW100 | ------- | $733 | CWM95 | $294 |
| 7 1/2 | 20 | 25 | 30 | 60 | 75 | 70 ... 90 | 50kA | MPW100-3-U090 | IB MPW100 | TSB SC-11 MPW100 | ------- | $708 | CWM95 | |
| 10 | 20 | 30 | 30 | 75 | 100 | 80 ... 100 | 50kA | MPW100-3-U100 | IB MPW100 | TSB SC-11 MPW100 | ------- | | CWM105 | $393 |

*Note: Horsepower ratings shown in the table are for reference only. Please refer to the Full Load Amps of the Motor for final selection.*

*[1] Individual Component Catalog Numbers are ordered separately.*

*[2] Multiplier Symbol Z4*

*[3] Multiplier Symbol Z1*

*[4] For Link Module, see accessories*

### Extra-High interruption capacity

| Maximum UL Horsepower | | | | | | Thermal Setting | Short-Circuit Interruption Capacity | Individual Component Catalog Number[1] | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Single Phase | | Three Phase | | | | | | Manual Motor Protector | Current Limiter | Line Side Terminal | Link Module | Tripping Indicator | List Price[2] | Contactor[3] | List Price[3] |
| 115V | 230V | 200V | 230V | 460V | 575V | [A] | 480V | | | | | | | | |
| - | - | - | - | - | - | 0.10 - 0.16 | 100kA | MPW40-3-C016 | CLT32 MPW40 | LST25 | ECCMP-40B38 | TSB-22 | $321 | CWB9 | $72 |
| - | - | - | - | - | - | 0.16 - 0.25 | 100kA | MPW40-3-C025 | CLT32 MPW40 | LST25 | ECCMP-40B38 | TSB-22 | | CWB9 | |
| - | - | - | - | - | - | 0.25 - 0.40 | 100kA | MPW40-3-D004 | CLT32 MPW40 | LST25 | ECCMP-40B38 | TSB-22 | | CWB9 | |
| - | - | - | - | - | 1/4 | 0.40 - 0.63 | 100kA | MPW40-3-C063 | CLT32 MPW40 | LST25 | ECCMP-40B38 | TSB-22 | $342 | CWB9 | |
| - | - | - | - | 1/2 | 1/2 | 0.63 - 1.0 | 100kA | MPW40-3-U001 | CLT32 MPW40 | LST25 | ECCMP-40B38 | TSB-22 | | CWB9 | |
| - | 1/10 | 1/4 | 1/3 | 3/4 | 1 | 1.0 - 1.6 | 100kA | MPW40-3-D016 | CLT32 MPW40 | LST25 | ECCMP-40B38 | TSB-22 | | CWB9 | |
| - | 1/6 | 1/2 | 1/2 | 1 1/2 | 1 1/2 | 1.6 - 2.5 | 100kA | MPW40-3-D025 | CLT32 MPW40 | LST25 | ECCMP-40B38 | TSB-22 | | CWB9 | |
| 1/8 | 1/3 | 3/4 | 1 | 2 | 3 | 2.5 - 4.0 | 100kA | MPW40-3-U004 | CLT32 MPW40 | LST25 | ECCMP-40B38 | TSB-22 | | CWB9 | |
| 1/4 | 3/4 | 1 1/2 | 1 1/2 | 3 | 5 | 4.0 - 6.3 | 100kA | MPW40-3-D063 | CLT32 MPW40 | LST25 | ECCMP-40B38 | TSB-22 | | CWB9 | |
| 1/2 | 1 1/2 | 3 | 3 | 5 | 7 1/2 | 6.3 - 10 | 100kA | MPW40-3-U010 | CLT32 MPW40 | LST25 | ECCMP-40B38 | TSB-22 | | CWB9 | |
| 1 | 3 | 5 | 5 | 10 | 15 | 10 - 16 | 100kA | MPW40-3-U016 | CLT32 MPW40 | LST25 | ECCMP-40B38 | TSB-22 | $400 | CWB18 | |
| 1 1/2 | 3 | 5 | 7 1/2 | 15 | 15 | 16 - 20 | 100kA | MPW40-3-U016 | CLT32 MPW40 | LST25 | ECCMP-40B38 | TSB-22 | | CWB18 | $103 |
| 2 | 3 | 7-1/2 | 7-1/2 | 15 | 15 | 20-25 | 100kA | MPW40-3-U025 | CLT32 MPW40 | LST25 | ECCMP-40B38 | TSB-22 | $415 | CWB25 | $118 |
| 2 | 3 | 7 1/2 | 7 1/2 | 15 | 20 | 20 - 25 | 100kA | MPW40-3-U025 | CLT32 MPW40 | LST25 | ECCMP-40B38 | TSB-22 | | CWB32 | $140 |
| - | 5 | 10 | 10 | 20 | 25 | 25 - 32 | 100kA | MPW40-3-U032 | CLT32 MPW40 | LST25 | ------ | TSB-22 | $390 | CWM40 | $164 |

*Note: Horsepower ratings shown in the table are for reference only. Please refer to the Full Load Amps of the Motor for final selection.*

*[1] Individual Component Catalog Numbers are ordered separately.*

*[2] Multiplier Symbol Z4*

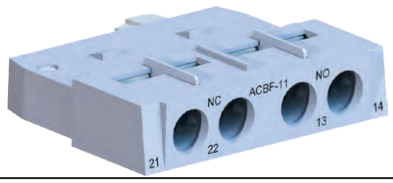
*[3] Multiplier Symbol Z1*



Data is subject to change without notice.

# Accessories

## Front Mounting Auxiliary Contact Block - ACBF

| For use with | | Auxiliary Contacts NO | Auxiliary Contacts NC | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|---|
| MPW18<br>MPW40[1]<br>MPW65 |  | 1 | 1 | ACBF-11 | $20 | Z4 |
| MPW100 | | | | ACBF-11 MPW100 | $35 | Z4 |

## Left side Auxiliary Contact Block - ACBS

| For use with | | Auxiliary Contacts NO | Auxiliary Contacts NC | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|---|
| MPW18<br>MPW40[1]<br>MPW65[1] |  | 1 | 1 | ACBS-11 | $22 | Z4 |
| | | 2 | - | ACBS-20 | | |
| | | - | 2 | ACBS-02 | | |
| MPW100 | | 1 | 1 | ACBS-11 MPW100 | $27[2] | Z4 |
| | | 2 | - | ACBS-20 MPW100 | | |
| | | - | 2 | ACBS-02 MPW100 | | |

*Note:*

*[1] The following accessories can be assembled at the same time: 1 ACBF + 1 URMP/SRMP + 1 TSB-22 or 1 ACBS + 1 URMP/SRMP + 1 TSB-22*

*[2] Unit list price. Product sold in multiples of 2 units*

# Motor Protectors

MPW

## Accessories

### Trip Signalling Block - TSB-22

| For use with | | Description | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|
| MPW40 [1]<br>MPW65 [1] |  | - Equipped with 2 auxiliary contacts (1NO + 1NC) for overload trip signalling and 2 other auxiliary contacts (1NO + 1NC) for short-circuit trip signalling.<br>- To reset the MPW after a short-circuit, the blue flag must be manually reset after the cause of the failure has been solved.<br>- Left side auxiliary contacts can be assembled together with the trip signalling block.<br>- Left side assembly only | TSB-22 | $38 | Z4 |
| MPW100 | | - Equipped with 2 auxiliary contacts (1NO + 1NC) for short-circuit trip signalling.<br>- Left side assembly only | TSB SC-11 MPW100 | $38 [2] | Z4 |

### Undervoltage Release - URMP

| For use with | | Voltage | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|
| MPW18 [1]<br>MPW40 [1]<br>MPW65 [1] |  | 208V 60Hz<br>24V 50/60Hz<br>400-415V 50Hz / 480V 60Hz<br>110V 50Hz / 120V 60Hz<br>240V 60Hz | URMP V23<br>URMP D02<br>URMP V47<br>URMP V18<br>URMP V30 | $56 | Z4 |
| MPW100 | Note:<br>- Operating voltage > 0,85 x Ue<br>- Non operating voltage 0,35...0,7 x Ue | 110V 50Hz / 120V 60Hz<br>220-230V 50Hz / 240V 60Hz<br>380-400V 50Hz / 460V 60Hz | URMP V18 MPW100<br>URMP V33 MPW100<br>URMP V43 MPW100 | $56 | Z4 |

*Note: [1] The following accessories can be assembled at the same time: 1 ACBF + 1 URMP/SRMP + 1 TSB-22 -B or 1 ACBS + 1 URMP/SRMP + 1 TSB-22-B*
*[2] Unit list price. Product sold in multiples of 2 units*

### Shunt Release - SRMP

| For use with | | Voltage | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|
| MPW18 [1]<br>MPW40 [1]<br>MPW65 [1] |  | 20-24V 50/60Hz<br>100-127V 50/60Hz<br>200-240V 50/60Hz | SRMP D51<br>SRMP D59<br>SRMP D65 | $56 | Z4 |
| MPW100 | Note: - Operating voltage > 0.7 x Ue | 110V 50Hz / 120V 60Hz<br>220-230V 50Hz / 240-260V 60Hz | SRMP V18 MPW100<br>SRMP V33 MPW100 | $56 | Z4 |

*Note: [1] The following accessories can be coupled at the same time:*
*1 ACBF + 1 URMP/SRMP + 1 TSB or 1 ACBS + 1 URMP/SRMP + 1 TSB*



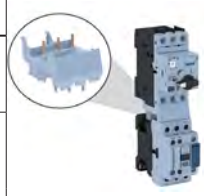
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## Accessories

### Link modules for manual motor protector assembly + contactors – ECCMP

| For use with | | Description | Contactors | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|---|
| MPW18 |  | - For direct connection (electrical and mechanical) of motor circuit breakers to contactors.<br>Note:<br>- Not applicable to CWM contactors with DC coils. | CWC07…16<br>CWC025 | ECCMP-C016<br>ECCMP-C025 | $20 | Z4 |
| MPW40 | | | CWC07…16<br>CWM9…25<br>CWM32...40 | ECCMP-C0<br>ECCMP-25<br>ECCMP-32 | | |

### Connector Links for MPW18/40 & CWB Contactors

| For use with | | Description | Contactors | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|---|
| MPW18 |  | For direct connection (electrical and mechanical) of motor circuit breakers to contactors. | CWB9...38 AC coil | ECCMP-18B38 | $20 | Z4 |
| MPW40 | | | CWB9...38 AC coil | ECCMP-40B38 | $25 | |
| | | | CWB9...38 DC coil | ECCMP-40B38DC | | |

### Standard IEC Enclosure - PE

| For use with | | Description | Terminals | Handle color | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|---|---|
| MPW18 |  | - Degree of protection: IP66<br>- Two cable entry knockouts, top and bottom<br>- Allows installing: MPW18 + ACBF11/PL lamps + ACBS | With neutral and ground terminals | - | PE66GN | $45 | Z4 |
| MPW40 |  <br>  | - Degree of protection: IP55<br>- Allows installing: MPW40 + ACBF11/PL lamps + ACBS<br>- Two cable entry knockouts, top and bottom<br>- Handle can be locked with up to 3 padlocks at OFF position. | With neutral and ground terminals | Black | PE55GN | $45 | Z4 |
| | | | | Red with yellow background | PE55GNE | $45 | |

# Motor Protectors

MPW

## Accessories

### Through-the-door Rotary Handle - RMMP and MRX

| For use with | | Description | Handle color | Catalog Number | Price List | Multiplier |
|---|---|---|---|---|---|---|
| MPW40 |  | - Degree of protection IP55/NEMA1;<br>- Shows MPW position "I"(ON) or "O"(OFF);<br>- Panel door can only be opened in OFF position;<br>- Adjustable shaft length. There are 2 standard shaft sizes: 130-155mm (Model 130) and 330-355mm (Model 330). To assemble the handle on the MPW the shaft must have a length of at least 80mm;<br>- Up to 3 padlocks can be used in the OFF position. This blocks MPW operation and panel door opening;<br>- Handle can be mounted on panels with thickness of 1 to 5mm;<br>- Handle can be assembled even with MPW turned in 90º position | Gray/ Black | RMMP-130 | $70 | |
| | | | | RMMP-330 | $85 | |
| | | | Red/ Yellow | RMMP-130E | $70 | |
| | | | | RMMP-330E | $85 | |
| MPW65 | | | Gray/ Black | RMMP65-130 | $60 | |
| | | | | RMMP65-330 | $70 | |
| | | | Red/ Yellow | RMMP65-130E | $60 | |
| | | | | RMMP65-330E | $70 | |
| MPW100 |  | - Degree of protection NEMA1;<br>- Shows MPW position "I"(ON) or "O"(OFF);<br>- Panel door can be opened at ON position (thermometry) by defeating mechanism;<br>- Adjustable shaft length. There are 2 standard shaft sizes: 115mm (Model 115) and 315mm (Model 315). To assemble the handle to the MPW, the shaft must have a min. length of at least 80mm;<br>- Up to 3 padlocks can be used in the OFF position. This blocks the MPW operation and opens panel door. | Gray/ Black | MR MPW100-115 | $100 | Z4 |
| | | | Gray/ Black | MR MPW100-315 | $115 | |
| MPW40 |  | - Panel door can be opened in ON position (thermometry) by defeating mechanism.<br>- Degree of protection: IP65/NEMA 4X<br>- Shows MPW position "I"(ON) or "O"(OFF)<br>- Adjustable shaft length. There are 2 standard shaft sizes: 130-155mm (Model 130) and 330-355mm (Model 330). To assemble the handle ON the MPW the shaft must have a length of at least 80mm<br>- Up to 3 padlocks can be used in the OFF position. This blocks MPW operation and opens panel door. Handle can be mounted on panels with thickness of 1 to 5mm | Gray/ Black | MRX-130 | $105 | |
| | | | | MRX-330 | $115 | |
| | | | Red/ Yellow | MRX-130E | $105 | |
| | | | | MRX-330E | $115 | |
| MPW65 | | | Gray/ Black | MRX65-130 | $120 | |
| | | | | MRX65-330 | $130 | |
| | | | Red/ Yellow | MRX65-130E | $120 | |
| | | | | MRX65-330E | $130 | |
| MPW100 | | | Gray/ Black | MRX100-130-E | $130 | |
| | | | Red/ Yellow | MRX100-130-E | $130 | |



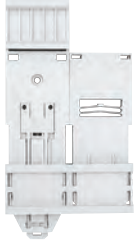
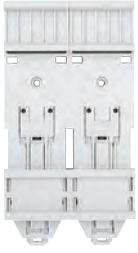
Data is subject to change without notice.

# Accessories

## Large IEC Enclosure - LPE55

| For use with | | Description | Terminals | Handle color | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|---|---|
| MPW40 |  | - Degree of protection: IP55<br>- For use with MPW40 + URMP/SRMP + ACBF11 + ACBS + PL lamps<br>- Two cable entry knockouts. top and bottom<br>- Handle can be locked with up to 3 padlocks at OFF position. | With neutral and ground terminals | Black | LPE55GN | $55 | Z4 |
| | | | | Red with yellow background | LPE55GN-E | | |

## Manual Motor Protector mounting adapter - MA

| For use with | MPW40 | Description | Contactors | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|---|
| MPW40 |  | Used for direct on line starters<br>45mm width | CWC07...25<br>CWM9…CWM25 | MA45DOL | $40 | Z4 |
| MPW40 |  | Used for reversing starters<br>90mm width | 2 x CWC07...25<br>2x CWM9...CWM25 | MA90RVS | $50 | |
| MPW40 |  | Used for star-delta motor starters<br>90mm width | 2 x CWC07...25<br>2x CWM9…CWM25 | MA90SDS | $85 | |

# Motor Protectors

MPW

## Accessories

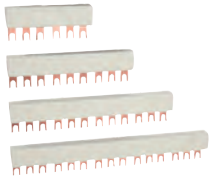
### Insulators - IB

| For use with | | Description | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|
| MPW100 |  | Insulators for increasing creepage distance and clearances according to UL requirements. | IB MPW100 | $30 | Z4 |

### Three-phase feeder terminal – FTBBS and LST25

| For use with | | Description | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|
| MPW18<br>MPW40 |  | - For feeding the feeder terminals;<br>- Rated insulation voltage: 690VAC;<br>- $I_e$: 63A;<br>- Terminals: 6-25mm² rigid wire and 6-16mm² flexible wire with terminal. | FTBBS | $35 | Z4 |
| MPW40 |  | - Block module for " Type E" Combination motor Controller" in accordance with UL (LST25+MPW+TSB-22-B);<br>- Rated insulation voltage: 690VAC;<br>- $I_e$: 63A.<br>- Terminals: 8-20AWG. | LST25 | $42 | |

### Three-phase feeder terminals for MPW without side auxiliary contacts – BBS45

| For use with | | Description | Numbers of MPW | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|---|
| MPW18<br>MPW40 |  | - For parallel blocking of side-by-side mounted MPW, without side auxiliary contacts;<br>- Enables the use of frontal auxiliary contact block ACBF-11;<br>- $U_e$: 690VAC<br>- $I_e$: 63A | 2 | BBS45-2 | $32 | Z4 |
| | | | 3 | BBS45-3 | $35 | |
| | | | 4 | BBS45-4 | $45 | |
| | | | 5 | BBS45-5 | $60 | |

### Three-phase feeder terminals for MPW with side auxiliary contacts – BBS54

| For use with | | Description | Numbers of MPW | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|---|
| MPW18<br>MPW40 |  | - For parallel blocking of side-by-side mounted MPW;<br>- Enables the use of frontal auxiliary contact block ACBF-11 and side auxiliary contact block ACBS;<br>- $U_e$: 690VAC;<br>- $I_e$: 63A. | 2 | BBS54-2 | $32 | Z4 |
| | | | 3 | BBS54-3 | $35 | |
| | | | 4 | BBS54-4 | $45 | |
| | | | 5 | BBS54-5 | $60 | |



Data is subject to change without notice.

## Accessories

### Current Limiter - CLT32

| For use with | | Description | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|
| MPW40 |  | - For protecting electrical circuits where extra high short-circuit breaking capacity is required: 100kA @ 480VAC<br><br>Note: This accessory must be used together with a MPW motor protector. | CLT32 MPW40 | $100 | Z4 |

### Shround for unused terminals – CSD

| For use with | | Description | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|
| BBS45<br>BBS54 |  | Protection against direct contact on unused terminals on energized BBS45 and BBS54 three-phase feeder terminals. | CSD | $10[1] | Z4 |

### Scale Cover - SCMP

| For use with | | Description | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|
| MPW18<br>MPW40<br>MPW65 |  | Protects the current adjustment dial against direct contact while enabling the set current to be viewed. | SCMP | $5 | Z4 |

### Push-in-lugs - PLMP

| For use with | | Description | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|
| MPW18<br>MPW40<br>MPW65 |  | For direct assembly of motor protective circuit breaker onto any surface using screws. | PLMP | $0.50 | Z4 |

Notes: [1] Unit list price. Product sold in multiples of 5 units.

# Motor Protectors

MPW

## MPW18 Technical Data

### General Ratings

| Model | Units | | MPW18-3-C016 | MPW18-3-C025 | MPW18-3-D004 | MPW18-3-C063 | MPW18-3-U001 | MPW18-3-D016 | MPW18-3-D025 |
|---|---|---|---|---|---|---|---|---|---|
| **Standards** | | | Devices according to International Standards IEC 60947-1 / 60947-4-1, European Standards EN 60947-1 / 60947-4-1, Underwriters Laboratories - UL 508; CSA C.22.2/14; VDE 0660/102 | | | | | | |
| Current Setting Range | | [A] | 0.10 - 0.16 | 0.16 - 0.25 | 0.25 - 0.40 | 0.40 - 0.63 | 0.63 - 1.0 | 1.0 - 1.6 | 1.6 - 2.5 |
| Rated Thermal Current Ith | | [A] | 0.16 | 0.25 | 0.40 | 0.63 | 1.0 | 1.6 | 2.5 |
| **Rated Insulation Voltage Ui** | | | | | | | | | |
| Acc. IEC; VDE 0660 | | [V] | 690 | | | | | | |
| Acc. UL; CSA | | [V] | 600 | | | | | | |
| **Rated Operating Voltage Ue** | | | | | | | | | |
| Acc. IEC; VDE 0660 | | [V] | 690 | | | | | | |
| Acc. UL; CSA | | [V] | 600 | | | | | | |
| **Rated Impulse Voltage Uimp** | | | | | | | | | |
| Acc. IEC60947-1 | | [kV] | 6 | | | | | | |
| Rated Operating Frequency | | [Hz] | 50/60 | | | | | | |
| Overvoltage Category | | | III | | | | | | |
| Pollution Degree | | | 3 | | | | | | |
| **Utilization Category** | | | | | | | | | |
| IEC 60947-2 (Motor Protector) | | | A | | | | | | |
| IEC 60947-4-1 (Motor Starter) | | | AC-3 | | | | | | |
| **Lifespan** | | | | | | | | | |
| Mechanical | | [ops.] | 100,000 | | | | | | |
| Electrical (Ie max.) | | [ops.] | 100,000 | | | | | | |
| Switching Rate (motor starts) | AC-3 | [ops/hr] | 15 | | | | | | |
| **Ambient Temperature** | | | | | | | | | |
| Storage | | [°C (°F)] | -50 to +80 (-58 to +176) | | | | | | |
| Operating | | [°C (°F)] | -20 to +60 (-4 to +140) | | | | | | |
| Ambient Temperature Compensation | | [°C (°F)] | -20 to +60 (-4 to +140) | | | | | | |
| Climatic Proofing | | | IEC 60068-2-3 / IEC 60068-2-30 | | | | | | |
| **Altitude** | | | | | | | | | |
| Up to 2,000m (6,600ft) | | | Nominal Values (for higher altitudes refer to page 122 | | | | | | |
| Degree of protection | | | IP20 | | | | | | |
| **Resistance to Shock** | | | | | | | | | |
| Acc. IEC 60068-2-27 | | [g] | 15 | | | | | | |
| Resistance to Vibration | | | IEC 68-2 | | | | | | |
| **Protection against direct contact** | | | | | | | | | |
| Acc. IEC 536; DIN VDE 0106 Part 100 | | | Finger and back of hand proof | | | | | | |
| Phase Failure Sensitivity Protection | | | Yes | | | | | | |
| Overload Protection Characteristics | x Iu | [A] | 0.6 - 1 | | | | | | |
| Magnetic Release | x Iu | [A] | 13 | | | | | | |
| Overload Trip Class | | | 10 | | | | | | |
| **Total Power Loss Pv** | | | | | | | | | |
| At rated load operating temperature | | [W] | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| Weight | | [kg] | 0.30 | | | | | | |
| | | [lb] | 0.70 | | | | | | |
| Type of Terminal | | | Flat Type | | | | | | |
| Screw Driver | | | Philips #2 | | | | | | |
| **Terminal Capacity** | | | | | | | | | |
| Solid - Stranded | [mm2] | [AWG] | Refer to table on page 121 | | | | | | |
| Tightening Torque | N.m) | lb.in | 1.2 - 1.7 (11 - 16) | | | | | | |
| Mounting Position | | | Any Position | | | | | | |

UL File No. E172121



Data is subject to change without notice.

# MPW18 Technical Data

## General Ratings

| TYPE | Units | | MPW18-3-U004 | MPW18-3-D063 | MPW18-3-U010 | MPW18-3-U016 | MPW-3-U018 |
|---|---|---|---|---|---|---|---|
| **Standards** | | | Devices according to International Standards IEC 60947-1 / 60947-4-1, European Standards EN 60947-1 / 60947-4-1, Underwriters Laboratories - UL 508; CSA C.22.2/14; VDE 0660/102 | | | | |
| Current Setting Range | | [A] | 2.5 - 4.0 | 4.0 - 6.3 | 6.3 - 10 | 10 - 16 | 12-18 |
| Rated Thermal Current Ith | | [A] | 4.0 | 6.3 | 10 | 16 | 18 |
| **Rated Insulation Voltage Ui** | | | | | | | |
| Acc. IEC; VDE 0660 | | [V] | 690 | | | | |
| Acc. UL; CSA | | [V] | 600 | | | | |
| **Rated Operating Voltage Ue** | | | | | | | |
| Acc. IEC; VDE 0660 | | [V] | 690 | | | | |
| Acc. UL; CSA | | [V] | 600 | | | | |
| **Rated Impulse Voltage Uimp** | | | | | | | |
| Acc. IEC60947-1 | | [kV] | 6 | | | | |
| Rated Operating Frequency | | [Hz] | 50/60 | | | | |
| Overvoltage Category | | | III | | | | |
| Pollution Degree | | | 3 | | | | |
| **Utilization Category** | | | | | | | |
| IEC 60947-2 (Motor Protector) | | | A | | | | |
| IEC 60947-4-1 (Motor Starter) | | | AC-3 | | | | |
| **Lifespan** | | | | | | | |
| Mechanical | | [ops.] | 100,000 | | | | |
| Electrical (Ie max.) | | [ops.] | 100,000 | | | | |
| Switching Rate (motor starts) | AC-3 | [ops/hr] | 15 | | | | |
| **Ambient Temperature** | | | | | | | |
| Storage | | [oC (oF)] | -50 to +80 (-58 to +176) | | | | |
| Operating | | [oC (oF)] | -20 to +60 (-4 to +140) | | | | |
| Ambient Temperature Compensation | | [oC (oF)] | -20 to +60 (-4 to +140) | | | | |
| Climatic Proofing | | | IEC 60068-2-3 / IEC 60068-2-30 | | | | |
| **Altitude** | | | | | | | |
| Up to 2,000m (6,600ft) | | | Nominal Values (for higher altitudes refer to page 122 | | | | |
| Degree of protection | | | IP20 | | | | |
| **Resistance to Shock** | | | | | | | |
| Acc. IEC 60068-2-27 | | [g] | 15 | | | | |
| Resistance to Vibration | | | IEC 68-2 | | | | |
| **Protection against direct contact** | | | | | | | |
| Acc. IEC 536; DIN VDE 0106 Part 100 | | | Finger and back of hand proof | | | | |
| Phase Failure Sensitivity Protection | | | Yes | | | | |
| Overload Protection Characteristics | x Iu | [A] | 0.6 - 1 | | | | |
| Magnetic Release | x Iu | [A] | 12 | | | | |
| Overload Trip Class | | | 10 | | | | |
| **Total Power Loss Pv** | | | | | | | |
| At rated load operating temperature | | [W] | 6 | 6 | 6 | 6 | 6 |
| Weight | | [kg] | 0.3 | | | | |
| | | [lb] | 0.7 | | | | |
| Type of Terminal | | | Flat Type | | | | |
| Screw Driver | | | Philips #2 | | | | |
| **Terminal Capacity** | | | | | | | |
| Solid - Stranded | [mm2] | [AWG] | Refer to table on page 121 | | | | |
| Tightening Torque | N.m) | lb.in | 1.2 - 1.7 (11 - 16) | | | | |
| Mounting Position | | | Any Position | | | | |

# Motor Protectors

MPW

## MPW18 Technical Data

### Power Contact Ratings

| TYPE UL/CSA DATA | Voltage | Units | MPW18-3-C016 | MPW18-3-C025 | MPW18-3-D004 | MPW18-3-C063 | MPW18-3-U001 | MPW18-3-D016 | MPW18-3-D025 |
|---|---|---|---|---|---|---|---|---|---|
| Rated Operational Current Ie | | [A] | 0.16 | 0.25 | 0.40 | 0.63 | 1.0 | 1.6 | 2.5 |
| Magnetic Release Current | | [A] | 2 | 3 | 5 | 8 | 13 | 21 | 33 |
| **Max. Short Circuit Current** | | | | | | | | | |
| | 480V | [kA] | | | | 50 | | | |
| | 600V | [kA] | | | | 10 | | | |
| **Motor Load, 1-phase** | | | | | | | | | |
| | 115V | [HP] | - | - | - | - | - | - | - |
| | 230V | [HP] | - | - | - | - | - | 1/10 | 1/6 |
| **Motor Load, 3-phase** | | | | | | | | | |
| | 200V | [HP] | - | - | - | - | - | 1/4 | 1/2 |
| | 230V | [HP] | - | - | - | - | - | 1/3 | 1/2 |
| | 460V | [HP] | - | - | - | - | 1/2 | 3/4 | 1 1/2 |
| | 575V | [HP] | - | - | - | 1/4 | 1/2 | 1 | 1 1/2 |
| **Max. Rated Current of Protection Device for Group Installation** | | | | | | | | | |
| | Fuse or MCCB | [A] | 125 | 125 | 125 | 125 | 125 | 125 | 125 |

**IEC DATA**

| TYPE UL/CSA DATA | Voltage | Units | MPW18-3-C016 | MPW18-3-C025 | MPW18-3-D004 | MPW18-3-C063 | MPW18-3-U001 | MPW18-3-D016 | MPW18-3-D025 |
|---|---|---|---|---|---|---|---|---|---|
| Rated Operational Current Ie | | [A] | 0.16 | 0.25 | 0.4 | 0.63 | 1 | 1.6 | 2.5 |
| Magnetic Release Current | | [A] | 2 | 3 | 5 | 8 | 13 | 21 | 33 |
| **Back-Up Fuses** | | | | | | | | | |
| gL/gG | 220/240V | [A] | - | - | - | - | - | - | - |
| | 380/400V | [A] | - | - | - | - | - | - | - |
| | 415/440V | [A] | - | - | - | - | - | - | - |
| | 500V | [A] | - | - | - | - | - | - | - |
| | 660/690V | [A] | - | - | - | - | - | - | 25 |
| **Ultimate Short Circuit Breaking Capacity** | | | | | | | | | |
| Icu | 220/240V | [kA] | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| | 380/400V | [kA] | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| | 415/440V | [kA] | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| | 500V | [kA] | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| | 660/690V | [kA] | 100 | 100 | 100 | 100 | 100 | 100 | 8 |
| **Rated Service Short Circuit Breaking Capacity** | | | | | | | | | |
| Ics | 220/240V | [kA] | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| | 380/400V | [kA] | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| | 415/440V | [kA] | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| | 500V | [kA] | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| | 660/690V | [kA] | 100 | 100 | 100 | 100 | 100 | 100 | 8 |



Data is subject to change without notice.

# MPW18 Technical Data

## Power Contact Ratings

| TYPE UL/CSA DATA | Voltage | Units | MPW18-3-U004 | MPW18-3-D063 | MPW18-3-U010 | MPW18-3-U016 | MPW18-3-U018 |
|---|---|---|---|---|---|---|---|
| Rated Operational Current Ie | | [A] | 4.0 | 6.3 | 10 | 16 | 18 |
| Magnetic Release Current | | [A] | 52 | 82 | 130 | 208 | - |
| **Max. Short Circuit Current** | | | | | | | |
| | 480V | [kA] | 50 | 50 | 50 | 30 | 30 |
| | 600V | [kA] | 10 | 10 | 5 | 5 | 5 |
| **Motor Load, 1-phase** | | | | | | | |
| | 115V | [HP] | 1/8 | 1/4 | 1/2 | 1 | 1 |
| | 230V | [HP] | 1/3 | 3/4 | 1 1/2 | 3 | 3 |
| **Motor Load, 3-phase** | | | | | | | |
| | 200V | [HP] | 3/4 | 1 1/2 | 3 | 3 | 5 |
| | 230V | [HP] | 1 | 1 1/2 | 3 | 5 | 5 |
| | 460V | [HP] | 2 | 5 | 7 1/2 | 10 | 10 |
| | 575V | [HP] | 3 | 5 | 10 | 15 | 15 |
| **Max. Rated Current of Protection Device for Group Installation** | | | | | | | |
| | Fuse or MCCB | [A] | 125 | 125 | 125 | 160 | 160 |

## IEC DATA

| TYPE UL/CSA DATA | Voltage | Units | MPW18-3-U004 | MPW18-3-D063 | MPW18-3-U010 | MPW18-3-U016 | MPW18-3-U018 |
|---|---|---|---|---|---|---|---|
| Rated Operational Current Ie | | [A] | 4 | 6.3 | 10 | 16 | 18 |
| Magnetic Release Current | | [A] | 52 | 82 | 130 | 208 | 234 |
| **Back-Up Fuses** | | | | | | | |
| gL/gG | 220/240V | [A] | - | - | - | - | - |
| | 380/400V | [A] | - | - | 100 | 100 | 100 |
| | 415/440V | [A] | - | - | 80 | 80 | 80 |
| | 500V | [A] | - | - | 63 | 80 | 80 |
| | 660/690V | [A] | 35 | 50 | 50 | 63 | 80 |
| **Ultimate Short Circuit Breaking Capacity** | | | | | | | |
| Icu | 220/240V | [kA] | 100 | 100 | 100 | 100 | 100 |
| | 380/400V | [kA] | 100 | 100 | 50 | 10 | 10 |
| | 415/440V | [kA] | 100 | 100 | 50 | 10 | 10 |
| | 500V | [kA] | 100 | 100 | 10 | 10 | 10 |
| | 660/690V | [kA] | 8 | 8 | 5 | 4 | 4 |
| **Rated Service Short Circuit Breaking Capacity** | | | | | | | |
| Ics | 220/240V | [kA] | 100 | 100 | 100 | 100 | 100 |
| | 380/400V | [kA] | 100 | 100 | 10 | 10 | 10 |
| | 415/440V | [kA] | 100 | 100 | 10 | 10 | 10 |
| | 500V | [kA] | 100 | 100 | 10 | 10 | 8 |
| | 660/690V | [kA] | 8 | 8 | 5 | 3 | 3 |

# Motor Protectors

MPW

## MPW40 Technical Data

### General Ratings

| TYPE | Units | MPW40-3-C016 | MPW40-3-C025 | MPW40-3-D004 | MPW40-3-C063 | MPW40-3-U001 | MPW40-3-D016 | MPW40-3-D025 |
|---|---|---|---|---|---|---|---|---|
| Standards | | Devices according to International Standards IEC 60947-1 / 60947-4-1, European Standards EN 60947-1 / 60947-4-1, Underwriters Laboratories - UL 508; CSA C.22.2/14; VDE 0660/102 | | | | | | |
| Current Setting Range | [A] | 0.10 - 0.16 | 0.16 - 0.25 | 0.25 - 0.40 | 0.40 - 0.63 | 0.63 - 1.0 | 1.0 - 1.6 | 1.6 - 2.5 |
| Rated Thermal Current Ith | [A] | 0.16 | 0.25 | 0.40 | 0.63 | 1.0 | 1.6 | 2.5 |
| **Rated Insulation Voltage Ui** | | | | | | | | |
| Acc. IEC; VDE 0660 | [V] | 690 | | | | | | |
| Acc. UL; CSA | [V] | 600 | | | | | | |
| **Rated Operating Voltage Ue** | | | | | | | | |
| Acc. IEC; VDE 0660 | [V] | 690 | | | | | | |
| Acc. UL; CSA | [V] | 600 | | | | | | |
| **Rated Impulse Voltage Uimp** | | | | | | | | |
| Acc. IEC60947-1 | [kV] | 6 | | | | | | |
| Rated Operating Frequency | [Hz] | 50/60 | | | | | | |
| Overvoltage Category | | III | | | | | | |
| Pollution Degree | | 3 | | | | | | |
| **Utilization Category** | | | | | | | | |
| IEC 60947-2 (Motor Protector) | | A | | | | | | |
| IEC 60947-4-1 (Motor Starter) | | AC-3 | | | | | | |
| **Lifespan** | | | | | | | | |
| Mechanical | [ops.] | 100,000 | | | | | | |
| Electrical (Ie max.) | [ops.] | 100,000 | | | | | | |
| Switching Rate (motor starts) | AC-3 [ops/hr] | 15 | | | | | | |
| **Ambient Temperature** | | | | | | | | |
| Storage | [°C (°F)] | -50 to +80 (-58 to +176) | | | | | | |
| Operating | [°C (°F)] | -20 to +60 (-4 to +140) | | | | | | |
| Ambient Temperature Compensation | [°C (°F)] | -20 to +60 (-4 to +140) | | | | | | |
| Climatic Proofing | | IEC 60068-2-3 / IEC 60068-2-30 | | | | | | |
| **Altitude** | | | | | | | | |
| Up to 2,000m (6,600ft) | | Nominal Values (for higher altitudes refer to page 122 | | | | | | |
| Degree of protection | | IP20 | | | | | | |
| **Resistance to Shock** | | | | | | | | |
| Acc. IEC 60068-2-27 | [g] | 15 | | | | | | |
| Resistance to Vibration | | IEC 68-2 | | | | | | |
| **Protection against direct contact** | | | | | | | | |
| Acc. IEC 536; DIN VDE 0106 Part 100 | | Finger and back of hand proof | | | | | | |
| Phase Failure Sensitivity Protection | | Yes | | | | | | |
| Overload Protection Characteristics | x Iu [A] | 0.6 - 1 | | | | | | |
| Magnetic Release | x Iu [A] | 13 | | | | | | |
| Overload Trip Class | | 10 | | | | | | |
| **Total Power Loss Pv** | | | | | | | | |
| At rated load operating temperature | [W] | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| Weight | [kg] | 0.32 | | | | | | |
| | [lb] | 0.71 | | | | | | |
| Type of Terminal | | Flat Type | | | | | | |
| Screw Driver | | Philips #2 | | | | | | |
| **Terminal Capacity** | | | | | | | | |
| Solid - Stranded | [mm2] [AWG] | Refer to table on page 121 | | | | | | |
| Tightening Torque | N.m) lb.in | 1.2 - 1.7 (11 - 16) | | | | | | |
| Mounting Position | | Any Position | | | | | | |

UL File No. E172121



Data is subject to change without notice.

# MPW40 Technical Data

## General Ratings

| TYPE | Units | MPW40-3-U004 | MPW40-3-D063 | MPW40-3-U010 | MPW40-3-U016 | MPW40-3-U020 | MPW40-3-U025 | MPW40-3-U032 | MPW40-3-U040 |
|---|---|---|---|---|---|---|---|---|---|
| **Standards** | | Devices according to International Standards IEC 60947-1 / 60947-4-1, European Standards EN 60947-1 / 60947-4-1, Underwriters Laboratories - UL 508; CSA C.22.2/14; VDE 0660/102 | | | | | | | |
| Current Setting Range | [A] | 2.5 - 4.0 | 4.0 - 6.3 | 6.3 - 10 | 10 - 16 | 16 - 20 | 20 - 25 | 25 - 32 | 32 - 40 |
| Rated Thermal Current Ith | [A] | 4.0 | 6.3 | 10 | 16 | 20 | 25 | 32 | 40 |
| **Rated Insulation Voltage Ui** | | | | | | | | | |
| Acc. IEC; VDE 0660 | [V] | 690 | | | | | | | |
| Acc. UL; CSA | [V] | 600 | | | | | | | |
| **Rated Operating Voltage Ue** | | | | | | | | | |
| Acc. IEC; VDE 0660 | [V] | 690 | | | | | | | |
| Acc. UL; CSA | [V] | 600 | | | | | | | |
| **Rated Impulse Voltage Uimp** | | | | | | | | | |
| Acc. IEC60947-1 | [kV] | 6 | | | | | | | |
| Rated Operating Frequency | [Hz] | 50/60 | | | | | | | |
| Overvoltage Category | | III | | | | | | | |
| Pollution Degree | | 3 | | | | | | | |
| **Utilization Category** | | | | | | | | | |
| IEC 60947-2 (Motor Protector) | | A | | | | | | | |
| IEC 60947-4-1 (Motor Starter) | | AC-3 | | | | | | | |
| **Lifespan** | | | | | | | | | |
| Mechanical | [ops.] | 100,000 | | | | | | | |
| Electrical (Ie max.) | [ops.] | 100,000 | | | | | | | |
| Switching Rate (motor starts) | AC-3 [ops/hr] | 15 | | | | | | | |
| **Ambient Temperature** | | | | | | | | | |
| Storage | [oC (oF)] | -50 to +80 (-58 to +176) | | | | | | | |
| Operating | [oC (oF)] | -20 to +60 (-4 to +140) | | | | | | | |
| Ambient Temperature Compensation | [oC (oF)] | -20 to +60 (-4 to +140) | | | | | | | |
| Climatic Proofing | | IEC 60068-2-3 / IEC 60068-2-30 | | | | | | | |
| **Altitude** | | | | | | | | | |
| Up to 2,000m (6,600ft) | | Nominal Values (for higher altitudes refer to page 122 | | | | | | | |
| Degree of protection | | IP20 | | | | | | | |
| **Resistance to Shock** | | | | | | | | | |
| Acc. IEC 60068-2-27 | [g] | 15 | | | | | | | |
| Resistance to Vibration | | IEC 68-2 | | | | | | | |
| **Protection against direct contact** | | | | | | | | | |
| Acc. IEC 536; DIN VDE 0106 Part 100 | | Finger and back of hand proof | | | | | | | |
| Phase Failure Sensitivity Protection | | Yes | | | | | | | |
| Overload Protection Characteristics | x Iu [A] | 0.6 - 1 | | | | | | | |
| Magnetic Release | x Iu [A] | 13 | | | | | | | |
| Overload Trip Class | | 10 | | | | | | | |
| **Total Power Loss Pv** | | | | | | | | | |
| At rated load operating temperature | [W] | 6 | 6 | 6 | 6 | 8 | 8 | 8 | 8 |
| Weight | [kg] | 0.32 | | | | | | | |
| | [lb] | 0.71 | | | | | | | |
| Type of Terminal | | Flat Type | | | | | | | |
| Screw Driver | | Philips #2 | | | | | | | |
| **Terminal Capacity** | | | | | | | | | |
| Solid - Stranded | [mm2] [AWG] | Refer to table on page 121 | | | | | | | |
| Tightening Torque | N.m) lb.in | 1.2 - 1.7 (11 - 16) | | | | | | | |
| Mounting Position | | Any Position | | | | | | | |

# Motor Protectors

MPW

## MPW40 Technical Data

### Power Contact Ratings

| TYPE | Voltage | Units | MPW40-3-C016 | MPW40-3-C025 | MPW40-3-C040 | MPW40-3-C063 | MPW40-3-U001 | MPW40-3-D016 | MPW40-3-D025 |
|---|---|---|---|---|---|---|---|---|---|
| **UL/CSA DATA** | | | | | | | | | |
| Rated Operational Current Ie | | [A] | 0.16 | 0.25 | 0.40 | 0.63 | 1.0 | 1.6 | 2.5 |
| Magnetic Release Current | | [A] | 2 | 3 | 5 | 8 | 13 | 21 | 33 |
| **Max. Short Circuit Current** | | | | | | | | | |
| without CLT25 | | | | | | | | | |
| | 480V | [kA] | | | | 65 | | | |
| | 600V | [kA] | | | | 25 | | | |
| with CLT25 | | | | | | | | | |
| | 480V | [kA] | | | | 100 | | | |
| | 600V | [kA] | | | | 50 | | | |
| Motor Load, 1-phase | | | | | | | | | |
| | 115V | [HP] | - | - | - | - | - | - | - |
| | 230V | [HP] | - | - | - | - | - | 1/10 | 1/6 |
| Motor Load, 3-phase | | | | | | | | | |
| | 200V | [HP] | - | - | - | - | - | 1/4 | 1/2 |
| | 230V | [HP] | - | - | - | - | - | 1/3 | 1/2 |
| | 460V | [HP] | - | - | - | - | 1/2 | 3/4 | 1 1/2 |
| | 575V | [HP] | - | - | - | 1/4 | 1/2 | 1 | 1 1/2 |
| **Max. Rated Current of Protection Device for Group Installation** | | | | | | | | | |
| | Fuse or MCCB | [A] | 125 | 125 | 125 | 125 | 125 | 125 | 125 |
| **IEC DATA** | | | | | | | | | |
| Rated Operational Current Ie | | [A] | 0.16 | 0.25 | 0.4 | 0.63 | 1 | 1.6 | 2.5 |
| Magnetic Release Current | | [A] | 2 | 3 | 5 | 8 | 13 | 21 | 33 |
| **Back-Up Fuses** | | | | | | | | | |
| gL/gG | 220/240V | [A] | - | - | - | - | - | - | - |
| | 380/400V | [A] | - | - | - | - | - | - | - |
| | 415/440V | [A] | - | - | - | - | - | - | - |
| | 500V | [A] | - | - | - | - | - | - | - |
| | 660/690V | [A] | - | - | - | - | - | - | 25 |
| **Ultimate Short Circuit Breaking Capacity** | | | | | | | | | |
| Icu | 220/240V | [kA] | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| | 380/400V | [kA] | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| | 415/440V | [kA] | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| | 500V | [kA] | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| | 660/690V | [kA] | 100 | 100 | 100 | 100 | 100 | 100 | 8 |
| **Rated Service Short Circuit Breaking Capacity** | | | | | | | | | |
| Ics | 220/240V | [kA] | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| | 380/400V | [kA] | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| | 415/440V | [kA] | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| | 500V | [kA] | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| | 660/690V | [kA] | 100 | 100 | 100 | 100 | 100 | 100 | 8 |



Data is subject to change without notice.

# MPW40 Technical Data

## Power Contact Ratings

| TYPE | Voltage | Units | MPW40-3-U004 | MPW40-3-D063 | MPW40-3-U010 | MPW40-3-U016 | MPW40-3-U020 | MPW40-3-U025 | MPW40-3-U032 | MPW40-3-U040 |
|---|---|---|---|---|---|---|---|---|---|---|
| **UL/CSA DATA** | | | | | | | | | | |
| Rated Operational Current Ie | | [A] | 4.0 | 6.3 | 10 | 16 | 20 | 25 | 32 | 40 |
| Magnetic Release Current | | [A] | 52 | 82 | 130 | 208 | 260 | 325 | 416 | 520 |
| **Max. Short Circuit Current** | | | | | | | | | | |
| without CLT25 | | | | | | | | | | |
| | 480V | [kA] | 65 | | | 50 | | | | 20 |
| | 600V | [kA] | 25 | | | | | | 25 | 5 |
| with CLT25 | | | | | | | | | | |
| | 480V | [kA] | 100 | | | | | | | |
| | 600V | [kA] | 50 | | | | | | | |
| Motor Load, 1-phase | | | | | | | | | | |
| | 115V | [HP] | 1/8 | 1/4 | 1/2 | 1 | 1 1/2 | 2 | - | - |
| | 230V | [HP] | 1/3 | 3/4 | 1 1/2 | 3 | 3 | 3 | 5 | 5 |
| Motor Load, 3-phase | | | | | | | | | | |
| | 200V | [HP] | 3/4 | 1 1/2 | 3 | 5 | 5 | 7 1/2 | 10 | 10 |
| | 230V | [HP] | 1 | 1 1/2 | 3 | 5 | 7 1/2 | 7 1/2 | 10 | 10 |
| | 460V | [HP] | 2 | 5 | 7 1/2 | 10 | 15 | 15 | 20 | 25 |
| | 575V | [HP] | 3 | 5 | 10 | 15 | 20 | 20 | 25 | 30 |
| **Max. Rated Current of Protection Device for Group Installation** | | | | | | | | | | |
| | Fuse or MCCB | [A] | 125 | 125 | 125 | 160 | 250 | 250 | 300 | 300 |
| **IEC DATA** | | | | | | | | | | |
| Rated Operational Current Ie | | [A] | 4 | 6.3 | 10 | 16 | 20 | 25 | 32 | 40 |
| Magnetic Release Current | | [A] | 52 | 82 | 130 | 208 | 260 | 325 | 416 | 520 |
| **Back-Up Fuses** | | | | | | | | | | |
| gL/gG | 220/240V | [A] | - | - | - | - | - | - | - | - |
| | 380/400V | [A] | - | - | - | 100 | 125 | 125 | 125 | 125 |
| | 415/440V | [A] | - | - | 80 | 80 | 80 | 100 | 100 | 125 |
| | 500V | [A] | - | - | 63 | 80 | 80 | 80 | 80 | 125 |
| | 660/690V | [A] | 35 | 50 | 50 | 63 | 63 | 63 | 63 | 125 |
| **Ultimate Short Circuit Breaking Capacity** | | | | | | | | | | |
| Icu | 220/240V | [kA] | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| | 380/400V | [kA] | 100 | 100 | 100 | 50 | 50 | 50 | 50 | 30 |
| | 415/440V | [kA] | 100 | 100 | 50 | 50 | 50 | 50 | 25 | 20 |
| | 500V | [kA] | 100 | 100 | 42 | 10 | 10 | 10 | 10 | 10 |
| | 660/690V | [kA] | 8 | 8 | 8 | 5 | 5 | 5 | 5 | 5 |
| **Rated Service Short Circuit Breaking Capacity** | | | | | | | | | | |
| Ics | 220/240V | [kA] | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| | 380/400V | [kA] | 100 | 100 | 100 | 25 | 25 | 25 | 25 | 15 |
| | 415/440V | [kA] | 100 | 100 | 25 | 15 | 15 | 15 | 15 | 10 |
| | 500V | [kA] | 100 | 100 | 21 | 8 | 8 | 8 | 8 | 5 |
| | 660/690V | [kA] | 8 | 8 | 8 | 5 | 5 | 5 | 5 | 2 |

# Motor Protectors

MPW

## MPW65 Technical Data

### General Rating

| TYPE | Units | | MPW65-3-U016 | MPW65-3-U020 | MPW65-3-U025 | MPW65-3-U032 | MPW65-3-U040 | MPW65-3-U050 | MPW65-3-U065 |
|---|---|---|---|---|---|---|---|---|---|
| Standards | | | Devices according to International Standards IEC 60947-1 / 60947-4-1, European Standards EN 60947-1 / 60947-4-1, Underwriters Laboratories - UL 508; CSA C.22.2/14; VDE 0660/102 | | | | | | |
| Current Setting Range | | [A] | 10 - 16 | 16 - 20 | 20 - 25 | 25 - 32 | 32 - 40 | 40 - 50 | 50 - 65 |
| Rated Thermal Current Ith | | [A] | 16 | 20 | 25.00 | 32 | 40.0 | 50 | 65 |
| **Rated Insulation Voltage Ui** | | | | | | | | | |
| Acc. IEC; VDE 0660 | | [V] | 690 | | | | | | |
| Acc. UL; CSA | | [V] | 600 | | | | | | |
| **Rated Operating Voltage Ue** | | | | | | | | | |
| Acc. IEC; VDE 0660 | | [V] | 690 | | | | | | |
| Acc. UL; CSA | | [V] | 600 | | | | | | |
| **Rated Impulse Voltage Uimp** | | | | | | | | | |
| Acc. IEC60947-1 | | [kV] | 6 | | | | | | |
| Rated Operating Frequency | | [Hz] | 50/60 | | | | | | |
| Overvoltage Category | | | III | | | | | | |
| Pollution Degree | | | 3 | | | | | | |
| **Utilization Category** | | | | | | | | | |
| IEC 60947-2 (Motor Protector) | | | A | | | | | | |
| IEC 60947-4-1 (Motor Starter) | | | AC-3 | | | | | | |
| **Lifespan** | | | | | | | | | |
| Mechanical | | [ops.] | 50,000 | | | | | | |
| Electrical (Ie max.) | | [ops.] | 25,000 | | | | | | |
| Switching Rate (motor starts) | AC-3 | [ops/hr] | 15 | | | | | | |
| **Ambient Temperature** | | | | | | | | | |
| Storage | | [°C (°F)] | -50 to +80 (-58 to +176) | | | | | | |
| Operating | | [°C (°F)] | -20 to +60 (-4 to +140) | | | | | | |
| Ambient Temperature Compensation | | [°C (°F)] | -20 to +60 (-4 to +140) | | | | | | |
| Climatic Proofing | | | IEC 60068-2-3 / IEC 60068-2-30 | | | | | | |
| **Altitude** | | | | | | | | | |
| Up to 2,000m (6,600ft) | | | Nominal Values (for higher altitudes refer to page 122 | | | | | | |
| Degree of protection | | | IP20 | | | | | | |
| **Resistance to Shock** | | | | | | | | | |
| Acc. IEC 60068-2-27 | | [g] | 15 | | | | | | |
| Resistance to Vibration | | | IEC 68-2 | | | | | | |
| **Protection against direct contact** | | | | | | | | | |
| Acc. IEC 536; DIN VDE 0106 Part 100 | | | Finger and back of hand proof | | | | | | |
| Phase Failure Sensitivity Protection | | | Yes | | | | | | |
| Overload Protection Characteristics | x Iu | [A] | 0.6 - 1 | | | | | | |
| Magnetic Release | x Iu | [A] | 13 | | | | | | |
| Overload Trip Class | | | 10 | | | | | | |
| **Total Power Loss Pv** | | | | | | | | | |
| At rated load operating temperature | | [W] | 8 | | | | | | |
| Weight | | [kg] | 0.60 | | | | | | |
| | | [lb] | 1.42 | | | | | | |
| Type of Terminal | | | Flat Type | | | | | | |
| Screw Driver | | | Allen #4 | | | | | | |
| **Terminal Capacity** | | | | | | | | | |
| Solid - Stranded | [mm2] | [AWG] | Refer to table on page 121 | | | | | | |
| Tightening Torque | N.m) | lb.in | 1.2 - 1.7 (11 - 16) | | | | | | |
| Mounting Position | | | Any Position | | | | | | |

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Data is subject to change without notice.

# MPW65 Technical Data

## Power Contact Ratings

| TYPE | Voltage | Units | MPW65-3-U016 | MPW65-3-U020 | MPW65-3-U025 | MPW65-3-U032 | MPW65-3-U040 | MPW65-3-U050 | MPW65-3-U065 |
|---|---|---|---|---|---|---|---|---|---|
| **UL/CSA DATA** | | | | | | | | | |
| Rated Operational Current Ie | | [A] | 16 | 20 | 25 | 32 | 40 | 50 | 65 |
| Magnetic Release Current | | [A] | 208 | 260 | 325 | 416 | 520 | 650 | 845 |
| **Max. Short Circuit Current** | | | | | | | | | |
| | 480V | [kA] | 50 | | | | 35 | | |
| | 600V | [kA] | 30 | | | | 10 | | |
| **Motor Load, 1-phase** | | | | | | | | | |
| | 115V | [HP] | | | | | 3 | - | 5 |
| | 230V | [HP] | | | | | 71/2 | 10 | 10 |
| **Motor Load, 3-phase** | | | | | | | | | |
| | 200V | [HP] | | | | | - | 15 | 20 |
| | 230V | [HP] | | | | | 15 | 15 | 20 |
| | 460V | [HP] | | | | | 25 | 30 | 50 |
| | 575V | [HP] | | | | | 30 | 40 | 60 |
| **Max. Rated Current of Protection Device for Group Installation** | | | | | | | | | |
| | Fuse or MCCB | [A] | | | | | | | |
| **IEC DATA** | | | | | | | | | |
| Rated Operational Current Ie | | [A] | 16 | 20 | 25 | 32 | 40 | 50 | 65 |
| Magnetic Release Current | | [A] | 208 | 260 | 325 | 416 | 520 | 650 | 845 |
| **Back-Up Fuses** | | | | | | | | | |
| gL/gG | 220/240V | [A] | - | - | - | - | - | - | - |
| | 380/400V | [A] | 100 | 125 | 125 | 125 | 160 | 160 | 160 |
| | 415/440V | [A] | 80 | 80 | 80 | 100 | 125 | 125 | 125 |
| | 500V | [A] | 80 | 80 | 100 | 80 | 100 | 100 | 100 |
| | 660/690V | [A] | 63 | 63 | 63 | 63 | 63 | 80 | 80 |
| **Ultimate Short Circuit Breaking Capacity** | | | | | | | | | |
| Icu | 220/240V | [kA] | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| | 380/400V | [kA] | 50 | 50 | 50 | 50 | 50 | 50 | 50 |
| | 415/440V | [kA] | 50 | 50 | 50 | 50 | 50 | 50 | 50 |
| | 500V | [kA] | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| | 660/690V | [kA] | 8 | 8 | 8 | 5 | 5 | 5 | 5 |
| **Rated Service Short Circuit Breaking Capacity** | | | | | | | | | |
| Ics | 220/240V | [kA] | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| | 380/400V | [kA] | 50 | 50 | 50 | 50 | 50 | 50 | 50 |
| | 415/440V | [kA] | 50 | 50 | 50 | 50 | 50 | 50 | 50 |
| | 500V | [kA] | 15 | 15 | 15 | 15 | 10 | 10 | 10 |
| | 660/690V | [kA] | 8 | 8 | 8 | 5 | 5 | 5 | 5 |

# Motor Protectors

MPW

## MPW100 Technical Data

### General Contact Ratings

| TYPE | Units | MPW100-3-U075 | MPW100-3-U090 | MPW100-3-U100 |
|---|---|---|---|---|
| **Standards** | | Devices according to International Standards IEC 60947-1 / 60947-4-1, European Standards EN 60947-1 / 60947-4-1, Underwriters Laboratories - UL 508; CSA C.22.2/14; VDE 0660/102 | | |
| Current Setting Range | [A] | 55 - 75 | 70 - 90 | 80 - 100 |
| Rated Thermal Current Ith | [A] | 75 | 90 | 100.00 |
| **Rated Insulation Voltage Ui** | | | | |
| Acc. IEC; VDE 0660 | [V] | 690 | | |
| Acc. UL; CSA | [V] | 600 | | |
| **Rated Operating Voltage Ue** | | | | |
| Acc. IEC; VDE 0660 | [V] | 690 | | |
| Acc. UL; CSA | [V] | 600 | | |
| **Rated Impulse Voltage Uimp** | | | | |
| Acc. IEC60947-1 | [kV] | 6 | | |
| Rated Operating Frequency | [Hz] | 50/60 | | |
| Overvoltage Category | | III | | |
| Pollution Degree | | 3 | | |
| **Utilization Category** | | | | |
| IEC 60947-2 (Motor Protector) | | A | | |
| IEC 60947-4-1 (Motor Starter) | | AC-3 | | |
| **Lifespan** | | | | |
| Mechanical | [ops.] | 50,000 | | |
| Electrical (Ie max.) | [ops.] | 25,000 | | |
| Switching Rate (motor starts) | AC-3 [ops/hr] | 15 | | |
| **Ambient Temperature** | | | | |
| Storage | [°C (°F)] | -50 to +80 (-58 to +176) | | |
| Operating | [°C (°F)] | -20 to +60 (-4 to +140) | | |
| Ambient Temperature Compensation | [°C (°F)] | -20 to +60 (-4 to +140) | | |
| Climatic Proofing | | IEC 60068-2-3 / IEC 60068-2-30 | | |
| **Altitude** | | | | |
| Up to 2,000m (6,600ft) | | Nominal Values (for higher altitudes refer to page 122 | | |
| Degree of protection | | IP20 | | |
| **Resistance to Shock** | | | | |
| Acc. IEC 60068-2-27 | [g] | 15 | | |
| Resistance to Vibration | | IEC 68-2 | | |
| **Protection against direct contact** | | | | |
| Acc. IEC 536; DIN VDE 0106 Part 100 | | Finger and back of hand proof | | |
| Phase Failure Sensitivity Protection | | Yes | | |
| Overload Protection Characteristics | x Iu [A] | 0.6 - 1 | | |
| Magnetic Release | x Iu [A] | 13 | | |
| Overload Trip Class | | 10 | | |
| **Total Power Loss Pv** | | | | |
| At rated load operating temperature | [W] | 10 | | |
| Weight | [kg] | 1.20 | | |
| | [lb] | 3.00 | | |
| Type of Terminal | | Flat Type | | |
| Screw Driver | | Allen #4 | | |
| **Terminal Capacity** | | | | |
| Solid | [mm2] | Refer to table on page 121 | | |
| Stranded | [mm2] | | | |
| Solid or Stranded | [AWG] | | | |
| Tightening Torque | [N.m (lb.in)] | 4.0 - 4.6 (35 - 55) | | |
| Mounting Position | | Any Position | | |

UL File No. E172121



Data is subject to change without notice.

# MPW100 Technical Data

## Power Contact Ratings

| TYPE | Voltage | Units | MPW100-3-U075 | MPW100-3-U090 | MPW100-3-U100 |
|---|---|---|---|---|---|
| **UL/CSA DATA** | | | | | |
| Rated Operational Current Ie | | [A] | 75 | 90 | 100 |
| Magnetic Release Current | | [A] | 975 | 1170 | 1300 |
| **Max. Short Circuit Current** | | | | | |
| | 480V | [kA] | | 50 | |
| | 600V | [kA] | | 10 | |
| **Motor Load, 1-phase** | | | | | |
| | 115V | [HP] | 5 | 71/2 | 10 |
| | 230V | [HP] | 15 | 20 | 20 |
| **Motor Load, 3-phase** | | | | | |
| | 200V | [HP] | 20 | 25 | 30 |
| | 230V | [HP] | 25 | 30 | 30 |
| | 460V | [HP] | 50 | 60 | 75 |
| | 575V | [HP] | 60 | 75 | 100 |
| **Max. Rated Current of Protection Device for Group Installation** | | | | | |
| | Fuse or MCCB | [A] | | | |
| **IEC DATA** | | | | | |
| Rated Operational Current Ie | | [A] | 75 | 90 | 100 |
| Magnetic Release Current | | [A] | 975 | 1170 | 1300 |
| **Back-Up Fuses** | | | | | |
| gL/gG | 220/240V | [A] | - | - | - |
| | 380/400V | [A] | - | - | - |
| | 415/440V | [A] | 200 | 200 | 200 |
| | 500V | [A] | 160 | 160 | 160 |
| | 660/690V | [A] | 125 | 160 | 160 |
| **Ultimate Short Circuit Breaking Capacity** | | | | | |
| Icu | 220/240V | [kA] | 100 | 100 | 100 |
| | 380/400V | [kA] | 75 | 75 | 75 |
| | 415/440V | [kA] | 50 | 50 | 50 |
| | 500V | [kA] | 12 | 12 | 12 |
| | 660/690V | [kA] | 6 | 6 | 6 |
| **Rated Service Short Circuit Breaking Capacity** | | | | | |
| Ics | 220/240V | [kA] | 100 | 100 | 100 |
| | 380/400V | [kA] | 50 | 50 | 50 |
| | 415/440V | [kA] | 38 | 38 | 38 |
| | 500V | [kA] | 9 | 9 | 9 |
| | 660/690V | [kA] | 6 | 6 | 6 |

# MPW Technical Data

## Auxiliary Contact Block Ratings

| TYPE | Voltage | Units | ACBF-11 | ACBF-11 MPW100 | ACBS-11 | ACBS-20 | ACBS-02 | ACBS-11 MPW100 | ACBS-20 MPW100 | ACBS-02 MPW100 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Rated Insulation Voltage Ui** | | | | | | | | | | |
| Acc. IEC; VDE 0660 | | [V] | 300 | | 690 | | | | | |
| Acc. UL; CSA | | [V] | 240 | | 600 | | | | | |
| **Rated Operating Voltage Ue** | | | | | | | | | | |
| Acc. IEC; VDE 0660 | | [V] | 250 | | 690 | | | | | |
| Acc. UL; CSA | | [V] | 240 | | 600 | | | | | |
| **Rated Impulse Voltage Uimp** | | | | | | | | | | |
| Acc. IEC60947-1 | | [kV] | 4 | | 6 | | | | | |
| Overvoltage Category | | | III | | | | | | | |
| Pollution Degree | | | 3 | | | | | | | |
| **Life Span** | | | | | | | | | | |
| Mechanical | | [ops.] | 100,000 | | | | | | | |
| Electrical (Ie max.) | | [ops.] | 100,000 | | | | | | | |
| Rated Thermal Current Ith | | [A] | 2.5 | | 10 | | | | | |
| **Rated Operating Current Ie** | | | | | | | | | | |
| Acc. IEC 60947-5-1 / AC-15 | 24V | [A] | 2 | | 6 | | | | | |
| | 110-127V | [A] | 0.5 | | 6 | | | | | |
| | 220-240V | [A] | 0.5 | | 6 | | | | | |
| | 380-400V | [A] | - | | 3 | | | | | |
| | 415-450V | [A] | - | | 1 | | | | | |
| | 500V | [A] | - | | 1 | | | | | |
| | 660-690V | [A] | - | | 1 | | | | | |
| Acc. UL; CSA | | | C300 | | A600 | | | | | |
| **Rated Operating Current Ie** | | | | | | | | | | |
| Acc. IEC 60947-5-1 / DC-13 | 24V | [A] | 1 | | 2 | | | | | |
| | 48V | [A] | 0.3 | | 0.8 | | | | | |
| | 60V | [A] | 0.15 | | 0.5 | | | | | |
| | 110V | [A] | - | | 0.5 | | | | | |
| | 220V | [A] | - | | 0.25<br>0.25 | | | | | |
| | 440V | [A] | - | | 0.1<br>0.1 | | | | | |
| Acc. UL; CSA | | | R300 | | Q600 | | | | | |
| **Short Circuit rating without welding** | | | | | | | | | | |
| gL/gG | | [A] | 10 | | | | | | | |
| MCB | | [A] | 6 | | | | | | | |
| Type of Terminal | | | Screwdriver; Philips #2 | | | | | | | |
| **Terminal Capacity** | | | | | | | | | | |
| Solid or Stranded | | [mm2] | 1 or 2 x (0.5 to 2.5) | | | | | | | |
| Solid or Stranded | | [AWG] | 1 or 2 x (18 to 14) | | | | | | | |
| Tightening Torque | | [N.m (lb.in)] | 1.0 - 1.25 (8.85 - 11.06) | | | | | | | |



Data is subject to change without notice.

# MPW Technical Data

## Trip Signalling Block

| TYPE | Voltage | Units | TSB-22 | TSB-11 MPW100 |
|---|---|---|---|---|
| **Rated Insulation Voltage Ui** | | | | |
| Acc. IEC; VDE 0660 | | [V] | 690 | |
| Acc. UL; CSA | | [V] | 600 | |
| **Rated Operating Voltage Ue** | | | | |
| Acc. IEC; VDE 0660 | | [V] | 690 | |
| Acc. UL; CSA | | [V] | 600 | |
| **Rated Impulse Voltage Uimp** | | | | |
| Acc. IEC60947-1 | | [kV] | 6 | |
| Overvoltage Category | | | III | |
| Pollution Degree | | | 3 | |
| **Life Span** | | | | |
| Mechanical | | [ops.] | 100000 | |
| Electrical (Ie max.) | | [ops.] | 100000 | |
| Rated Thermal Current Ith | | [A] | 10 | |
| **Rated Operating Current Ie** | | | | |
| Acc. IEC 60947-5-1 / AC-15 | 24V | [A] | 6 | |
| | 110-127V | [A] | 6 | |
| | 220-240V | [A] | 6 | |
| | 380-400V | [A] | 3 | |
| | 415-450V | [A] | 3 | |
| | 500V | [A] | 2 | |
| | 660-690V | [A] | 1 | |
| Acc. UL; CSA | | | A600 | |
| **Rated Operating Current Ie** | | | | |
| Acc. IEC 60947-5-1 / DC-13 | 24V | [A] | 2 | |
| | 48V | [A] | 0.5 | |
| | 60V | [A] | 0.5 | |
| | 110V | [A] | 0.5 | |
| | 220V | [A] | 0.25 | |
| | 440V | [A] | 0.1 | |
| Acc. UL; CSA | | | Q600 | |
| **Short Circuit rating without welding** | | | | |
| gL/gG | | [A] | 6 | |
| MCB | | [A] | 6 | |
| Type of Terminal | Screw Driver - Philips #2 | | | |
| **Terminal Capacity** | | | | |
| Solid or Stranded | | [mm2] | 1 or 2 x (0.5 to 2.5) | |
| Solid or Stranded | | AWG | 1 or 2 x (18 to 14) | |
| Tightening Torque | | N.m (lb.in) | 1.0 - 1.25 8.85 - 11.06) | |

# MPW Technical Data

## Shunt Release Block

| TYPE | Units | | SRMP | SRMP MPW100 |
|---|---|---|---|---|
| **Rated Insulation Voltage Ui** | | | | |
| Acc. IEC; VDE 0660 | | [V] | 690 | |
| Acc. UL; CSA | | [V] | 600 | |
| **Rated Operating Voltage Ue** | | | | |
| Acc. IEC; VDE 0660 | | [V] | 690 | |
| Acc. UL; CSA | | [V] | 600 | |
| **Rated Impulse Voltage Uimp** | | | | |
| Acc. IEC60947-1 | | [kV] | 6 | |
| Overvoltage Category | | | III | |
| Pollution Degree | | | 3 | |
| **Life Span** | | | | |
| Mechanical | | [ops.] | 100000 | |
| Electrical (Ie max.) | | [ops.] | 100000 | |
| Actuating Voltage | x Us | [V] | 0.7 - 1.1 | |
| **Power Consumption** | | | | |
| Pull-In | | [VA (W)] | 20.2 (13) | 8.5 (6) |
| Hold | | [VA (W)] | 7.2 (2.4) | 3 (1.2) |
| Maximum Opening Time | | [ms] | 20 | |
| **Short Circuit Rating without Welding** | | | | |
| Fuse gL/gG | | [A] | 10 | |
| MCB | | [A] | 6 | |
| Type of Terminal | | | Screw Driver - Philips #2 | |
| **Terminal Capacity** | | | | |
| Solid or Stranded | | [mm2] | 1 or 2 x (0.5 to 2.5) | |
| Solid or Stranded | | AWG | 1 or 2 x (18 to 14) | |
| Tightening Torque | | [N.m (lb.in)] | 1.0 - 1.25 (8.85 - 11.06) | |

## Under Voltage Release Block

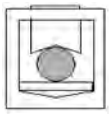
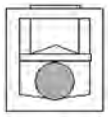
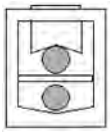
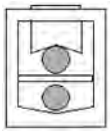
| TYPE | Units | | URMP | URMP MPW100 |
|---|---|---|---|---|
| **Rated Insulation Voltage Ui** | | | | |
| Acc. IEC; VDE 0660 | | [V] | 690 | |
| Acc. UL; CSA | | [V] | 600 | |
| **Rated Operating Voltage Ue** | | | | |
| Acc. IEC; VDE 0660 | | [V] | 690 | |
| Acc. UL; CSA | | [V] | 600 | |
| **Rated Impulse Voltage Uimp** | | | | |
| Acc. IEC60947-1 | | [kV] | 6 | |
| Overvoltage Category | | | III | |
| Pollution Degree | | | 3 | |
| **Life Span** | | | | |
| Mechanical | | [ops.] | 100000 | |
| Electrical (Ie max.) | | [ops.] | 100000 | |
| Pick-Up Voltage | x Us | [V] | 0.85 - 1.1 | |
| Drop-Out Voltage | x Us | [V] | 0.7 - 0.35 | |
| **Power Consumption** | | | | |
| Pull-In | | [VA (W)] | 20.2 (13) | 8.5 (6) |
| Hold | | [VA (W)] | 7.2 (2.4) | 3 (1.2) |
| Maximum Opening Time | | [ms] | 20 | |
| **Short Circuit Rating without Welding** | | | | |
| Fuse gL/gG | | [A] | 10 | |
| MCB | | [A] | 6 | |
| Type of Terminal | | | Screw Driver - Philips #2 | |
| **Terminal Capacity** | | | | |
| Solid or Stranded | | [mm2] | 1 or 2 x (0.5 to 2.5) | |
| Solid or Stranded | | AWG | 1 or 2 x (18 to 14) | |
| Tightening Torque | | [lb. in] | 1.0 - 1.25 (8.85 - 11.06) | |



Data is subject to change without notice.

# MPW Technical Data

## Main Terminal Capacity

| Catalog Number | Type | Number of conductors | Cross-Section |
|---|---|---|---|
| **MPW18** | Rigid or flexible cable | 1 or 2 | 1...4 mm²<br>18...12 AWG |
| **MPW40** | Rigid or flexible cable | 1 or 2 | 1...2.5 mm²<br>2.5...6 mm²<br>14...8 AWG [1)] |
| **MPW65** | Type | 1 conductor connection in upper part only | Cross-Section |
| | Rigid cable |  | 1...35 mm² |
| | Cable without terminal | | 1.5...35 mm² |
| | Cable with terminal | | 1...35 mm² |
| | Flexible cable | | 1.5...35 mm² |
| | | | 16...2 AWG |
| | Type | 1 conductor connection in lower part only | Cross-Section |
| | Rigid cable |  | 2.5...35mm² |
| | Cable without terminal | | 6...35mm² |
| | Cable with terminal | | 2.5...35mm² |
| | Flexible cable | | 6...35mm² |
| | | | 12...2 AWG |
| | Type | Connection of 2 condutors - Conductor in upper part | Cross-Section |
| | Rigid cable |  | 1...35mm² |
| | Cable without terminal | | 1.5...35mm² |
| | Cable with terminal | | 1...35mm² |
| | Flexible cable | | 1.5...35mm² |
| | | | 16...2 AWG |
| | Type | Conductor in lower part | Cross-Section |
| | Rigid cable |  | 2.5...35mm² |
| | Cable without terminal | | 6...35mm² |
| | Cable with terminal | | 2.5...35mm² |
| | Flexible cable | | 6...35mm² |
| | | | 12...2 AWG |
| **MPW100** | Type | Number of conductors | Cross-Section |
| | Rigid cable | 1 | 2.5...70 mm² |
| | | | 12...2/0 AWG |
| | | 2 | 2.5...50 mm² |
| | | | 12...1/0 AWG |
| | Flexible cable | 1 | 2.5...50 mm² |
| | | | 12...1/0 AWG |
| | | 2 | 2.5...35 mm² |
| | | | 10...2 AWG |

*Note: 1) 8 AWG for flexible cable only*

# MPW Technical Data

## Altitude - Correction factor

The MPW manual motor protectors do not undergo any change to their specified performance when applied at an altitude of up to 2000 meters above sea level. However, as the altitude increases, the reduced atmospheric pressure produces decreasing dielectric properties. Therefore, current and voltage correction factors must be applied for altitudes exceeding 2000 meters, as shown in the table on the right.

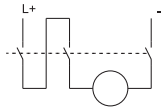
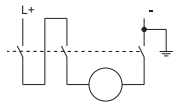
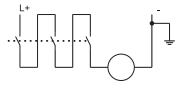
| Altitude (above sea level) - h | Rated operational voltage $U_e$ | Current correction factor $I_u$ |
|---|---|---|
| h ≤ 2000 m | 690 V | 1 x $I_u$ |
| 2000 < h ≤ 3000 m | 550 V | 0,96 x $I_u$ |
| 3000 < h ≤ 4000 m | 480 V | 0,93 x $I_u$ |
| 4000 < h ≤ 5000 m | 420 V | 0,90 x $I_u$ |

## DC operation

The MPW18, MPW40 and MPW65 motor protective circuit breakers can also be used for operating DC loads. For such operation it is necessary to connect 2 or 3 poles in series. See recommended circuits and their voltage limits in the table on the right.

Time constant t = 5 ms

Short-circuit breaking capacity $I_{cu}$ = 10 kA for all configurations

| Circuits | Max. VDC | Notes |
|---|---|---|
|  | 150 VDC | System not grounded 2 pole series connected |
|  | 300 VDC | System grounded 2 pole series connected |
|  | 450 VDC | System grounded 3 pole series connected |



Data is subject to change without notice.

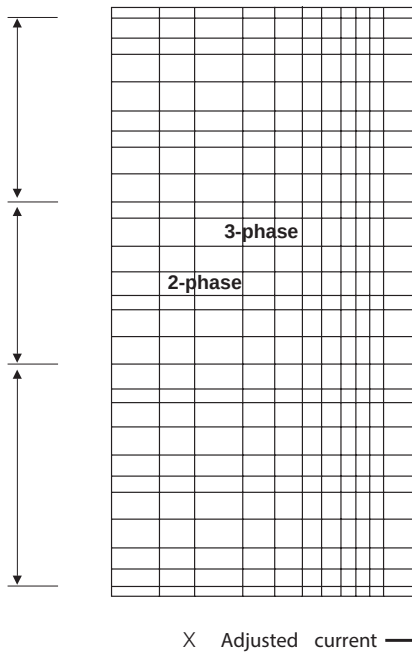
## Characteristic Curves

### Time Current Characteristic MPW40 Class 10

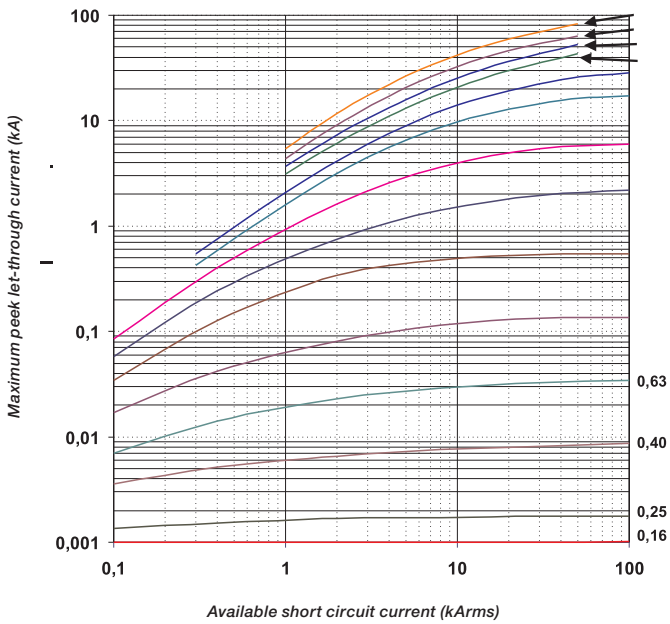
The tripping characteristic indicates the manual motor protector trip time in relation to the rated current.

The curves show average tolerance range values for an ambient temperature of 20°C (68°F), starting in cold state. Thermal trip time when working in operating temperature is reduced to around 25% of the listed values. Under normal operating conditions, all 3 manual motor protector phases must be conducting.

**MPW18/40/65**




### Characteristic I²t at 460V - MPW40

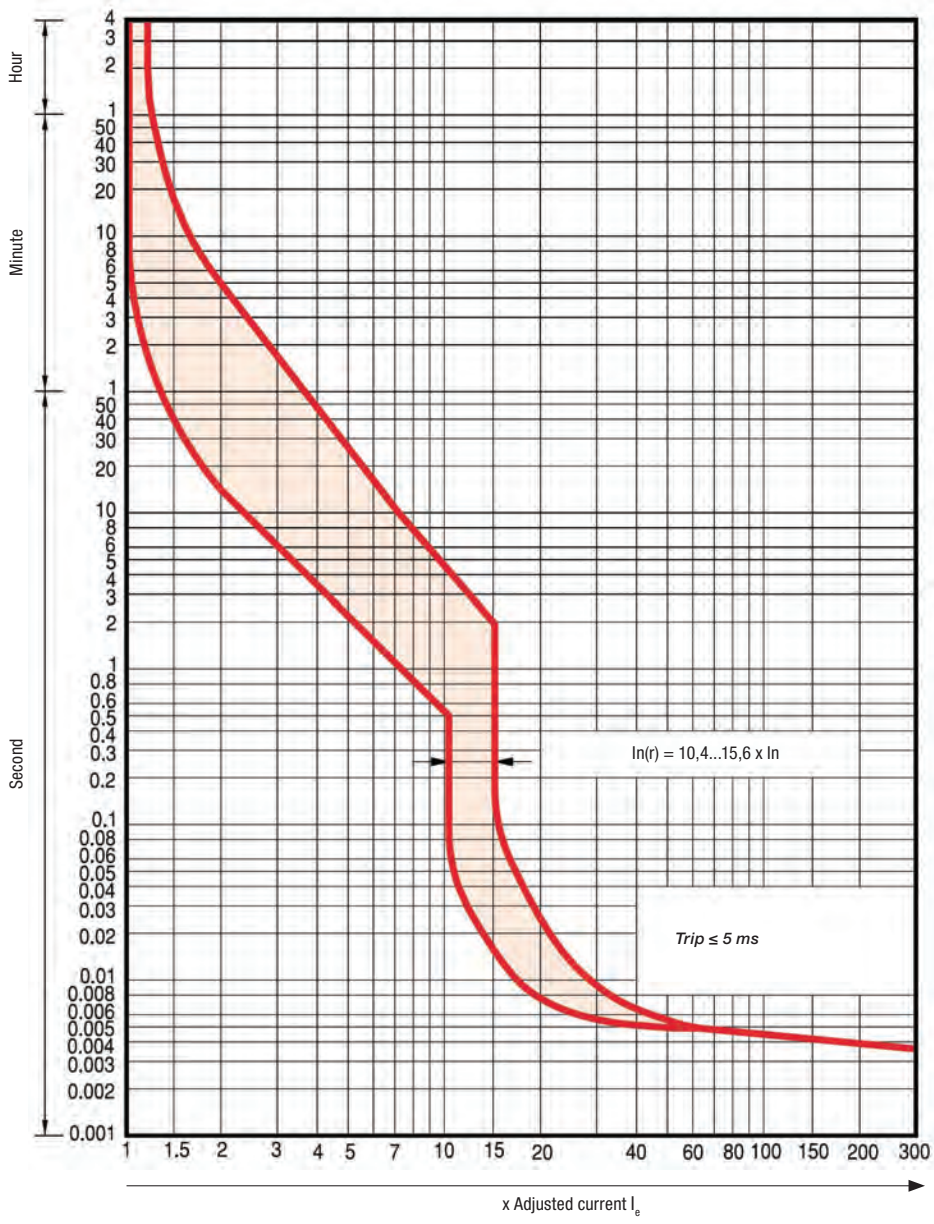


# Motor Protectors

MPW

## Characteristics Curves

### MPW100




*Notes: 1) Thermal Tripping current: Curve presented for an ambient temperature of 20°C(68°F) starting from cold state.*



Data is subject to change without notice.

## Technical Data

### Short Circuit Interruption Capacity UL/CSA for MPW18, MPW40, MPW65, MPW100

| | | Manual Motor Controller High Capacity | | | | Combination Motor Controller (Type E/F) High Capacity | | | | Combination Motor Controller (Type E/F) Extra High Capacity | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Catalog Number | Setting Overload Release (A) | 240VAC | 480VAC Y/277VAC | 600VAC Y/347VAC | Max. Fuse or MCCB | 240VAC | 480VAC Y/277VAC | 600VAC Y/347VAC | Max. Fuse or MCCB | 240VAC | 480VAC Y/277VAC | 600VAC Y/347VAC | Max. Fuse or MCCB |
| | | kA | kA | kA | A | kA | kA | kA | A | kA | kA | kA | A |
| MPW18 | 0.10 - 0.16 | 50 | 50 | 10 | 125 | - | - | - | - | - | - | - | - |
| | 0.16 - 0.25 | 50 | 50 | 10 | 125 | - | - | - | - | - | - | - | - |
| | 0.25 - 0.40 | 50 | 50 | 10 | 125 | - | - | - | - | - | - | - | - |
| | 0.40 - 0.63 | 50 | 50 | 10 | 125 | - | - | - | - | - | - | - | - |
| | 0.63 - 1.0 | 50 | 50 | 10 | 125 | - | - | - | - | - | - | - | - |
| | 1.0 - 1.6 | 50 | 50 | 10 | 125 | - | - | - | - | - | - | - | - |
| | 1.6 - 2.5 | 50 | 50 | 10 | 125 | - | - | - | - | - | - | - | - |
| | 2.5 - 4.0 | 50 | 50 | 10 | 125 | - | - | - | - | - | - | - | - |
| | 4.0 - 6.3 | 50 | 50 | 10 | 125 | - | - | - | - | - | - | - | - |
| | 6.3 - 10 | 50 | 50 | 5 | 125 | - | - | - | - | - | - | - | - |
| | 10 - 16 | 30 | 30 | 5 | 160 | - | - | - | - | - | - | - | - |
| | 12 - 18 | 30 | 30 | 5 | 160 | - | - | - | - | - | - | - | - |
| MPW40 | 0.10 - 0.16 | 50 | 65 | 25 | 125 | 50 | 50 | 25 | - | 100 | 100 | 50 | - |
| | 0.16 - 0.25 | 50 | 65 | 25 | 125 | 50 | 50 | 25 | - | 100 | 100 | 50 | - |
| | 0.25 - 0.40 | 50 | 65 | 25 | 125 | 50 | 50 | 25 | - | 100 | 100 | 50 | - |
| | 0.40 - 0.63 | 50 | 65 | 25 | 125 | 50 | 50 | 25 | - | 100 | 100 | 50 | - |
| | 0.63 - 1.0 | 50 | 65 | 25 | 125 | 50 | 50 | 25 | - | 100 | 100 | 50 | - |
| | 1.0 - 1.6 | 50 | 65 | 25 | 125 | 50 | 50 | 25 | - | 100 | 100 | 50 | - |
| | 1.6 - 2.5 | 50 | 65 | 25 | 125 | 50 | 50 | 25 | - | 100 | 100 | 50 | - |
| | 2.5 - 4.0 | 50 | 65 | 25 | 125 | 50 | 50 | 25 | - | 100 | 100 | 50 | - |
| | 4.0 - 6.3 | 50 | 65 | 25 | 125 | 50 | 50 | 25 | - | 100 | 100 | 50 | - |
| | 6.3 - 10 | 50 | 65 | 25 | 125 | 50 | 50 | 25 | - | 100 | 100 | 50 | - |
| | 10 - 16 | 50 | 50 | 25 | 160 | 50 | 50 | 25 | - | 100 | 100 | 50 | - |
| | 16 - 20 | 50 | 50 | 25 | 250 | 50 | 50 | 25 | - | 100 | 100 | 50 | - |
| | 20 - 25 | 50 | 50 | 25 | 250 | 50 | 50 | 25 | - | 100 | 100 | 50 | - |
| | 25 - 32 | 42 | 50 | 25 | 500 | 42 | 42 | 25 | - | 100 | 100 | 50 | - |
| | 32 - 40 | 20 | 20 | 5 | 520 | - | - | - | - | - | - | - | - |
| MPW65 | 10 ... 16 | 50 | 50 | 30 | 160 | 50 | 50 | 30 | - | - | - | - | - |
| | 16 ... 20 | 50 | 50 | 30 | 250 | 50 | 50 | 30 | - | - | - | - | - |
| | 20 ... 25 | 50 | 50 | 30 | 250 | 50 | 50 | 30 | - | - | - | - | - |
| | 25 ... 32 | 50 | 50 | 30 | 500 | 50 | 50 | 30 | - | - | - | - | - |
| | 32 ... 40 | 35 | 35 | 10 | 500 | 35 | 35 | 10 | - | - | - | - | - |
| | 40 ... 50 | 35 | 35 | 10 | 750 | 35 | 35 | 10 | - | - | - | - | - |
| | 50 ... 65 | 35 | 35 | 10 | 750 | 35 | 35 | 10 | - | - | - | - | - |
| MPW100 | 55 ... 75 | 50 | 50 | 10 | 1250 | 50 | 50 | 10 | - | - | - | - | - |
| | 70 ... 90 | 50 | 50 | 10 | 1250 | 50 | 50 | 10 | - | - | - | - | - |
| | 80 ... 100 | 50 | 50 | 10 | 1250 | 50 | 50 | 10 | - | - | - | - | - |

*Note: - Fuse or MCCB not required.*

# Motor Protectors

MPW

## Technical Data

### Short-Circuit Interruption Capacity (IEC 60947-2) for MPW18 , MPW40, MPW65, MPW100

| Catalog Number | Setting Overload Release (A) | 220-230VAC | | | 380-415VAC | | | 440VAC | | | 460-500VAC | | | 630-690VAC | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $I_{cu}$ | $I_{cs}$ | Max. Fuse (gL/gG) | $I_{cu}$ | $I_{cs}$ | Max. Fuse (gL/gG) 1) | $I_{cu}$ | $I_{cs}$ | Max. Fuse (gL/gG) 1) | $I_{cu}$ | $I_{cs}$ | Max. Fuse (gL/gG) 1) | $I_{cu}$ | $I_{cs}$ | Max. Fuse (gL/gG) 1) |
| | | kA | kA | A | kA | kA | A | kA | kA | A | kA | kA | A | kA | kA | A |
| MPW18 | 0.10...0.16 | 100 | 100 | - | 100 | 100 | - | 100 | 100 | - | 100 | 100 | - | 10 | 10 | - |
| | 0.16...0.25 | 100 | 100 | - | 100 | 100 | - | 100 | 100 | - | 100 | 100 | - | 10 | 10 | - |
| | 0.25...0.4 | 100 | 100 | - | 100 | 100 | - | 100 | 100 | - | 100 | 100 | - | 10 | 10 | - |
| | 0.4...0.63 | 100 | 100 | - | 100 | 100 | - | 100 | 100 | - | 100 | 100 | - | 10 | 10 | - |
| | 0.63...1 | 100 | 100 | - | 100 | 100 | - | 100 | 100 | - | 100 | 100 | - | 10 | 10 | - |
| | 1...1.6 | 100 | 100 | - | 100 | 100 | - | 100 | 100 | - | 100 | 100 | - | 10 | 10 | - |
| | 1.6...2.5 | 100 | 100 | - | 100 | 100 | - | 100 | 100 | - | 100 | 100 | - | 8 | 8 | 25 |
| | 2.5...4 | 100 | 100 | - | 100 | 100 | - | 100 | 100 | - | 100 | 100 | - | 8 | 8 | 35 |
| | 4...6.3 | 100 | 100 | - | 100 | 100 | - | 100 | 100 | - | 100 | 100 | - | 8 | 8 | 50 |
| | 6.3...10 | 100 | 100 | - | 50 | 10 | 100 | 50 | 10 | 80 | 10 | 10 | 63 | 5 | 5 | 50 |
| | 10...16 | 100 | 100 | - | 10 | 10 | 100 | 10 | 10 | 80 | 10 | 10 | 80 | 4 | 3 | 63 |
| | 12...18 | 100 | 100 | - | 10 | 10 | 100 | 10 | 10 | 80 | 10 | 10 | 80 | 10 | 10 | 80 |
| MPW40 | 0.10...0.16 | 100 | 100 | - | 100 | 100 | - | 100 | 100 | - | 100 | 100 | - | 100 | 100 | - |
| | 0.16...0.25 | 100 | 100 | - | 100 | 100 | - | 100 | 100 | - | 100 | 100 | - | 100 | 100 | - |
| | 0.25...0.4 | 100 | 100 | - | 100 | 100 | - | 100 | 100 | - | 100 | 100 | - | 100 | 100 | - |
| | 0.4...0.63 | 100 | 100 | - | 100 | 100 | - | 100 | 100 | - | 100 | 100 | - | 100 | 100 | - |
| | 0.63...1 | 100 | 100 | - | 100 | 100 | - | 100 | 100 | - | 100 | 100 | - | 100 | 100 | - |
| | 1...1.6 | 100 | 100 | - | 100 | 100 | - | 100 | 100 | - | 100 | 100 | - | 100 | 100 | - |
| | 1.6...2.5 | 100 | 100 | - | 100 | 100 | - | 100 | 100 | - | 100 | 100 | - | 8 | 8 | 25 |
| | 2.5...4 | 100 | 100 | - | 100 | 100 | - | 100 | 100 | - | 100 | 100 | - | 8 | 8 | 32 |
| | 4...6.3 | 100 | 100 | - | 100 | 100 | - | 100 | 100 | - | 100 | 100 | - | 8 | 8 | 50 |
| | 6.3...10 | 100 | 100 | - | 100 | 100 | - | 50 | 25 | 80 | 42 | 21 | 63 | 8 | 8 | 50 |
| | 10...16 | 100 | 100 | - | 50 | 25 | 100 | 50 | 15 | 80 | 10 | 8 | 80 | 5 | 5 | 63 |
| | 16...20 | 100 | 100 | - | 50 | 25 | 125 | 50 | 15 | 80 | 10 | 8 | 80 | 5 | 5 | 63 |
| | 20...25 | 100 | 100 | - | 50 | 25 | 125 | 50 | 15 | 100 | 10 | 8 | 80 | 5 | 5 | 63 |
| | 25...32 | 100 | 100 | - | 50 | 25 | 125 | 25 | 15 | 100 | 10 | 8 | 80 | 5 | 5 | 63 |
| | 32...40 | 100 | 100 | - | 50 | 25 | 125 | 25 | 15 | 100 | 10 | 8 | 80 | 5 | 2 | 63 |
| MPW65 | 10...16 | 100 | 100 | - | 50 | 50 | 100 | 50 | 50 | 80 | 15 | 15 | 80 | 8 | 8 | 63 |
| | 16...20 | 100 | 100 | - | 50 | 50 | 125 | 50 | 50 | 80 | 15 | 15 | 80 | 8 | 8 | 63 |
| | 20...25 | 100 | 100 | - | 50 | 50 | 125 | 50 | 50 | 100 | 15 | 15 | 80 | 8 | 8 | 63 |
| | 25...32 | 100 | 100 | - | 50 | 50 | 125 | 50 | 50 | 100 | 15 | 15 | 80 | 5 | 5 | 63 |
| | 32...40 | 100 | 100 | - | 50 | 50 | 160 | 50 | 50 | 125 | 15 | 10 | 100 | 5 | 5 | 63 |
| | 40...50 | 100 | 100 | - | 50 | 50 | 160 | 50 | 50 | 125 | 15 | 10 | 100 | 5 | 5 | 80 |
| | 50...65 | 100 | 100 | - | 50 | 50 | 160 | 50 | 50 | 125 | 15 | 10 | 100 | 5 | 5 | 80 |
| MPW100 | 55...75 | 100 | 100 | - | 75 | 50 | - | 50 | 38 | 200 | 12 | 9 | 160 | 6 | 6 | 125 |
| | 70...90 | 100 | 100 | - | 75 | 50 | - | 50 | 38 | 200 | 12 | 9 | 160 | 6 | 6 | 160 |
| | 80...100 | 100 | 100 | - | 75 | 50 | - | 50 | 38 | 200 | 12 | 9 | 160 | 6 | 6 | 160 |

*Self protected against short-circuits up to 100kA*

*- Back-up fuse not required*

*1) Fuse required for greater short-circuit currents.*



Data is subject to change without notice.

## Technical Data

### Short-Circuit Interruption Capacity (IEC 60947-2) Limiter Function MPW40 + CLT25

| Catalog Number | Setting Overload Release (A) | 380-415VAC | | | 440VAC | | | 460-500VAC | | | 630-690VAC | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $I_{cu}$ | $I_{cs}$ | Max. Fuse (gL/gG) | $I_{cu}$ | $I_{cs}$ | Max. Fuse (gL/gG) | $I_{cu}$ | $I_{cs}$ | Max. Fuse (gL/gG) | $I_{cu}$ | $I_{cs}$ | Max. Fuse (gL/gG) |
| | | kA | kA | A | kA | kA | A | kA | kA | A | kA | kA | A |
| MPW40 + CLT32 MPW40 | 0.10...0.16 | ♦ | ♦ | - | ♦ | ♦ | - | ♦ | ♦ | - | ♦ | ♦ | - |
| | 0.16...0.25 | ♦ | ♦ | - | ♦ | ♦ | - | ♦ | ♦ | - | ♦ | ♦ | - |
| | 0.25...0.4 | ♦ | ♦ | - | ♦ | ♦ | - | ♦ | ♦ | - | ♦ | ♦ | - |
| | 0.4...0.63 | ♦ | ♦ | - | ♦ | ♦ | - | ♦ | ♦ | - | ♦ | ♦ | - |
| | 0.63...1 | ♦ | ♦ | - | ♦ | ♦ | - | ♦ | ♦ | - | ♦ | ♦ | - |
| | 1...1.6 | ♦ | ♦ | - | ♦ | ♦ | - | ♦ | ♦ | - | ♦ | ♦ | - |
| | 1.6...2.5 | ♦ | ♦ | - | ♦ | ♦ | - | ♦ | ♦ | - | 50 | 50 | - |
| | 2.5...4 | ♦ | ♦ | - | ♦ | ♦ | - | ♦ | ♦ | - | 50 | 50 | - |
| | 4...6.3 | ♦ | ♦ | - | ♦ | ♦ | - | ♦ | ♦ | - | 50 | 50 | - |
| | 6.3...10 | ♦ | ♦ | - | 100 | 100 | - | 100 | 100 | - | 50 | 50 | - |
| | 10...16 | 100 | 100 | - | 100 | 100 | - | 100 | 100 | - | 50 | 50 | - |
| | 16...20 | 100 | 100 | - | 100 | 100 | - | 100 | 100 | - | 50 | 50 | - |
| | 20...25 | 100 | 100 | - | 100 | 100 | - | 100 | 100 | - | 10 | 10 | - |
| | 25...32 | 100 | 100 | - | 100 | 100 | - | 100 | 100 | - | 10 | 10 | - |

*Notes:* *Self protected against short-circuits up to 100kA*

\- *Back-up fuse not required*

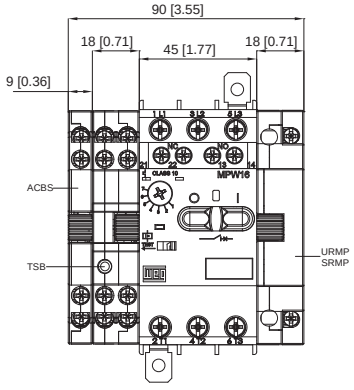
♦ *Not applicable due to MPW40 already having 100 kA of $I_{cu}$ / $I_{cs}$ in referred ranges.*

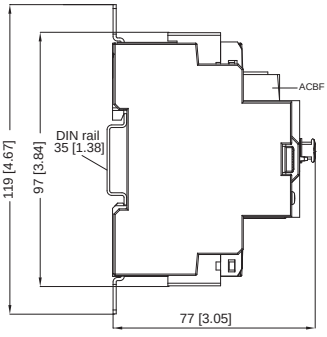
# Motor Protectors

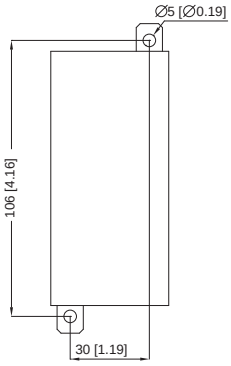
MPW

## Dimensions mm (in)

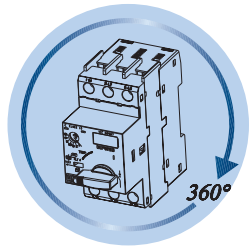
### MPW18 + Accessories



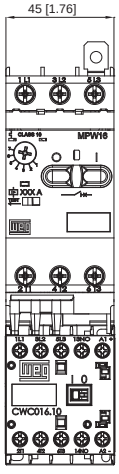



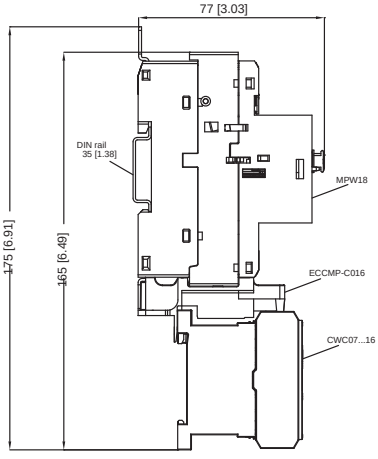




### Mounting Position

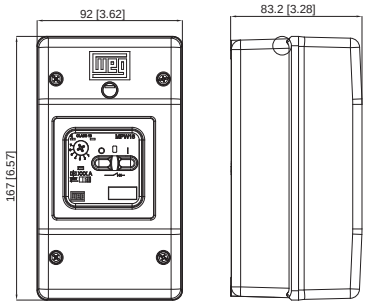



### MPW18 + CWC07...16



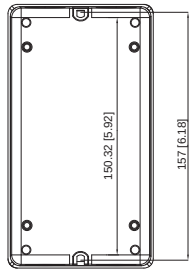



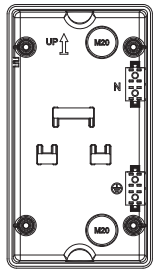

### Insulated Enclosure - PE66 (IP66)

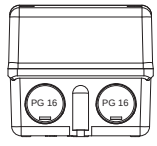




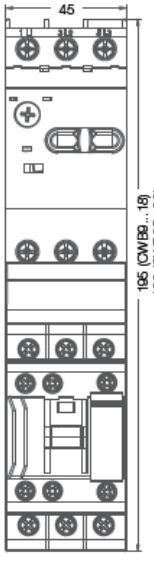


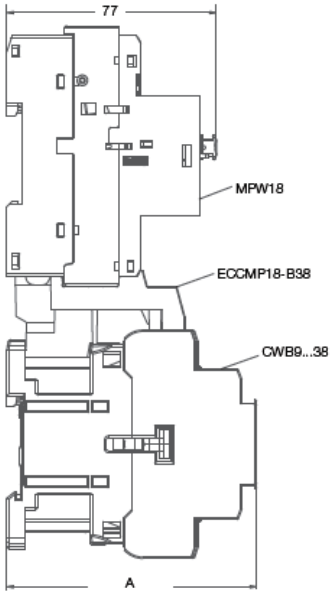



### MPW18 + CWB9...18 / CWB25...38



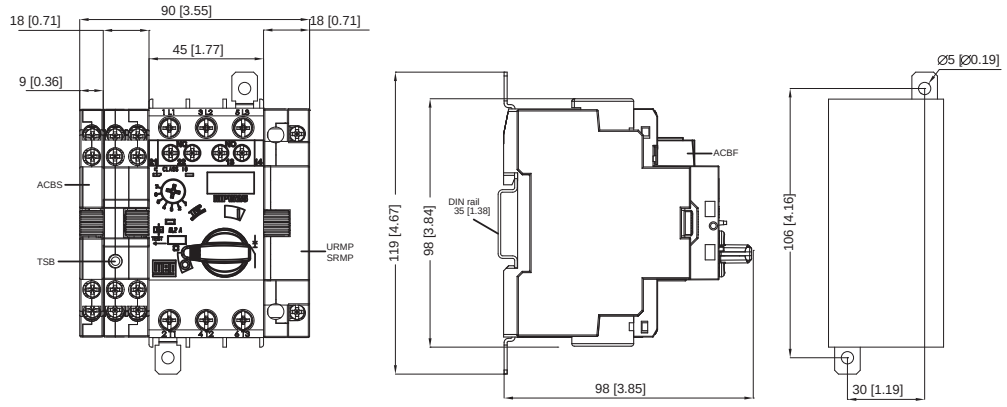

| A | CWB9...18 | CWB25...38 |
|---|---|---|
| AC coil | 89.5 | 93 |



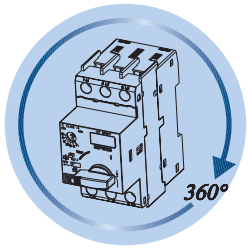
Data is subject to change without notice.

# Dimensions mm (in)

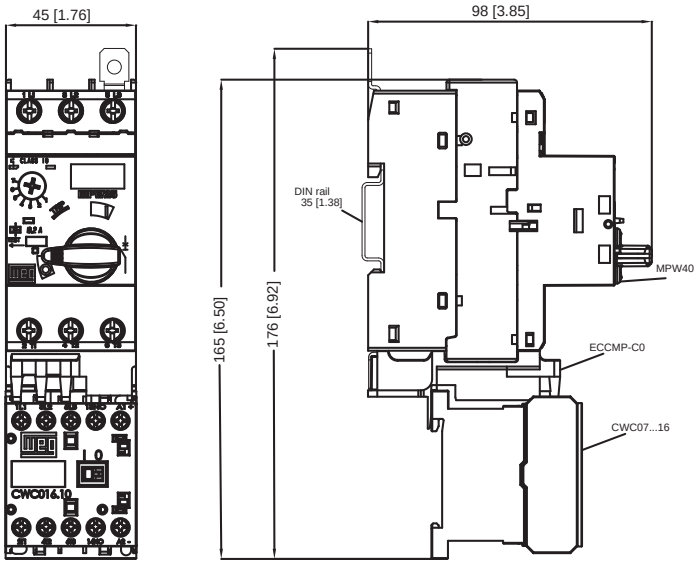
## MPW40 + Accessories



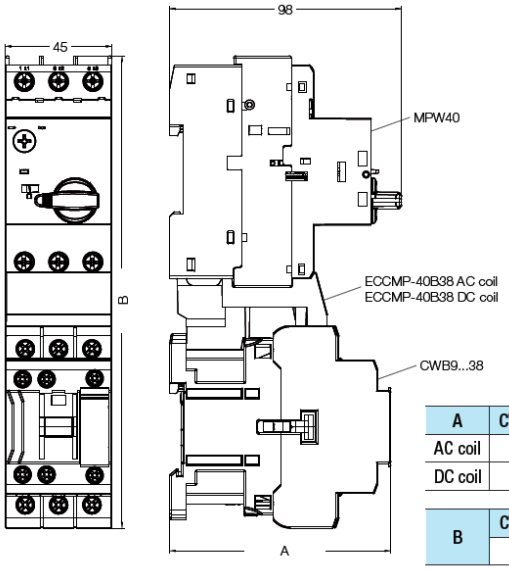

### Mounting Position




## MPW40 + CWC07...16




## MPW40 + CWB9...18 / CWB25...38




| A | CWB9...18 | CWB25...38 |
|---|---|---|
| AC coil | 89.5 | 93 |
| DC coil | 95.7 | 102.2 |

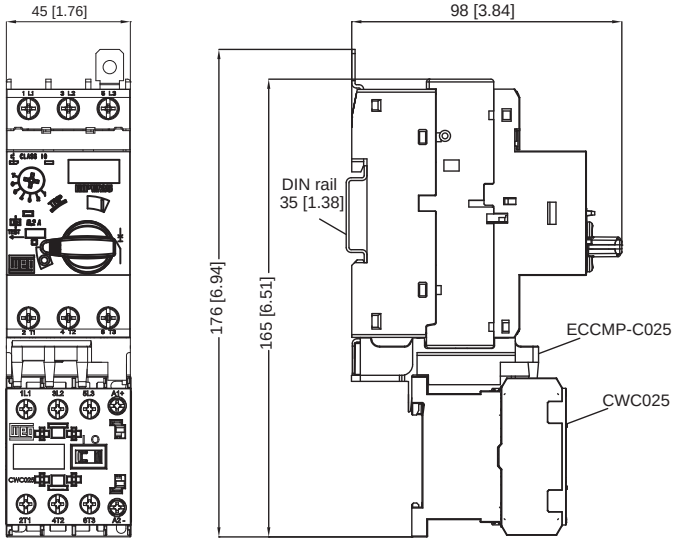
| B | CWB9...18 | CWB25...38 |
|---|---|---|
| | 196 | 199 |

# Motor Protectors

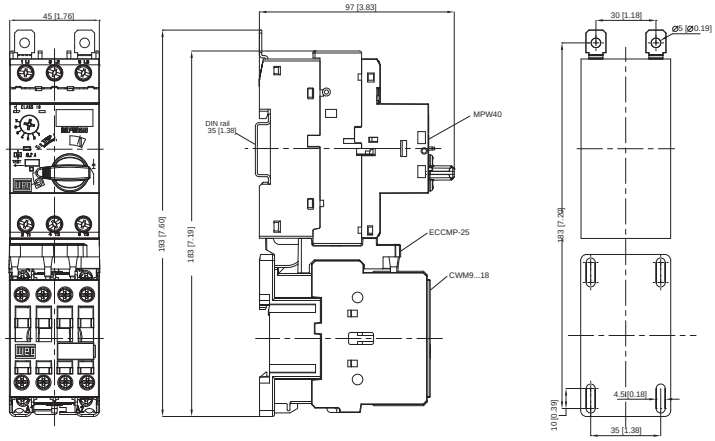
MPW

## Dimensions mm (in)

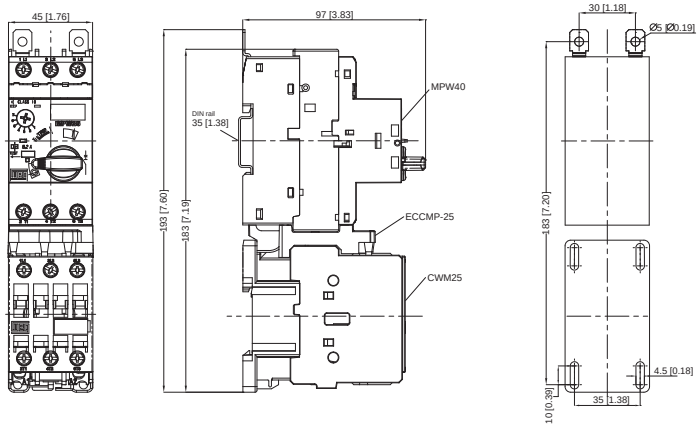
### MPW40 + CWC025




### MPW40 + CWM9...18




### MPW40 + CWM25

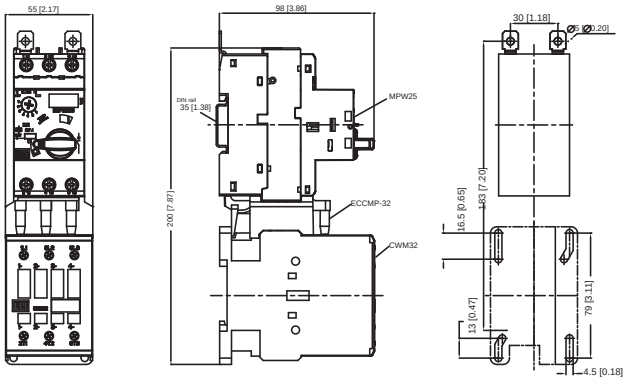




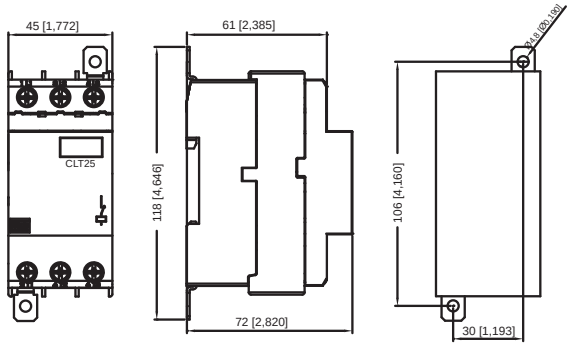

Data is subject to change without notice.

## Dimensions mm (in)

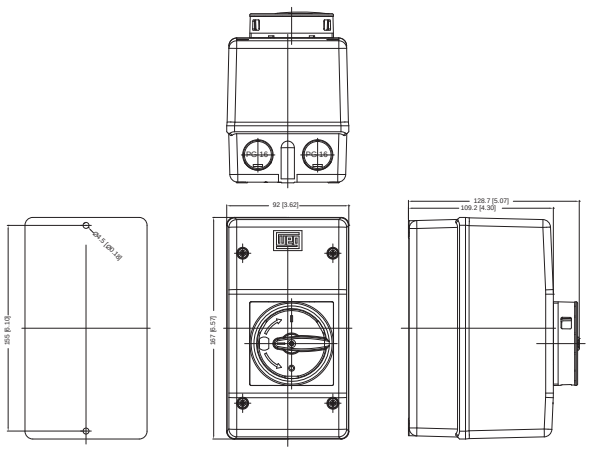
### MPW40 + CWM32



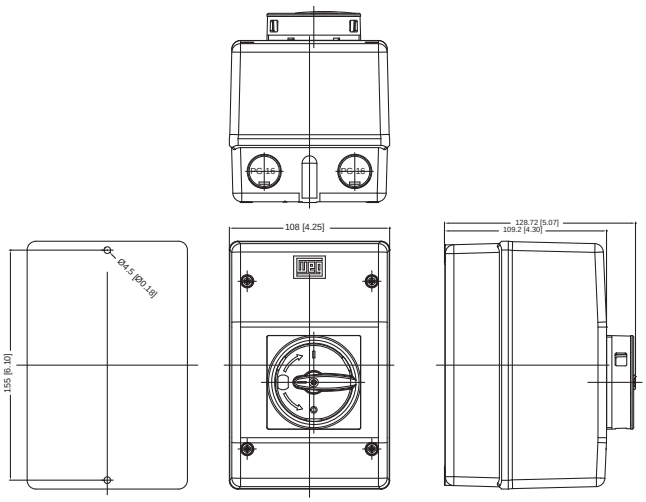

### Current limiter - CLT32 MPW40




### Insulated Enclosure - PE55 (IP55)




### Insulated Enclosure - LPE55 (IP55)

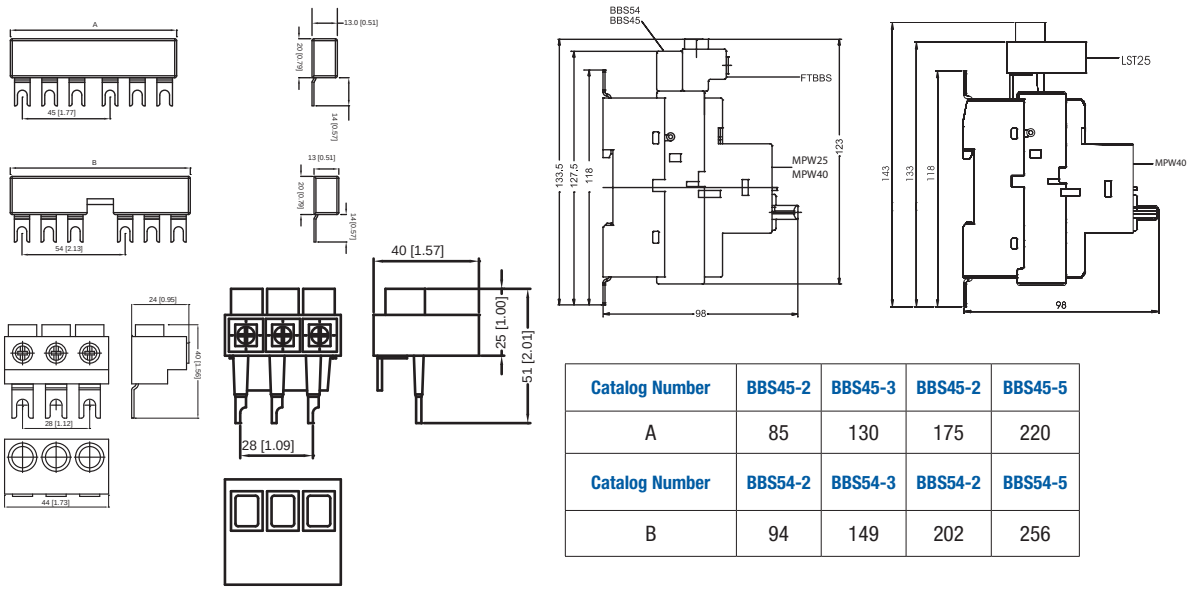


# Motor Protectors

MPW

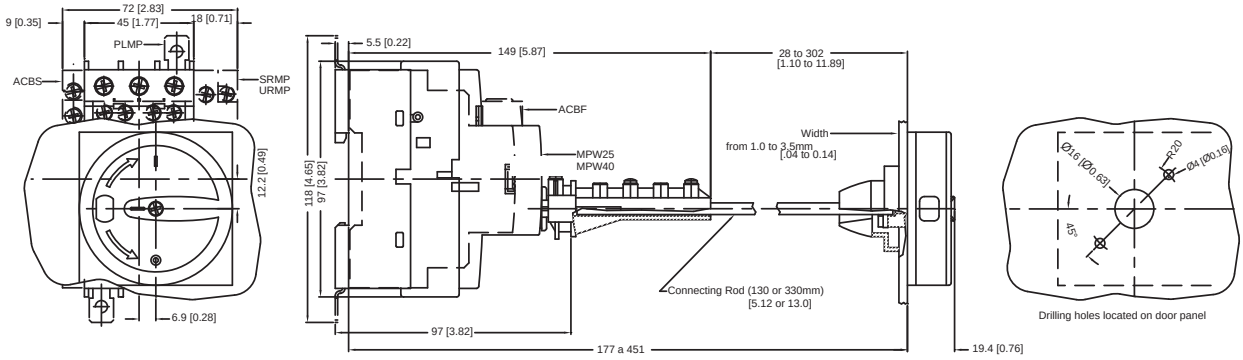
## Dimensions mm (in)

### Accessories: BBS45, BBS54, FTBBS, LST25

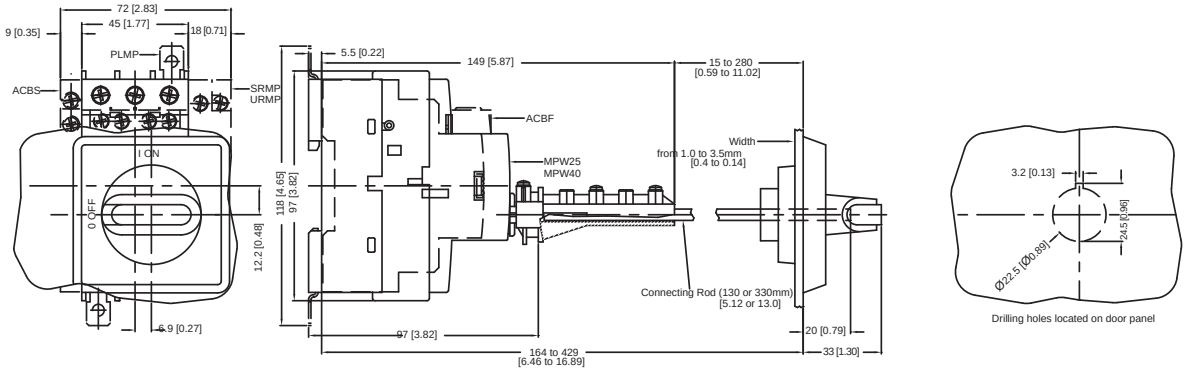



| Catalog Number | BBS45-2 | BBS45-3 | BBS45-2 | BBS45-5 |
|---|---|---|---|---|
| A | 85 | 130 | 175 | 220 |
| Catalog Number | BBS54-2 | BBS54-3 | BBS54-2 | BBS54-5 |
| B | 94 | 149 | 202 | 256 |

### Through the Door Rotary Handle - RMMP




### Through the Door Rotary Handle - MR MPW40

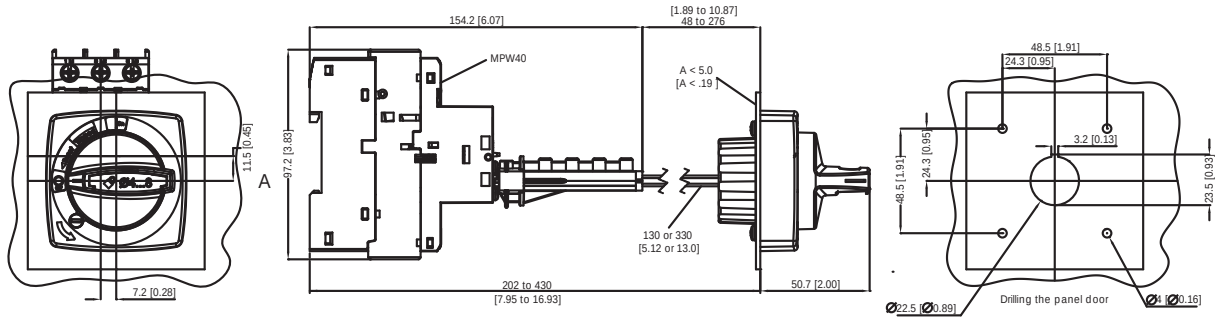




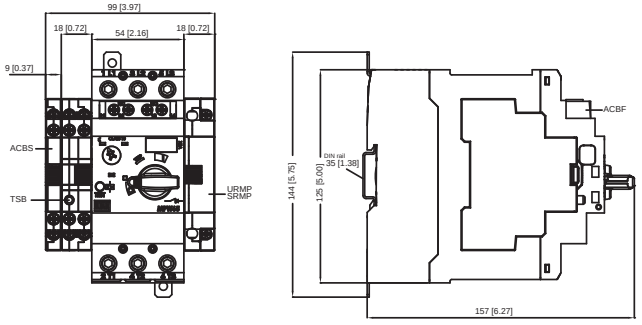

Data is subject to change without notice.

# Dimensions mm (in)

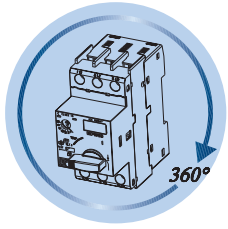
## Through the Door Rotary Handle - MRX



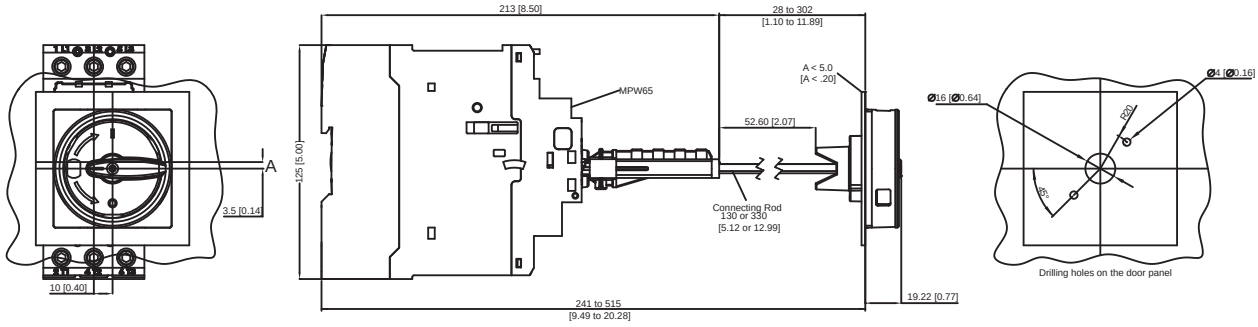

## MPW65 + Accessories



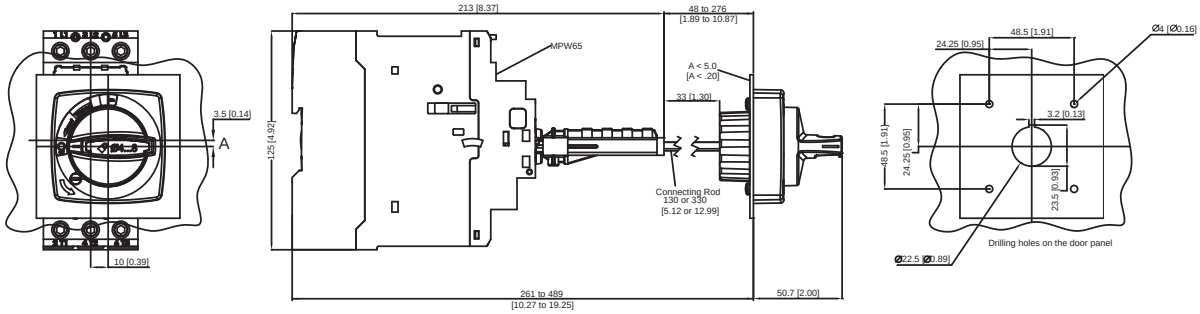

## Mounting Position




## Through the Door Rotary Handle - RMMP65




## Through the Door Rotary Handle - MRX65

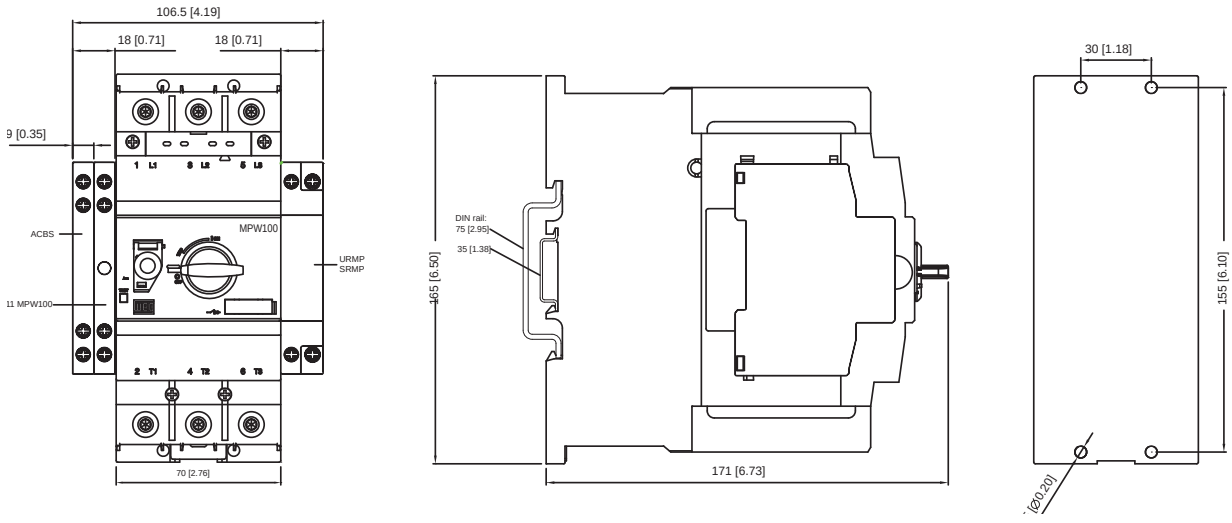


# Motor Protectors

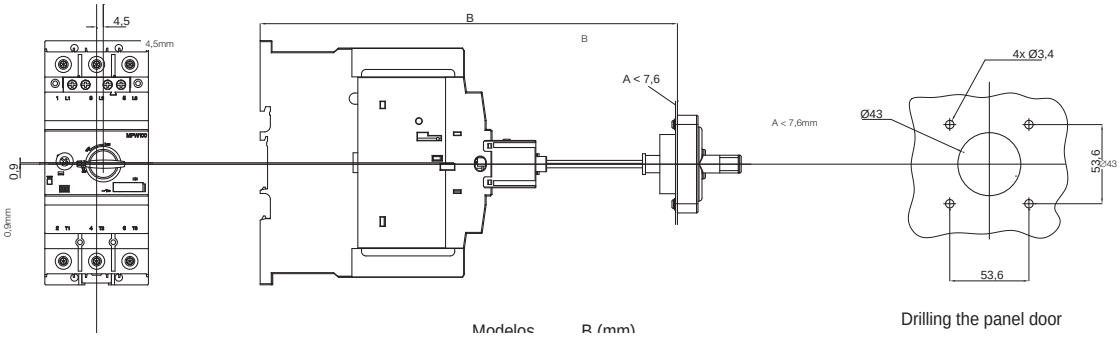
MPW

## Dimensions mm (in)

### MPW100



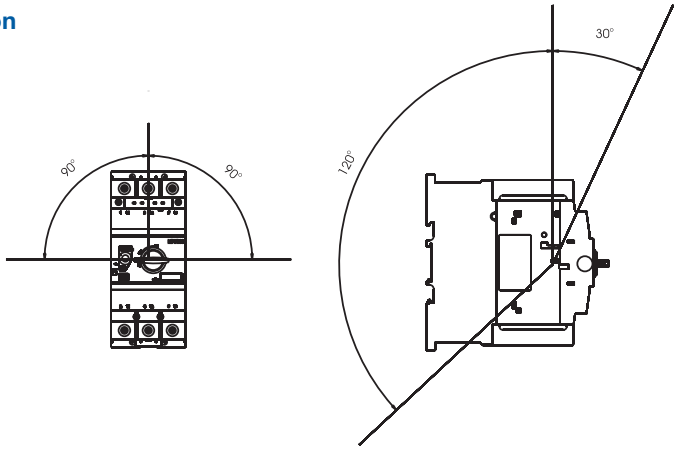

### Through the Door Coupling Rotary Handle - MR MPW100




Drilling the panel door

| Part Number | B (mm) |
|---|---|
| MR MPW100-115 | min: 220 |
| | max: 282 |
| MR MPW100-315 | min: 220 |
| | max: 482 |

### Mounting position






Data is subject to change without notice.

# Miniature Contactors - CWC Series

The CWC Series Mini Contactor Line is a Compact Solution for the Control and Operation of Circuits. Its extensive lineup of modular and tool-free accessories makes this series the most flexible mini-contactor available today. The CWC Series miniature contactor features more horsepower for its size than any other miniature contactor on the market.



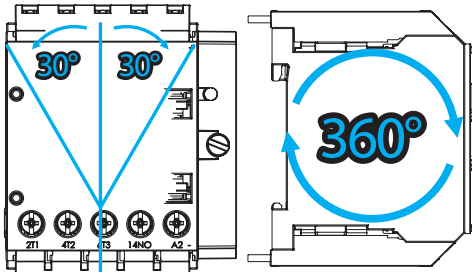


## Standard Features:

- Direct Mounting to RW17D Series Thermal Overload Relays
- Direct Mounting to MPW18 and MPW40 Series Manual Motor Protectors
- Low Consumption DC Coils
- Tool Free DIN Rail Mountable
- Frame size remains the same for AC and DC coil contactors up to 16A
- Complete line of snap-on accessories

UL File No. E202315

### Mounting Position of All Compact Contactors




### CWC Catalog Number Sequence

| CWC | 16 | - | 10 | - | 30 | V18 |
|---|---|---|---|---|---|---|

**Miniature Contactor Series**
CWC: Miniature Power Contactor
CWCA: Control Relay

**Frame Rating**
Blank: Control Relay (1th=10Amps)
7:07Amps
9:09Amps
12:012Amps
16:016Amps
25:022Amps

**Auxiliary Contacts**
For CWC0
00: None
10: 1 NO
01: 1 NC

For CWCA0
22:2 NO + 2 NC
31:3 NO + 1 NC
13:1 NO + 3 NC
40:4 NO
04: 4 NC

**Power Pole**
00: Control Relay (4 auxiliary terminals)
30: CWCO with 3 NO Power Poles
22: CWCO with 2 NO + 2 NC Power Poles
40: CWCO with 4 NO Power Poles

**Coil Voltage**
VAC COIL
V04: 24Vac 60Hz
V18: 120Vac 60 Hz
V24: 208-240Vac 60 Hz
V47: 480Vac 60Hz

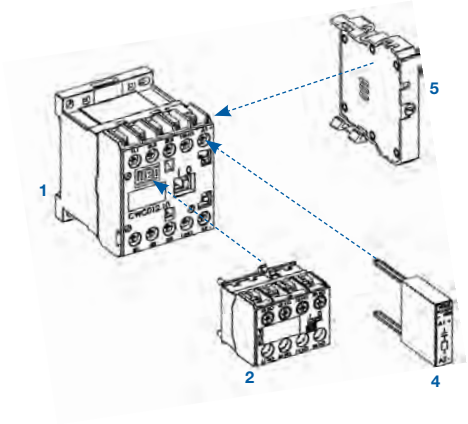
VDC Coil (Standard Consumption)
C03: 24Vdc
C12: 110Vdc

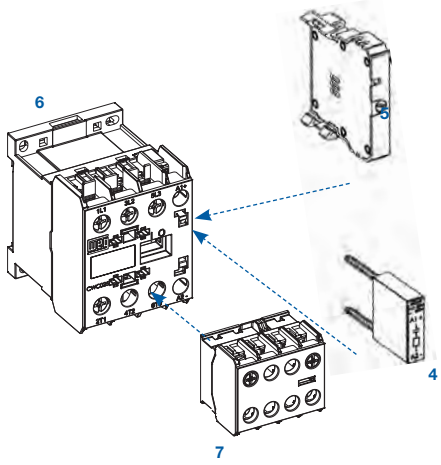
VDC COIL (Low Consumption)
L03:24Vdc

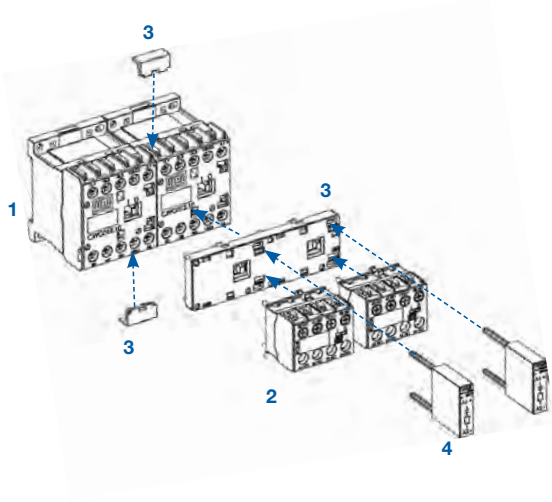
*Chart intended for reference only and not to create part numbers*

# Contactors

## CWC Series - Miniature Contactors




1 - Miniature contactors CWC07...16
2 - Front auxiliary contact block BFC0
3 - Mechanical interlock block BIC0
4 - Surge supressor blocks RCC0 (RC), VRC0 (Varistor), DIC0 (Diode)
5 - Electronic timers TEC0, TDC0 and TETC0
6 - Mini contactor CWC025
7 - Front auxiliary contact block BFC025



Data is subject to change without notice.





| Type | 3 poles | CWC07 | CWC09 | CWC012 | CWC016 | CWC025 |
|---|---|---|---|---|---|---|
| **Rated operational power [1]** | | | | | | |
| **Single-phase** | | | | | | |
| 115Vac | Hp | 1/3 | 1/3 | 1/2 | 1 | 1 1/2 |
| 230Vac | Hp | 3/4 | 1 | 2 | 2 | 3 |
| **Three-phase** | | | | | | |
| 230Vac | Hp | 1 1/2 | 3 | 3 | 5 | 7 1/2 |
| 460Vac | Hp | 5 | 5 | 7 1/2 | 10 | 15 |
| 575Vac | Hp | 5 | 7 1/2 | 7 1/2 | 10 | 15 |
| General Purpose Rating (AC-1) | A | 18 | 20 | 22 | 22 | 32 |
| Inductive Motor Switching (AC-3) | | 7 | 9 | 12 | 16 | 25 |
| Overload relay | A | RW17-1D  | | 0.28. . .0.4<br>0.4. . .0.63<br>0.56. . .0.8<br>0.8. . .1.2<br>1.2. . .1.8<br>1.8. . .2.8 | 2.8. . .4<br>4. . .6.3<br>5.6. . .8<br>7. . .10<br>8. . .12.5<br>10. . .15<br>11. . .17 | RW17-2D  7...10<br>8...12.5<br>10...15<br>11...17<br>15...23<br>22...32 |
| Auxiliary contact blocks | |  | | BFC0-20 (2NO)<br>BFC0-22 (2NO + 2NC)<br>BFC0-11 (1NO + 1NC)<br>BFC0-04 (4NC)<br>BFC0-02 (2NC)<br>BFC0-31 (2NO + 1NC)<br>BFC0-40 (4NO)<br>BFC0-13 (1NO + 3NC) | |  BFC025-11 (1NO+1NC)<br>BFC025-20 ( 2NO)<br>BFC025-02 (2NC) |
| Mechanical interlock | |  | | BICO | | – |
| Timer | |  | | | ON-Delay (TECO)<br>OFF-Delay (TDCO)<br>Star-Delta (TETCO) | |
| Surge suppressor | |  | | | RC block:<br>RCC0-1 D49 12-24V 50/60Hz<br>RCC0-2 D53 24-48V 50/60Hz<br>RCC0-3 D55 50-127V 50/60Hz<br>RCC0-4 D63 130-250V 50/60Hz<br>RCC0-5 D84 275-380V 50/60Hz<br>RCC0-6 D73 400-510V 50/60Hz<br><br>Varistor block:<br>VRC0-1 E01 12-48V 50/60Hz / 12-60VDC<br>VRC0-2 E34 50-127V 50/60Hz / 60-180VDC<br>VRC0-3 E50 130-250V 50/60Hz / 180-300VDC<br>VRC0-4 E41 277-380V 50/60Hz / 300-510VDC<br>VRC0-5 D73 400-510V 50/60Hz<br><br>Diode block(CWC07-16):<br>DIC0-1C33 12-600VDC | |

*Notes: 1) Some motor characteristics may vary according to each manufacturer.*

# Contactors

## CWC Series - Miniature Contactors

### Three Pole Miniature Contactor with AC Coil

| Maximum UL Horsepower | | | | | | Auxiliary Contacts | | Current Rating Amps | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Single Phase | | Three Phase | | | | | | | | | |
| 115V | 230V | 200V | 230V | 460V | 575V | N.O. | N.C. | | | | |
| 1/3 | 3/4 | 1-1/2 | 1-1/2 | 5 | 5 | 1 | 0 | 7 | CWC07-10-30* | $48 | Z6 |
| | | | | | | 0 | 1 | | CWC07-01-30* | $48 | |
| 1/3 | 1 | 2 | 3 | 5 | 7-1/2 | 1 | 0 | 9 | CWC09-10-30* | $52 | |
| | | | | | | 0 | 1 | | CWC09-01-30* | $52 | |
| 1/2 | 2 | 3 | 3 | 7-1/2 | 7-1/2 | 1 | 0 | 12 | CWC012-10-30* | $64 | |
| | | | | | | 0 | 1 | | CWC012-01-30* | $64 | |
| 1 | 2 | 3 | 5 | 10 | 10 | 1 | 0 | 16 | CWC016-10-30* | $70 | |
| | | | | | | 0 | 1 | | CWC016-01-30* | $70 | |
| 1-1/2 | 3 | 5 | 7 -1/2 | 15 | 15 | 0 | 0 | 22 | CWC025-00-30* | $80 | |

To complete the selection
- Replace "*" with desired coil voltage from Coil Voltage Code Table

| *AC COIL VOLTAGE CODE SELECTION | | | | |
|---|---|---|---|---|
| 60 Hz | 24V | 120V | 208-240V | 480V |
| CODE | V04 | V18 | V24 | V47 |
| 50 Hz | - | 110V | - | 400-415V |

**Note: Other voltages available upon request.**



### Three Pole Miniature Contactors with DC Coil

| Maximum UL Horsepower | | | | | | Auxiliary Contacts | | Current Rating Amps | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Single Phase | | Three Phase | | | | | | | | | |
| 115V | 230V | 200V | 230V | 460V | 575V | N.O. | N.C. | | | | |
| 1/3 | 3/4 | 1-1/2 | 1-1/2 | 5 | 5 | 1 | 0 | 7 | CWC07-10-30+ | $62 | Z6 |
| | | | | | | 0 | 1 | | CWC07-01-30+ | $62 | |
| 1/3 | 1 | 2 | 3 | 5 | 7-1/2 | 1 | 0 | 9 | CWC09-10-30+ | $68 | |
| | | | | | | 0 | 1 | | CWC09-01-30+ | $68 | |
| 1/2 | 2 | 3 | 3 | 7-1/2 | 7-1/2 | 1 | 0 | 12 | CWC012-10-30+ | $74 | |
| | | | | | | 0 | 1 | | CWC012-01-30+ | $74 | |
| 1 | 2 | 3 | 5 | 10 | 10 | 1 | 0 | 16 | CWC016-10-30+ | $79 | |
| | | | | | | 0 | 1 | | CWC016-01-30+ | $79 | |

To complete the selection
- Replace "+" with desired coil voltage from Coil Voltage Code Table



| +DC COIL VOLTAGE CODE SELECTION | | | |
|---|---|---|---|
| Vdc | 24V | 110V | 24V LOW CONSUMPTION* |
| CODE | C03 | C12 | L03 |



Data is subject to change without notice.

## Four Pole Contactors with AC Coil

| Horse Power @460V | Main Contacts | | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|
| | N.O. | N.C. | | | |
| 5 | 4 | 0 | CWC07-00-40* | $48 | Z6 |
| | 2 | 2 | CWC07-00-22* | | |
| 5 | 4 | 0 | CWC09-00-40* | $52 | |
| | 2 | 2 | CWC09-00-22* | | |
| 10 | 4 | 0 | CWC016-00-40* | $70 | |
| | 2 | 2 | CWC016-00-22* | | |

To complete the selection
- Replace "*" with desired coil voltage from Coil Voltage Code Table

| *AC COIL VOLTAGE SELECTION | | | | |
|---|---|---|---|---|
| 60 Hz | 24V | 120V | 208-240V | 480V |
| CODE | V04 | V18 | V24 | V47 |
| 50 Hz | - | 110V | - | 400-415V |



## Four Pole Contactors with DC Coil

| Horse Power @460V | Main Contacts | | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|
| | N.O. | N.C. | | | |
| 5 | 4 | 0 | CWC07-00-40+ | $62 | Z6 |
| | 2 | 2 | CWC07-00-22+ | | |
| 5 | 4 | 0 | CWC09-00-40+ | $68 | |
| | 2 | 2 | CWC09-00-22+ | | |
| 10 | 4 | 0 | CWC016-00-40+ | $79 | |
| | 2 | 2 | CWC016-00-22+ | | |

To complete the selection
- Replace "+" with desired coil voltage from Coil Voltage Code Table

| +DC COIL VOLTAGE CODE SELECTION FOR CWC0_-00-40+ | | |
|---|---|---|
| 60 Hz | 24V | 110V |
| CODE | C03 | C12 |

| +DC COIL VOLTAGE SELECTION FOR CWC0_-00-22+ | | |
|---|---|---|
| 60 Hz | 24V | 110V |
| CODE | R03 | R12 |



# Contactors

## CWC Series - Miniature Contactors

### Miniature Control Relay

| Current Rating Amps | Rating | Auxiliary Contacts N.O. | | Auxiliary Contacts N.C. | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|---|---|
| 10 | A600, Q600 | 2 |  | 2 | CWCA0-22-00* | $45 | Z6 |
| | | 3 | | 1 | CWCA0-31-00* | $45 | |
| | | 4 | | 0 | CWCA0-40-00* | $45 | |
| | | 1 | | 3 | CWCA0-13-00* | $45 | |
| | | 0 | | 4 | CWCA0-04-00* | $45 | |

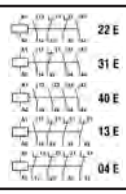
To complete the selection
- Replace "*" with desired coil voltage from Coil Voltage Code Table

| *AC COIL VOLTAGE SELECTION | | | | |
|---|---|---|---|---|
| 60 Hz | 24V | 120V | 208-240V | 480V |
| CODE | V04 | V18 | V24 | V47 |
| 50 Hz | - | 110V | - | 400-415V |

**Note: Other voltages available upon request.**



### Miniature Control Relay with DC Coil

| Current Rating Amps | Rating | Auxiliary Contacts N.O. | | Auxiliary Contacts N.C. | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|---|---|
| 10 | A600, Q600 | 2 |  | 2 | CWCA0-22-00+ | $59 | Z6 |
| | | 3 | | 1 | CWCA0-31-00+ | $59 | |
| | | 4 | | 0 | CWCA0-40-00+ | $59 | |
| | | 1 | | 3 | CWCA0-13-00+ | $59 | |
| | | 0 | | 4 | CWCA0-04-00+ | $59 | |

To complete the selection
- Replace "+" with desired coil voltage from Coil Voltage Code Table

| +DC COIL VOLTAGE CODE SELECTION | | | |
|---|---|---|---|
| Vdc | 24V | 110V | 24V LOW CONSUMPTION* |
| CODE | C03 | C12 | L03 |





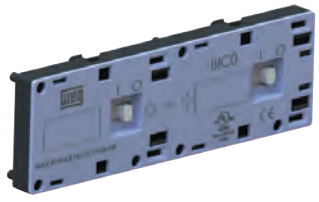
Data is subject to change without notice.

## Front Auxiliary Contact Block

| | For use with | Max. number of contacts/ mini contactor | Auxiliary contacts NO | Auxiliary contacts NC | For use with CWC0 (3 pole) Terminal Markings | For use with CWC0 (3 pole) Catalog Number | For use with CWC0 (4 pole) Terminal markings | For use with CWC0 (4 pole) Catalog Number | For use with CWCA0 Terminal markings | For use with CWCA0 Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | CWC07...16 CWCA0 | 2 | 2 | 0 |  | BFC0-20 |  | BFC4-20 |  | BFCA-20 | $15 | Z6 |
| | | | 1 | 1 |  | BFC0-11 |  | BFC4-11 |  | BFCA-11 | | |
| | | | 0 | 2 |  | BFC0-02 |  | BFC4-02 |  | BFCA-02 | | |
| | | 4 | 4 | 0 |  | BFC0-40* |  | BFC4-40* |  | BFCA-40* | $26 | |
| | | | 2 | 2 |  | BFC0-22* |  | BFC4-22* |  | BFCA-22* | | |
| | | | 0 | 4 |  | BFC0-04* |  | BFC4-04* |  | BFCA-04* | | |
| | | | 3 | 1 |  | BFC0-31* |  | BFC4-31* |  | BFCA-31* | | |
| | | | 1 | 3 |  | BFC0-13* |  | BFC4-13* |  | BFCA-13* | | |
| | CWC025 | 2 | 2 | 0 |  | BFC025-20 | - | - | - | - | $15 | |
| | | | 1 | 1 |  | BFC025-11 | - | - | - | - | | |
| | | | 0 | 2 |  | BFC025-02 | - | - | - | - | | |

*Low consumption 24Vdc contactors can only use 2 pole auxiliary contact blocks

## Mechanical Interlock Block



- Front Mounting
- Mechanical interlock without width increase
- Allows assembly of auxiliary contact blocks, surge suppressor and timing relay

| For use with | Catalog Number | List Price | Multiplier |
|---|---|---|---|
| CWC07...16 CWCA0 | BIC0 | $10 | Z6 |

# Contactors

## CWC Series - Miniature Contactors

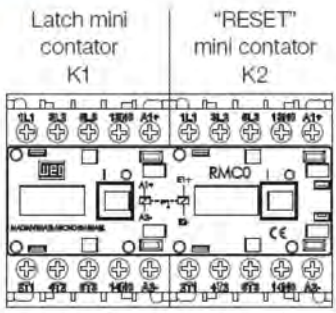
### RMCO Latch Block



- Front Mounting
- Mechanical interlock using 2 minicontactors (AC or DC coil)
- Can be mounted with the following accessories: auxiliary contact block, surge suppressor and timers.

| For use with | Catalog Number | List Price | Multiplier |
|---|---|---|---|
| CWC07...16 CWCA0 | RMCO | $12 | Z6 |

**Operation Description of Latch Block RMC0**

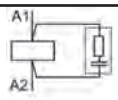
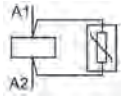
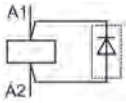



2 x CWC07...16 / CWCA0 + RMC0

## Surge suppressors

- Fast front mounting (clip on).
- Allows mounting with all the accessories.



| For use with | Circuit diagram | Voltage | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|
| CWC07...25 CWCA0 |  | 24-48V 50/60Hz | RCC0-2 D53 | $18 | Z6 |
| | | 50-127V 50/60Hz | RCC0-3 D55 | | |
| | | 130-250V 50/60Hz | RCC0-4 D63 | | |
| | | 400-510V 50/60Hz | RCC0-6 D73 | | |
| |  | 12-48V 50/60Hz / 12-60VDC | VRC0-1 E49 | | |
| | | 50-127V 50/60Hz / 60-180VDC | VRC0-2 E34 | | |
| | | 130-250V 50/60Hz / 180-300VDC | VRC0-3 E38 | | |
| | | 400-510V 50/60Hz | VRC0-5 D73 | | |
| CWC07...16 CWCA0 |  | 12-600VDC | DIC0-1 C33 | | |



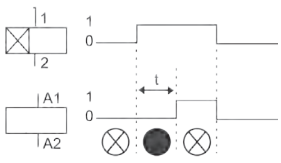
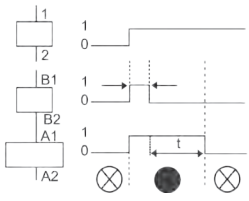
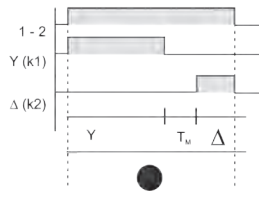
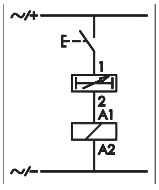
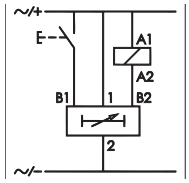
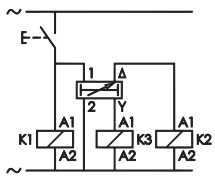
Data is subject to change without notice.

## Electonic timing relay

- Right-side fast mounting
- Up to 30 minutes timing
- LED status indication



| Function | Time | Voltages | Catalog Number | | List Price | Multiplier |
|---|---|---|---|---|---|---|
| On-Delay (TECO) | 3 - 0,3 to 3 seconds | 24-240V 50/60Hz - DC | TECO-U003S-E05 | | $150 | Z6 |
| | 10 - 1 to 10 seconds | | TECO-U010S-E05 | | | |
| | 30 - 3 to 30 seconds | | TECO-U030S-E05 | | | |
| | 60 - 6 to 60 seconds | | TECO-U060S-E05 | | | |
| | 100 - 10 to 100 seconds | | TECO-U100S-E05 | | | |
| | 300 - 30 to 300 seconds | | TECO-U300S-E05 | | | |
| | 1800 - 180 to 1800 seconds | | TECO-U030M-E05 | | | |
| Off-Delay (TDCO) | - | 24-60V 50/60Hz - DC 100-240V 50/60Hz - DC | 24-60V AC/DC | 100-240V AC/DC | $150 | |
| | 3 - 0,3 to 3 seconds | | TDCO-U010S-E04 | TDCO-U003S-E09 | | |
| | 10 - 1 to 10 seconds | | TDCO-U003S-E04 | TDCO-U010S-E09 | | |
| | 30 - 3 to 30 seconds | | TDCO-U030S-E04 | TDCO-U030S-E09 | | |
| | 60 - 6 to 60 seconds | | TDCO-U060S-E04 | TDCO-U060S-E09 | | |
| | 100 - 10 to 100 seconds | | TDCO-U100S-E04 | TDCO-U100S-E09 | | |
| | 300 - 30 to 300 seconds | | TDCO-U300S-E04 | TDCO-U300S-E09 | | |
| | 1800 - 180 to 1800 seconds | | TDCO-U030M-E04 | TDCO-U030M-E09 | | |
| Start-Delta (TETCO) | 30 - 3 to 30 seconds | 24-28V 50/60Hz - DC | TETCO-U030S-D52 | | $130 | |
| | | 110-130V 50/60Hz - DC | TETCO-U030S-D61 | | | |
| | | 220-240V 50/60Hz - DC | TETCO-U030S-D66 | | | |

| Functions | On-Delay TECO | Off-Delay TDCO | Start-Delta TETCO |
|---|---|---|---|
| Functional Diagram<br>Led On<br>Led Off |  |  |  |
| Diagrams |  |  |  |

# Contactors

## CWC Series - Miniature Contactors

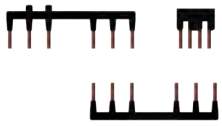
### Printed Circuit Board Connector

#### Easy-Connection Busbar

- Quick and easy assembly for wye-delta and reversing starters
- Allows assemble of overload relay RW17D, manual motor protectors MPW18 & MPW40 and timer

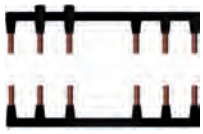
**Wye-Delta**

| Rating (HP) | | | Contactor | |
|---|---|---|---|---|
| 230V | 460V | 575V | K1=K2 | K3 |
| 3 | 7-1/2 | 7-1/2 | CWC07 | CWC07 |
| 5 | 7-1/2 | 10 | CWC09 | CWC07 |
| 5 | 10 | 10 | CWC012 | CWC07 |
| 7-1/2 | 15 | 15 | CWC016 | CWC09 |



**Reversing**

| Rating (HP) | | | Contactor |
|---|---|---|---|
| 230V | 460V | 575V | K1=K2 |
| 1-1/2 | 5 | 5 | CWC07 |
| 3 | 5 | 7-1/2 | CWC09 |
| 3 | 7-1/2 | 7-1/2 | CWC012 |
| 5 | 10 | 10 | CWC016 |



| For use with | Catalog Number | List Price | Multiplier |
|---|---|---|---|
| CWC07...16 CWCA0 | ECCO-SD | $34 | Z6 |
| | ECCO-R | $34 | |



Data is subject to change without notice.

# Technical Data

## General Data

| Catalog Number | | | CWCA0 | CWC07 | CWC09 | CWC012 | CWC016 | CWC025 |
|---|---|---|---|---|---|---|---|---|
| Standards | | | IEC 60947 / UL 508 | | | | | |
| Rated insulation voltage Ui (pollution degree 3) | IEC/EN 60947-4-1, VDE 0660 | (V) | 690 | | | | | |
| | UL, CSA | (V) | 600 | | | | | |
| Rated impuse withstand voltage Uimp (IEC/EN 60947-1) | | (kV) | 4 | | | | | |
| Rated operational frequency | | (Hz) | 25...400 | | | | | |
| Mechanical lifespan | AC coil Ops x 10"6" | | 10 | | | | | 3 |
| | DC coil Ops x 10"6" | | 12 | | | | | - |
| Electrical lifespan | Ie AC-3 Ops x 10"6" | | - | 1.4 | 1.3 | 1.2 | 1.1 | 0.6 |
| Degree of protection (VDE 0160) | Main circuits | | IP20 | | | | | |
| | Control circuits and auxiliary contacts | | IP20 | | | | | |
| Mounting | | | Screw or DIN rail 35 mm | | | | | |
| Coil terminals | | | 2 | | | | | |
| Vibration resistance | Contactor open | (g) | 2 | | | | | |
| | Contactor closed | (g) | 4 | | | | | |
| Mechanical shock resistance (½ sinusoid = 11ms) | Contactor open | (g) | 6 | | | | | |
| | Contactor closed | (g) | 10 | | | | | |
| Ambient temperature | Operation | | -25 °C ...+55 °C | | | | | |
| | Storage | | -55 °C ... +80 °C | | | | | |
| Normal values | | | Up to 3,000 m | | | | | |
| Altitude | 90% Ie / 80% Ue | | 3,000 to 4,000 m | | | | | |
| | 80% Ie / 75% Ue | | 4,000 to 5,000 m | | | | | |

## Control Circuit - Alternating Current (AC)

| Catalog Number | | | CWCA0, CWC07...16 | CWC025 |
|---|---|---|---|---|
| Rated insulation voltage Ui (pollution degree 3) | IEC/EN 60947-4-1, VDE 0660 | (V) | 1,000 | 1,000 |
| | UL, CSA | (V) | 600 | 600 |
| Coils rated voltage 50 Hz | | (V) | 10...550 | 10...550 |
| Coils rated voltage 60 Hz | | (V) | 12...660 | 12...660 |
| Coils rated voltage 50/60 Hz | | (V) | 12...660 | 12...660 |
| Coils rated voltage | | | | |
| Coil operating limits | | (xUs) | 0.85...1.1 | |
| Coil 60 Hz | Pick up | (xUs) | 0.4...0.76 | 0.4...0.76 |
| | Drop out | (xUs) | 0.25...0.65 | 0.25...0.65 |
| Coil 50/60 Hz | Pick up | (xUs) | 0.5...0.8 | 0.5...0.8 |
| | Drop out | (xUs) | 0.2...0.6 | 0.2...0.6 |
| Average consumption | | | 1.0 x Us coil cold state | |
| Coil 60 Hz | Magnetic circuit closed | (VA) | 2.5...3.5 | 10.8....13.2 |
| | Power factor | (cos φ) | 0.28 | 0.32 |
| | Power dissipation per pole | (W) | 2.6 | - |
| | Magnetic circuit closing | (VA) | 35 | 72 |
| | Power factor | (cos φ) | 0.85 | 0.93 |
| Coil 50/60 Hz | Magnetic circuit closed | (VA) | 2...3 | 4.56...5.8 |
| | Magnetic circuit closing | (VA) | 30 | 58 |
| Average time | Closing NO contacts | (ms) | 8...20 | 13...16 |
| | Opening NO contacts | (ms) | 6...13 | 13.5...17 |

## Control Circuit - Direct Current (DC)

| Catalog Number | | | CWCA0, CWC07...16 | | CWC07...16 |
|---|---|---|---|---|---|
| Coil type | | | Conventional | Low consumption | 4P (2P/2R) |
| Rated insulation voltage $U_i$ (pollution degree 3) | IEC/EN 60947-4-1, VDE 0660 | (V) | 1,000 | | |
| | UL, CSA | (V) | 600 | | |
| Standard voltages | | (V) | 12...440 | | |
| Coil operating limits | | (xUs) | 0.85...1.1 | | |
| | Pick up | (xUs) | 0.4...0.7 | | |
| | Drop out | (xUs) | 0.15...0.4 | | |
| Power consumption | | | 1.0 x Us coil cold state | | |
| | Magnetic circuit closed | (W) | 2.6...3.7 | 1.7...2.7 | 2.9...4 |
| | Magnetic circuit closing | (W) | 2.6...3.7 | 1.7...2.7 | 2.9...4 |
| Operation time | Closing NO contacts | (ms) | 35...45 | | |
| | Opening NO contacts | (ms) | 7...12 | | |

# Contactors

## CWC Series - Miniature Contactors

## Technical Data

### Power Circuit

| Catalog Number | | | CWC07 | CWC09 | CWC012 | CWC016 | CWC025 |
|---|---|---|---|---|---|---|---|
| Rated operational current $I_e$ | AC-3 ($U_e \leq 440$ V) | (A) | 7 | 9 | 12 | 16 | 22 |
| | AC-4 ($U_e \leq 440$ V) | (A) | 2.8 | 3.5 | 4.5 | 5 | 9 |
| | **AC-1 ($\theta \leq 55$ °C, $U_e \leq 690$ V)** | (A) | 18 | 20 | 22 | 22 | 32 |
| Rated operational voltage $U_e$ | IEC/EN 60947-4-1, VDE 0660 | (V) | 690 | | | | |
| | UL, CSA[1)] | (V) | 600 | | | | |
| Rated thermal current Ith ($\theta \leq 55$ °C) | | (A) | 18 | 20 | 22 | 22 | 32 |
| Making capacity - IEC/EN 60947 | | (A) | 70 | 90 | 120 | 160 | 250 |
| Breaking capacity IEC/EN 60947 | ($U_e \leq 400$ V) | (A) | 50 | 72 | 96 | 128 | 200 |
| | ($U_e$=500 V) | (A) | 50 | 72 | 96 | 128 | 200 |
| | ($U_e$=690 V) | (A) | 35 | 54 | 72 | 96 | 150 |
| Short-time current (no current flowing during recovery time of 10 min and $\theta \leq 40$ °C) | **1 seg** | (A) | 250 | 250 | 250 | 250 | - |
| | 5 seg | (A) | 125 | 125 | 125 | 125 | - |
| | 10 seg | (A) | 95 | 95 | 95 | 95 | - |
| | 30 seg | (A) | 70 | 70 | 70 | 70 | - |
| | 1 min | (A) | 50 | 50 | 50 | 50 | - |
| | 3 min | (A) | 40 | 40 | 40 | 40 | - |
| Protection against short-circuits with fuses (gL/gG) | @600 V - UL/CSA[1)] | (kA) | 5 | | | | |
| | Coordination type 1 | (A) | 35 | 35 | 35 | 35 | 50 |
| | Coordination type 2 | (A) | 20 | 20 | 25 | 25 | 35 |
| Average impedance per pole | | (mΩ) | 6 | 6 | 5 | 5 | 6 |
| Average power dissipation per pole | AC-1 | (W) | 1.9 | 2.4 | 2.4 | 2.4 | 6.1 |
| | AC-3 | (W) | 0.3 | 0.5 | 0.7 | 1.3 | 3.8 |
| **Utilization category** | | | | | | | |
| Rated operational current Ie ($\theta \leq 55$ °C) | **$U_e \leq 440$ V** | (A) | 7 | 9 | 12 | 16 | 22 |
| | $U_e \leq 500$ V | (A) | 6.2 | 7.5 | 8.8 | 13 | 16 |
| | $U_e \leq 690$ V | (A) | 4.5 | 5.5 | 6.6 | 10 | 13 |
| | $U_e \leq 1{,}000$ V | (A) | Not available | | | | |
| Rated operational power[1)] | 220 / 230 V | (kW) | 1.5 | 2.2 | 3 | 3.7 | 5.5 |
| | | (cv) | 2 | 3 | 4 | 5 | 7.5 |
| | 380 / V | (kW) | 3 | 3.7 | 5.5 | 7.5 | 11 |
| | | (cv) | 4 | 5 | 7.5 | 10 | 15 |
| | 400 / 415 V | (kW) | 3 | 3.7 | 5.5 | 7.5 | 11 |
| | | (cv) | 4 | 5 | 7.5 | 10 | 15 |
| | 440 V | (kW) | 3.7 | 4.5 | 5.5 | 7.5 | 11 |
| | | (cv) | 5 | 6 | 7.5 | 10 | 15 |
| | 500 V | (kW) | 3.7 | 4.5 | 5.5 | 7.5 | 11 |
| | | (cv) | 5 | 6 | 7.5 | 10 | 15 |
| | 660 / 690 V | (kW) | 3 | 3.7 | 5.5 | 7.5 | 11 |
| | | (cv) | 4 | 5 | 7.5 | 10 | 15 |
| Max. electrical operational per hour | 600 ops./h | (%) | 100 | 100 | 100 | 100 | 100 |
| | 1,200 ops./h | (%) | 75 | 75 | 75 | 75 | 75 |
| | 3,000 ops./h | (%) | 50 | 50 | 50 | 50 | 50 |
| **Utilization category AC-4** | | | | | | | |
| Rated operational current $I_e$ AC-4 ($U_e \leq 440$ V) | | (A) | 2.8 | 3.5 | 4.5 | 5 | 9 |
| Rated operational power[1)] (200,000 operations) | 220 / 230 V | (kW) | 0.55 | 0.75 | 0.75 | 1.1 | 2.2 |
| | | (cv) | 0.7 | 1 | 1 | 1.5 | 2.9 |
| | 380 / 400 V | (kW) | 1.1 | 1.1 | 1.8 | 2.2 | 4 |
| | | (cv) | 1.5 | 1.5 | 2.4 | 2.9 | 5.4 |
| | 415 V | (kW) | 1.1 | 1.5 | 2.2 | 2.2 | 4.5 |
| | | (cv) | 1.5 | 2 | 2.9 | 2.9 | 6 |
| | 440 V | (kW) | 1.1 | 1.5 | 2.2 | 2.2 | 4.5 |
| | | (cv) | 1.5 | 2 | 2.9 | 2.9 | 6 |
| | 500 V | (kW) | 1.1 | 1.5 | 2.2 | 2.2 | 4.5 |
| | | (cv) | 1.5 | 2 | 2.9 | 2.9 | 6 |
| | 660 / 690 V | (kW) | 1.1 | 1.5 | 2.2 | 2.2 | 4.5 |
| | | (cv) | 1.5 | 2 | 2.9 | 2.9 | 6 |

*Note: 1) For 50/60 Hz three-phase, 4 poles WEG standard motors. These values are only for reference and may change on the number of poles and motor design.*



Data is subject to change without notice.

# Technical Data

## Power Circuit

| Catalog Number | | | CWC07 | CWC09 | CWC012 | CWC016 | CWC025 |
|---|---|---|---|---|---|---|---|
| | | | Utilization category AC-1 | | | | |
| | | | 3P (NO) or 4P (4NO) | | | | 3P (NO) |
| Rated thermal current $I_{th}$ ($\theta \leq 55$ °C) | | (A) | 18 | 20 | 22 | 22 | 32 |
| Maximum operational current (up to 690 V) | $\theta \leq 40$ °C | (A) | 18 | 20 | 22 | 22 | 32 |
| | $\theta \leq 55$ °C | (A) | 18 | 20 | 22 | 22 | 32 |
| | $\theta \leq 70$ °C | (A) | 14.4 | 16 | 17.6 | 17.6 | 25.6 |
| Maximum operational power $\theta \leq 55$ °C 3-phase resistors | 220 / 230 V | (kW) | 6.8 | 7.5 | 8.3 | 8.3 | 12 |
| | 380 / 400 V | (kW) | 11.5 | 13 | 14.5 | 14.5 | 21 |
| | 415 / 440 V | (kW) | 13 | 14.5 | 16 | 16 | 23 |
| | 500 V | (kW) | 14.8 | 16.5 | 18 | 18 | 26 |
| | 660 / 690 V | (kW) | 20 | 22 | 25 | 25 | 36 |
| Current values for connection of | 2 poles in parallel | | $I_e$ x 1.7 | | | | |
| | 3 poles in parallel | | $I_e$ x 2.4 | | | | |
| | 4 poles in parallel | | $I_e$ x 3.2 | | | | |
| Percentage of the max. operational current at | 600 ops./h | (%) | 100 | | | | |
| | 1,200 ops./h | (%) | | | | | |
| | 3,000 ops./h | (%) | | | | | |
| | | | 2P (NO/NC) or 4P (2NO + 2NC) | | | | 2P (NO/NC) |
| Maximum operational power $\theta \leq 55$ °C (resistive load) | 220 / 230 V | (kW) | 3.9 | 4.4 | 4.8 | 4.8 | 6.6 |
| | 380 / 400 V | (kW) | 6.8 | 7.6 | 8.4 | 8.4 | 11.4 |
| | 415 / 440 V | (kW) | 7.5 | 8.4 | 9.2 | 9.2 | 12.5 |
| | 500 V | (kW) | 8.6 | 9.5 | 10.5 | 10.5 | 14.5 |
| | 660 / 690 V | (kW) | 11.8 | 13.1 | 14.4 | 14.4 | 19.5 |

## UL Power Ratings

| Catalog Number | | | CWC07 | CWC09 | CWC012 | CWC016 | CWC025 |
|---|---|---|---|---|---|---|---|
| General purpose current | (600 V) | (A) | 18 | 20 | 22 | 22 | 30 |
| 1-phase | 110 / 120 V | (HP) | 1/3 | 1/3 | 1/2 | 1 | 1 1/2 |
| | 208 V | (HP) | 3/4 | 1/2 | 1/2 | 2 | 3 |
| | 220 / 240 V | (HP) | 3/4 | 1/2 | 2 | 2 | 3 |
| 3-phase | 110 / 120 V | (HP) | 3/4 | 1 | 1 1/2 | 2 | 3 |
| | 200 V | (HP) | 1 1/2 | 2 | 3 | 3 | 5 |
| | 220 / 240 V | (HP) | 1 1/2 | 3 | 3 | 5 | 7 1/2 |
| | 440 / 480 V | (HP) | 5 | 5 | 7 1/2 | 10 | 15 |
| | 550 / 600 V | (HP) | 5 | 7 1/2 | 7 1/2 | 10 | 15 |

## Built-In Auxiliary Contacts

| Catalog Number | | | CWC07...16 | CWCA0 |
|---|---|---|---|---|
| Standards | | | IEC 60947-5-1, IEC 60947-4-1 | |
| Rated insulation voltage $U_i$ (pollution degree 3) | IEC, VDE 0660 | (V) | 690 | |
| | UL, CSA | (V) | 600 | |
| Rated operational voltage $U_e$ | IEC, VDE 0660 | (V) | 690 | |
| | UL, CSA | (V) | 600 | |
| Rated thermal current $I_{th}$ ($\theta \leq 55$ °C) | | (A) | 10 | |
| **Rated operational current $I_e$** | | | | |
| AC-15 (IEC 60947-5-1) | $U_e \leq 240$ V | (A) | 10 | |
| | 380-400 V | (A) | 6 | |
| | 415-440 V | (A) | 5 | |
| | 500 V | (A) | 4 | |
| | 660-690 V | (A) | 2 | |
| UL, CSA | | | A600 | |
| DC-13 (IEC 60947-5-1) | 24 V | (A) | 6 | |
| | 48 V | (A) | 4 | |
| | 110 V | (A) | 2 | |
| | 220 V | (A) | 0.7 | |
| UL, CSA | | | Q600 | |
| Making capacity (rms) | $U_e \leq 400$ V 50/60 Hz - AC-15 | (A) | 10 x $I_e$ (AC-15) | |
| Breaking capacity (rms) | $U_e \leq 400$ V 50/60 Hz - AC-15 | (A) | 10 x $I_e$ (AC-15) | |
| Max.fuse class gL-gG without welding (short-circuit protection) gL/gG | | (A) | 10 | |
| Control circuit reliability | (V / mA) | | 17 / 5 | |
| Electrical endurance | (millions operations) | | 1 | |
| Mechanical endurance | (millions operations) | | 10 | |

# Contactors

## CWC Series - Miniature Contactors

## Technical Data

### Auxiliary Contacts

| Catalog Number | | | BFC0 / BFC025 |
|---|---|---|---|
| Standards | | | IEC 60947-5-1, IEC 60947-4-1 |
| Rated insulation voltage $U_i$ (pollution degree 3) | IEC, VDE 0660 | (V) | 1,000 |
| | UL, CSA[1)] | (V) | 600 |
| Rated operational voltage $U_e$ | IEC, VDE 0660 | (V) | 690 |
| | UL, CSA[1)] | (V) | 600 |
| Rated thermal current $I_{th}$ ($\theta \leq 55$ °C) | | (A) | 10 |
| **Rated operational current $I_e$** | | | |
| AC-15 (IEC 60947-5-1) | $U_e \leq 240$ V | (A) | 10 |
| | 380-400 V | (A) | 6 |
| | 415-440 V | (A) | 6 |
| | 500 V | (A) | 4 |
| | 660-690 V | (A) | - |
| UL, CSA[1)] | | | A600 |
| DC-13 (IEC 60947-5-1) | 24 V | (A) | 1.5 |
| | 60 V | (A) | 0.5 |
| | 110 V | (A) | 0.4 |
| | 220-240 V | (A) | 0.4 |
| UL, CSA[1)] | | | Q600 |
| Making capacity (rms) | $U_e \leq 400$ V 50/60 Hz - AC-15 | (A) | 30 |
| Breaking capacity (rms) | $U_e \leq 400$ V 50/60 Hz - AC-15 | (A) | 3 |
| Max.fuse class gL-gG without welding (short-circuit protection) | | (A) | 10 |
| Control circuit reliability | (V / mA) | | 17 / 5 |
| Electrical endurance | (millions operations) | | 1 |
| Mechanical endurance | (millions operations) | | 10 |

### Timing relay

| | | |
|---|---|---|
| Rated insulation voltage ($U_i$) | V | 300 |
| Supply voltage ($U_e$) | 1 - 2 terminals | 24...240 V dc/ V ac 50/60 Hz (TEC0) |
| | | 24...60 V dc/ V ac 50/60 Hz (TDC0) |
| | | 100...240 V dc/ V ac 50/60 Hz (TDC0) |
| | | 220-240 V ac 50/60 Hz (TETC0) |
| | | 110-130 V ac 50/60 Hz (TETC0) |
| | | 24-28 V ac 50/60 Hz (TETC0) |
| Control voltage ($U_c$) only TDC0 - pag A25 | 2 - B1 terminals | 24...60 V dc/ V ac 50/60 Hz (TDC0) |
| | | 100...240 V dc/ V ac 50/60 Hz (TDC0) |
| Voltage operational limits | | 0.85...1.1 x Uc ( V ac) |
| | | 0.8...1.25 x Uc ( V dc) |
| Consumption | mA | ≤ 5 |
| Minimum time for reset (recovery time) | ms | 650 |
| Minimum control time (only TDC0) | ms | 50 |
| Setting accuracy (% of the full scale value) | % | +/-5 |
| Repeat accuracy | % | +/-1 |
| Changeover time Y - Δ | ms | 50 |



Data is subject to change without notice.

# Technical Data

## Terminal Capacity and Tightening Torque - Power and Built-In Auxiliary Terminals

| Catalog Number | CWC07...CWC016 / CWCA0 | | | CWC025 | | |
|---|---|---|---|---|---|---|
| Screw type | M3x 8<br>Flat / Phillips | | | M3.5x 9<br>Flat / Phillips | | |
| Power terminal and built-in auxiliary terminal[1)] | Finely stranded with end sleeve | Stranded and finely stranded without end sleeve | Solid | Finely stranded with end sleeve | Stranded and finely stranded without end sleeve | Solid |
| mm² | 1x 0.5...2.5<br>2x 0.5...1.5 | 1x 0.75...2.5<br>2x 0.75...2.5 | 1x 0.5...2.5<br>2x 0.5...2.5 | 1x 1...6<br>2x 1...2.5<br>2x 2.5...4 | 1x 1...6<br>2x 1...2.5<br>2x 2.5...6 | 1x 1...6<br>2x 1...2.5<br>2x 2.5...6 |
| AWG<br>(UL) | 18...12 | | | 18...10 | | |
| Tightening torque (N.m) | 1.1 | | | 1.5 | | |
| Tightening torque (lb.in) (UL) | 10 | | | 13 | | |

*Note: 1) Built-in auxiliary terminals not available for CWC025.*

## Terminal Capacity and Tightening Torque - Coil Terminals

| Catalog Number | CWC07...CWC025 / CWCA0 | | |
|---|---|---|---|
| Screw type | M3.5x 8<br>Flat / Phillips | | |
| Coil terminals | Finely stranded with end sleeve | Stranded and finely stranded without end sleeve | Solid |
| mm² | 1x 0.5...2.5<br>2x 0.5...1.5 | 1x 0.75...2.5<br>2x 0.75...2.5 | 1x 0.5...2.5<br>2x 0.5...2.5 |
| AWG (UL) | 22...12 | | |
| Tightening torque (N.m) | 1.1 | | |
| Tightening torque (lb.in) (UL) | 10 | | |

## Terminal Capacity and Tightening Torque - Auxiliary Contact Blocks

| Catalog Number | BFC0 / BFCA / BFC4 / BFC025 | | |
|---|---|---|---|
| Screw type | M3.5x9<br>Flat / Phillips | | |
| Auxiliary contact block | Finely stranded with end sleeve | Stranded and finely stranded without end sleeve | Solid |
| mm² | 1x 0.5...2.5<br>2x 0.5...1.5 | 1x 0.75...4<br>2x 0.75...2.5 | 1x 0.5...4<br>2x 0.5...2.5 |
| AWG (UL) | 22...14 | | |
| Tightening torque (N.m) | 1.1 | | |
| Tightening torque (lb.in) (UL) | 10 | | |

## Terminal Capacity - Power, Coil and Auxiliary Contact Blocks

| Catalog Number | CWC07_S... CWC012_S / CWCA0_S | | BFC0_S / BFCA_S / BFC4_S |
|---|---|---|---|
| Terminal type | Spring terminal | | |
| Power terminal | Finely stranded with end sleeve | Solid | |
| mm² | 2x 1...1.5 | 2x 1...1.5 | |
| Auxiliary contact block /<br>built-in auxiliary terminal / or coil terminal | Finely stranded with end sleeve | Solid | Solid or finely stranded with end sleeve |
| mm² | 2x 0.5...1.5 | 2x 0.5...1.5 | 2x 0.5...1.5 |
| AWG | 18...12 | | 22...16 |

# Contactors

## CWC Series - Miniature Contactors

## Technical Data

### Utilization Category DC-1, DC-3 and DC-5

### DC-1(L/R ≤ 1ms)

| | Catalog Number | CWC07 | CWC09 | CWC012 | CWC016 | CWC025 |
|---|---|---|---|---|---|---|
| Ue | Serie poles | Rated operational current Ie (A) | | | | |
| ≤ 24 V | 1 | 10 | 10 | 16 | 16 | 18 |
| | 2 | 15 | 15 | 20 | 20 | 25 |
| | 3 | 15 | 15 | 22 | 22 | 25 |
| | 4 | 15 | 15 | 22 | 22 | - |
| ≤ 48 V | 1 | 10 | 10 | 13 | 13 | 16 |
| | 2 | 15 | 15 | 20 | 20 | 25 |
| | 3 | 15 | 15 | 22 | 22 | 25 |
| | 4 | 15 | 15 | 22 | 22 | - |
| ≤ 60 V | 1 | 8 | 8 | 10 | 10 | 13 |
| | 2 | 15 | 15 | 18 | 18 | 25 |
| | 3 | 15 | 15 | 22 | 22 | 25 |
| | 4 | 15 | 15 | 22 | 22 | - |
| ≤ 125 V | 1 | 4 | 4 | 5 | 5 | 6 |
| | 2 | 8 | 8 | 10 | 10 | 13 |
| | 3 | 12 | 12 | 16 | 16 | 18 |
| | 4 | 15 | 15 | 19 | 19 | - |
| ≤ 220 V | 1 | 0.6 | 0.6 | 0.7 | 0.7 | 1 |
| | 2 | 5 | 5 | 6 | 6 | 8 |
| | 3 | 9 | 9 | 10 | 10 | 14 |
| | 4 | 12 | 12 | 15 | 15 | - |
| ≤ 440 V | 1 | 0.2 | 0.2 | 0.3 | 0.3 | 0.4 |
| | 2 | 0.6 | 0.6 | 0.7 | 0.7 | 1.5 |
| | 3 | 3.5 | 3.5 | 4 | 4 | 5 |
| | 4 | 8 | 8 | 9 | 9 | - |
| ≤ 600 V | 1 | - | - | - | - | - |
| | 2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.6 |
| | 3 | 1 | 1 | 1.5 | 1.5 | 2 |
| | 4 | 2 | 2 | 4 | 4 | - |

### DC-3(L/R ≤ 2.5ms)

| | Catalog Number | CWC07 | CWC09 | CWC012 | CWC016 | CWC025 |
|---|---|---|---|---|---|---|
| Ue | Serie poles | Rated operational current Ie (A) | | | | |
| ≤ 24 V | 1 | 9 | 9 | 9 | 9 | 10 |
| | 2 | 12 | 12 | 12 | 12 | 15 |
| | 3 | 15 | 15 | 15 | 15 | 18 |
| | 4 | 15 | 15 | 15 | 15 | - |
| ≤ 48 V | 1 | 8 | 8 | 8 | 8 | 10 |
| | 2 | 12 | 12 | 12 | 12 | 15 |
| | 3 | 15 | 15 | 15 | 15 | 18 |
| | 4 | 15 | 15 | 15 | 15 | - |
| ≤ 60 V | 1 | 5 | 5 | 5 | 5 | 8 |
| | 2 | 10 | 10 | 10 | 10 | 13 |
| | 3 | 14 | 14 | 14 | 14 | 18 |
| | 4 | 15 | 15 | 15 | 15 | - |
| ≤ 125 V | 1 | 1.5 | 1.5 | 1.5 | 1.5 | 2 |
| | 2 | 5.5 | 5.5 | 5.5 | 5.5 | 7 |
| | 3 | 10 | 10 | 10 | 10 | 13 |
| | 4 | 14 | 14 | 14 | 14 | - |
| ≤ 220 V | 1 | 0.4 | 0.4 | 0.4 | 0.4 | 0.6 |
| | 2 | 1.5 | 1.5 | 1.5 | 1.5 | 2 |
| | 3 | 7 | 7 | 7 | 7 | 8 |
| | 4 | 11 | 11 | 11 | 11 | - |
| ≤ 440 V | 1 | - | - | - | - | - |
| | 2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 |
| | 3 | 1 | 1 | 1 | 1 | 1.5 |
| | 4 | 3 | 3 | 3 | 3 | - |
| ≤ 600 V | 1 | - | - | - | - | - |
| | 2 | - | - | - | - | - |
| | 3 | 0.6 | 0.6 | 0.6 | 0.6 | 0.8 |
| | 4 | 1.5 | 1.5 | 1.5 | 1.5 | - |

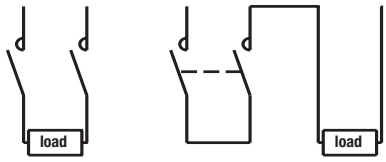
### DC-5(L/R ≤ 15ms)

| | Catalog Number | CW07 | CWC07 | CWC09 | CWC012 | CWC016 | CWC025 |
|---|---|---|---|---|---|---|---|
| $U_e$ | Serie poles | Rated operational current $I_e$ (A) | | | | | |
| ≤ 24 V | 1 | 1.5 | 8 | 8 | 8 | 8 | 10 |
| | 2 | 2.5 | 12 | 12 | 12 | 12 | 14 |
| | 3 | 3 | 15 | 15 | 15 | 15 | 18 |
| | 4 | 3 | 15 | 15 | 15 | 15 | - |
| ≤ 48 V | 1 | 1.5 | 8 | 8 | 8 | 8 | 9 |
| | 2 | 2.5 | 12 | 12 | 12 | 12 | 14 |
| | 3 | 3 | 15 | 15 | 15 | 15 | 18 |
| | 4 | 3 | 15 | 15 | 15 | 15 | - |
| ≤ 60 V | 1 | 1.2 | 5 | 5 | 5 | 5 | 7 |
| | 2 | 2.5 | 10 | 10 | 10 | 10 | 12 |
| | 3 | 3 | 14 | 14 | 14 | 14 | 18 |
| | 4 | 3 | 15 | 15 | 15 | 15 | - |
| ≤ 125 V | 1 | 0.7 | 1.5 | 1.5 | 1.5 | 1.5 | 0.8 |
| | 2 | 1.5 | 5.5 | 5.5 | 5.5 | 5.5 | 5 |
| | 3 | 2.5 | 9 | 9 | 9 | 9 | 12 |
| | 4 | 3 | 14 | 14 | 14 | 14 | - |
| ≤ 220 V | 1 | 0.1 | 0.4 | 0.4 | 0.4 | 0.4 | - |
| | 2 | 0.5 | 0.7 | 0.7 | 0.7 | 0.7 | 0.8 |
| | 3 | 1.5 | 2.5 | 2.5 | 3 | 3 | 3 |
| | 4 | 2.2 | 9 | 9 | 9 | 9 | - |
| ≤ 440 V | 1 | - | - | - | - | - | - |
| | 2 | - | - | - | - | - | - |
| | 3 | 0.1 | 0.3 | 0.3 | 0.3 | 0.3 | 0.5 |
| | 4 | 0.3 | 0.7 | 0.7 | 0.7 | 0.7 | - |
| ≤ 600 V | 1 | - | - | - | - | - | - |
| | 2 | - | - | - | - | - | - |
| | 3 | - | - | - | - | - | - |
| | 4 | - | 0.2 | 0.2 | 0.2 | 0.2 | - |

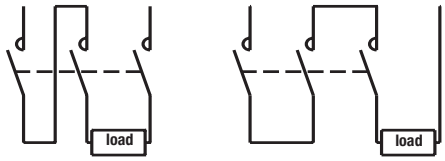
1 serie pole



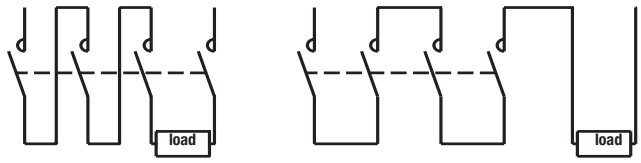

2 serie poles




3 serie poles




4 serie poles



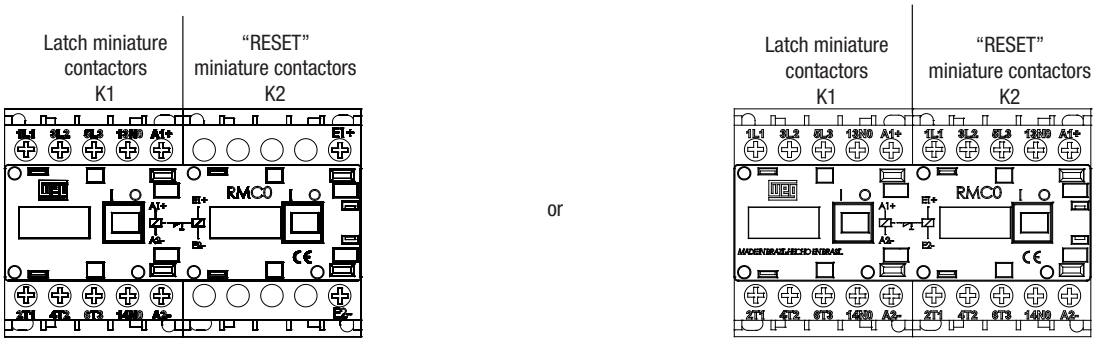



Data is subject to change without notice.

## Technical Data

| Timing relay | | |
|---|---|---|
| Rated insulation voltage ($U_i$) | V | 300 |
| Supply voltage ($U_e$) | 1 - 2 terminals | 24...240 V dc/ V ac 50/60 Hz (TEC0) |
| | | 24...60 V dc/ V ac 50/60 Hz (TDC0) |
| | | 100...240 V dc/ V ac 50/60 Hz (TDC0) |
| | | 220-240 V ac 50/60 Hz (TETC0) |
| | | 110-130 V ac 50/60 Hz (TETC0) |
| | | 24-28 V ac 50/60 Hz (TETC0) |
| Control voltage ($U_c$) only TDC0 - pg A25 | 2 - B1 terminals | 24...60 V dc/ V ac 50/60 Hz (TDC0) |
| | | 100...240 V dc/ V ac 50/60 Hz (TDC0) |
| Voltage operational limits | | 0.85...1.1 x Uc ( V ac) |
| | | 0.8...1.25 x Uc ( V dc) |
| Consumption | mA | ≤ 5 |
| Minimum time for reset (recovery time) | ms | 650 |
| Minimum control time (only TDC0) | ms | 50 |
| Setting accuracy (% of the full scale value) | % | +/-5 |
| Repeat accuracy | % | +/-1 |
| Changeover time Y - Δ | ms | 50 |

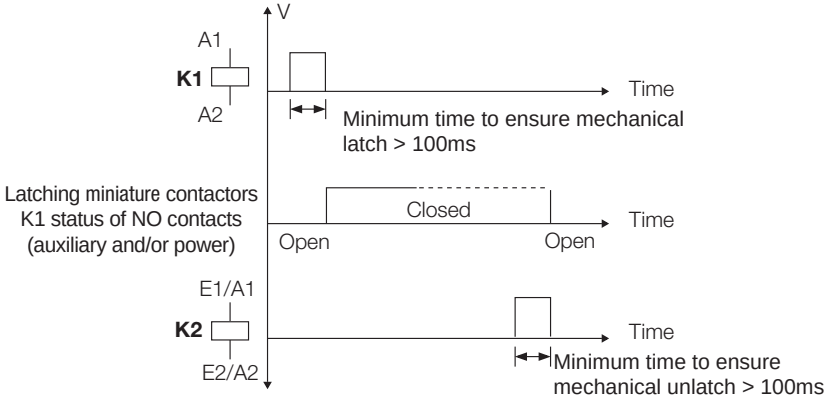
### Operation Description of Latch Block RMC0 or Miniature Contactors CWCH0




CWCH07...16

2 x CWC07...16 / CWCA0 + RMC0

### Functional Diagram




- After a minimum pulse of 100ms on miniature contactors coil (K1), the RMC0 will keep K1 contacts switched on
- The miniature contactors K1 will only return to rest position after miniature contactors coil (K2) be energized by a releasing pulse
- The mechanical latch will always and only happen on miniature contactors (K1).

*Note: if RESET miniature contactors coil (K2) remains energized, the latching of miniature contactors (K1) is not enabled.*

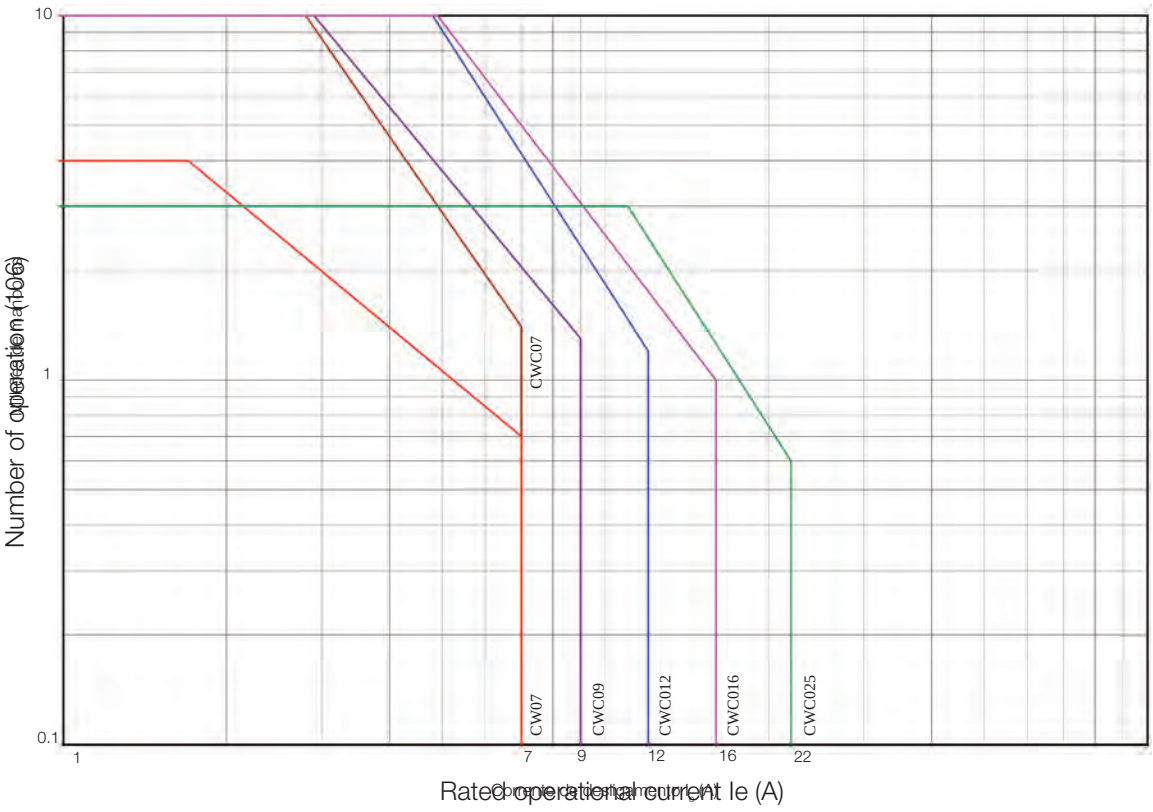
# Contactors

## CWC Series - Miniature Contactors

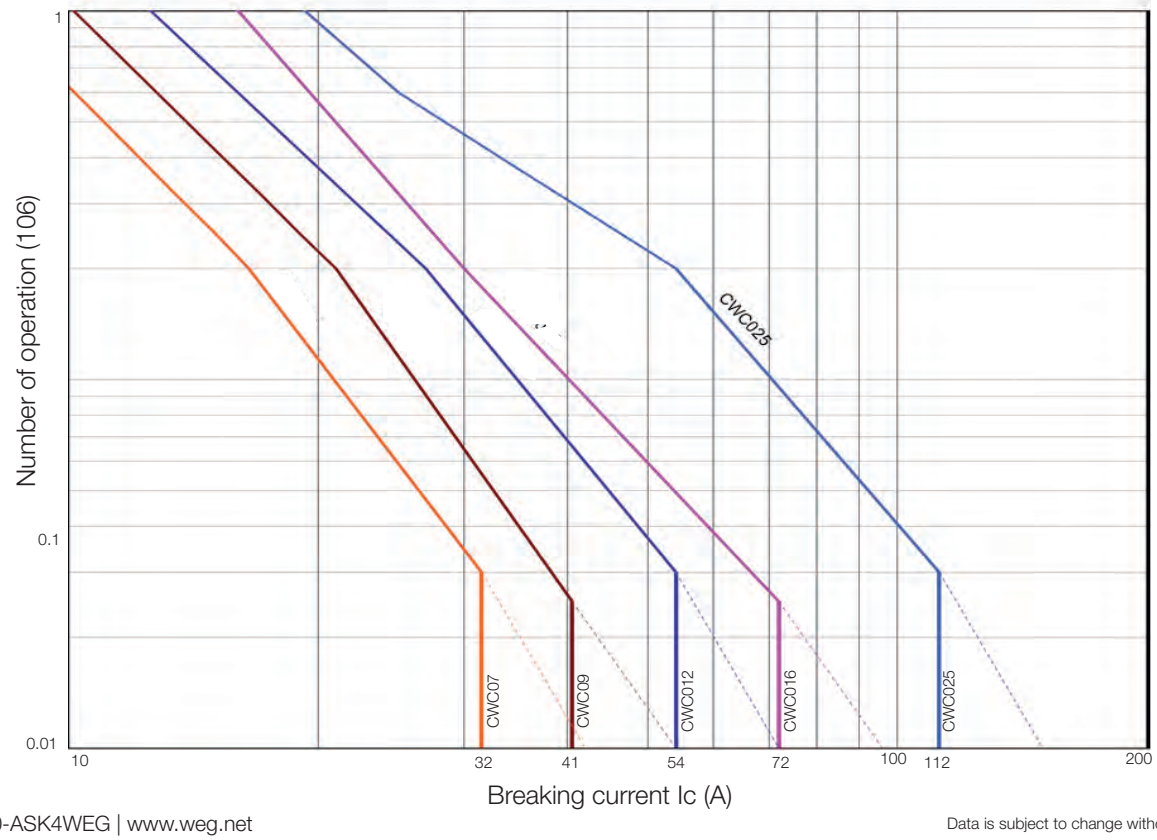
## Technical Data

### Electrical Lifespan

**AC-3 ($U_e \leq 415$ V ac e $U_e \leq 440$ V ac)**




**AC-4 ($U_e \leq 440$ V ac)**

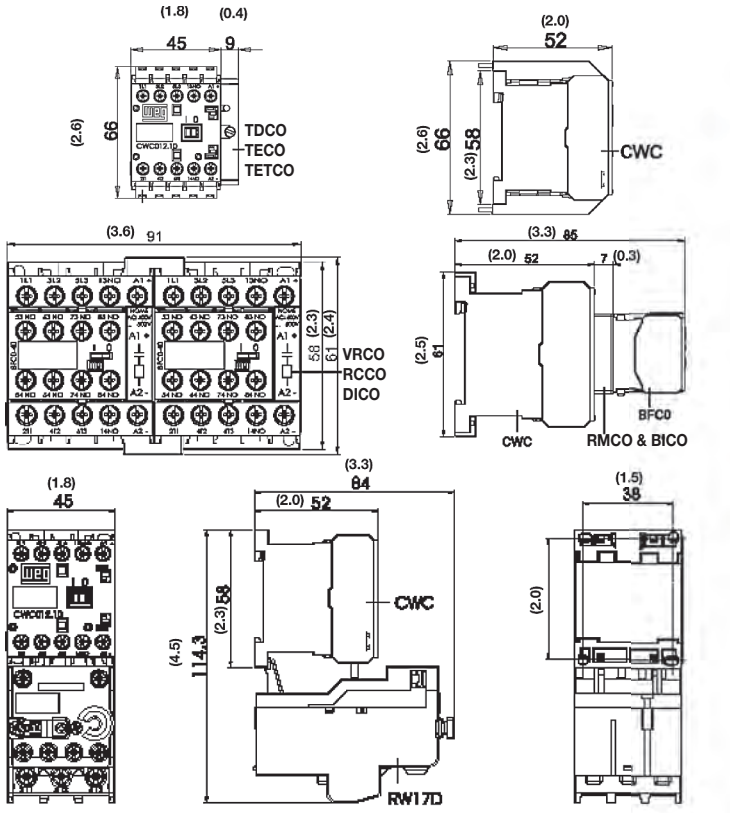




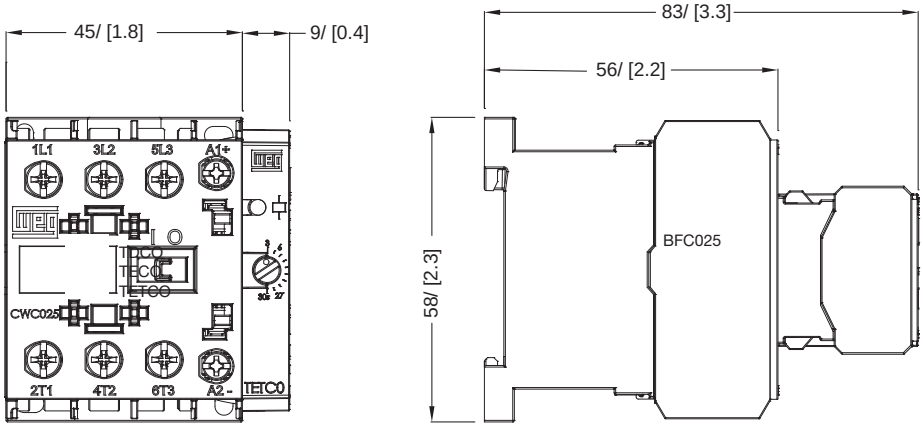

Data is subject to change without notice.

## Dimensions mm (in)

## CWC07...016 AND CWCA0




## CWC025



# CWB Line

Developed according to IEC 60947 and UL 508 international standards, the new WEG CWB line of contactors meets the requirements of a wide range of industrial applications. The CWBs are designed with the visual pattern and identity of WEG, a brand recognized worldwide for its quality.



## Standard Features:

- "Zero-Width" Mechanical Interlock
- Simple and Compact Mounting of Surge Suppressor Blocks
- Contactor Coil Operated on AC or DC
- Simple and Organized Control Circuits
- Additional Contact Blocks
- Easy Access Power and Control Terminals

UL File No. E202315

## CWB Contactor Catalog Number Sequence

| CWB | 12 | - | 11 | - | 30 | D15 |
|---|---|---|---|---|---|---|

**Contactor Series**

| |
|---|
| CWB - IEC |
| CWBN - NEMA |

**Current Rating**

| | |
|---|---|
| IEC | 9: 9 Amps |
| | 12: 12 Amps |
| | 18: 18 Amps |
| | 25: 25 Amps |
| | 32: 32 Amps |
| | 38: 38 Amps |
| | 40: 40 Amps |
| | 50: 50 Amps |
| | 65: 65 Amps |
| | 80: 80 Amps |
| NEMA | 00: 9 Amps |
| | 0: 18 Amps |
| | 1: 25 Amps |
| | 2: 50 Amps |

**Auxiliary Contacts**

| |
|---|
| 11: 1NO + 1NC |

**Power Poles**

| |
|---|
| 30: 3 NO Power Poles |

**Voltage Code**

| AC Voltage | DC Voltage |
|---|---|
| D02: 24V AC | C02: 12V DC |
| D07: 48V AC | C03: 24V DC |
| D15: 120V AC | C07: 48V DC |
| D77: 208V AC | C09: 60V DC |
| V24: 208 - 240V AC | C12: 110V DC |
| D25: 240V AC | C13: 125V DC |
| D33: 380V AC | C15: 220V DC |
| D39: 480V AC | |
| D45: 600V AC | |



Data is subject to change without notice.

## Selection Table

### Three-Pole CWB Contactors from 9 A to 80 A (AC-3)

| Ie máx. (Ue ≤440 V) | Ie = Ith (Ue ≤690 V) θ ≤55 °C | Maximum UL Horsepower | | | | | | Built-in auxiliary contacts per contactor | | Catalog Number | List Price AC Coil | List Price DC Coil | Multiplier |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AC-3 A | AC-1 A | Single Phase | | Three Phase | | | | 3 4 NO | 1 2 NC | | | | |
| | | 115V | 230V | 200V | 230V | 480V | 575V | | | | | | |
| 9 | 25 | 3/4 | 1.5 | 3 | 3 | 5 | 7 1/2 | 1 | 1 | CWB9-11-30* | $72 | $118 | Z1 |
| 12 | 25 | 3/4 | 2 | 3 | 3 | 7 1/2 | 10 | 1 | 1 | CWB12-11-30* | $89 | $123 | |
| 18 | 32 | 1 | 3 | 5 | 5 | 10 | 15 | 1 | 1 | CWB18-11-30* | $103 | $150 | |
| 25 | 40 | 2 | 5 | 7 1/2 | 7 1/2 | 15 | 15 | 1 | 1 | CWB25-11-30* | $118 | $177 | |
| 32 | 50 | 3 | 5 | 10 | 10 | 20 | 25 | 1 | 1 | CWB32-11-30* | $140 | $220 | |
| 38 | 50 | 3 | 7.5 | 10 | 10 | 25 | 25 | 1 | 1 | CWB38-11-30* | $164 | $282 | |
| 40 | 60 | 3 | 7 1/2 | 10 | 15 | 30 | 30 | 1 | 1 | CWB40-11-30* | $164 | $282 | |
| 50 | 90 | 3 | 10 | 15 | 15 | 40 | 40 | 1 | 1 | CWB50-11-30* | $225 | $310 | |
| 65 | 110 | 5 | 10 | 20 | 20 | 50 | 50 | 1 | 1 | CWB65-11-30* | $255 | $350 | |
| 80 | 110 | 7 1/2 | 15 | 20 | 25 | 50 | 60 | 1 | 1 | CWB80-11-30* | $270 | $417 | |

### Three-Pole CWB NEMA Rated Sizes 00 - 2

| Ie máx. (Ue ≤440 V) | Ie = Ith (Ue ≤690 V) θ ≤55 °C | Maximum UL Horsepower | | | | | | Built-in auxiliary contacts per contactor | | Catalog Number | List Price AC Coil | List Price DC Coil | Multiplier |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AC-3 A | AC-1 A | Single Phase | | Three Phase | | | | 3 4 NO | 1 2 NC | | | | |
| | | 115V | 230V | 200V | 230V | 480V | 575V | | | | | | |
| 9 | 25 | 4-Mar | 1 1/2 | 3 | 3 | 5 | 7 1/2 | 1 | 1 | CWBN00-11-30* | $103 | $150 | Z1 |
| 18 | 32 | 1 | 3 | 5 | 5 | 10 | 15 | 1 | 1 | CWBN0-11-30* | $118 | $177 | |
| 25 | 40 | 2 | 5 | 7 1/2 | 7 1/2 | 15 | 15 | 1 | 1 | CWBN1-11-30* | $164 | $220 | |
| 50 | 90 | 3 | 10 | 15 | 15 | 40 | 40 | 1 | 1 | CWBN2-11-30* | $233 | $330 | |

Replace "♦" by the appropriate coil voltage code[3].

### Alternating Current

| Code | D02 | D07 | D15 | D77 | D25 | D33 | D39 | D45 | V24 |
|---|---|---|---|---|---|---|---|---|---|
| V (50/60 Hz) | 24 | 48 | 120 | 208 | 240 | 380 | 480 | 600 | 208-254v |

### Direct Current

| Code | C03 | C07 | C09 | C12 | C13 | C15 |
|---|---|---|---|---|---|---|
| V dc | 24 | 48 | 60 | 110 | 125 | 220 |

*Notes: 1) Orientative values.*
*2) Weight for contactors with control circuit in alternate current. For control circuit in direct current, add 0.121 kg to the alternating-current models.*
*3) Other voltages on request.*

# Contactors

CWB Series

## Accessories and Spare Parts

### Front Mounted Auxiliary Contact Blocks[4)]



.063 kg

| For use with | Max. nº of additional contacts / contactor | Auxiliary contacts NO | Auxiliary contacts NC | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|---|
| CWB9...38 | 4 / CWB9...38<br>4 / CWB40...80<br>4 / CWB00...2 | 1 | 1 | BFB-11[1)] | $20 | Z1 |
| | | 2 | 0 | BFB-20 | $20 | |
| | | 0 | 2 | BFB-02[1)] | $20 | |
| | | 2 | 2 | BFB-22[1)] | $32 | |
| | | 2 | 2 | BFB-22 EL[3)] | $32 | |
| | | 4 | 0 | BFB-40 | $32 | |
| | | 0 | 4 | BFB-04[1)] | $32 | |
| | | 3 | 1 | BFB-31[1)] | $32 | |
| | | 1 | 3 | BFB-13[1)] | $32 | |

### Side Mounted Auxiliary Contact Blocks[4)]



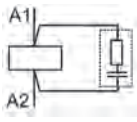
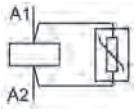
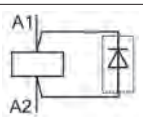
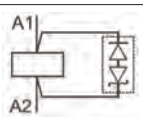
.034 kg

| For use with | Max. nº of additional contacts / contactor | Auxiliary contacts NO | Auxiliary contacts NC | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|---|
| CWB9...38 | 4 / CWB9...38<br>4 / CWB40...80<br>4 / CWB00...2 | 1 | 1 | BLB-11[1)] | $22 | Z1 |
| | | 2 | 0 | BLB-20 | | |
| | | 0 | 2 | BLB-02[1)] | | |
| | | 1 | 1 | BLRB-11[1)2)] | | |
| | | 2 | 0 | BLRB-20[2)] | | |
| | | 0 | 2 | BLRB-02[1)2)] | | |

### Plug-In Surge Suppressors




.008 kg

| For use with | Voltage | Diagram | Catalog Number | List Pice | Multiplier |
|---|---|---|---|---|---|
| CWB9...38<br>CWB40...80<br>CWB00...2 | 24...48 V 50/60 Hz |  | RCB-D53 | $30 | Z1 |
| | 50...127 V 50/60 Hz | | RCB-D55 | | |
| | 130...250 V 50/60 Hz | | RCB-D63 | | |
| | 12...48 V 50/60 Hz / 12...60 V dc |  | VRB-E49 | | |
| | 50...127 V 50/60 Hz / 60...180 V dc | | VRB-E34 | | |
| | 130...250 V 50/60 Hz / 180...300 V dc | | VRB-E50 | | |
| | 277...380 V 50/60 Hz / 300...510 V dc | | VRB-E41 | | |
| | 400...510 V 50/60 Hz | | VRB-D73 | | |
| | 12...600 V dc |  | DIB-C33 | | |
| | 12...250 V dc |  | DIZB-C26 | | |

*Notes: 1) The arrangement of the contacts meets IEC 60947-4-1 Annex F (Mirror Contact) and IEC 60947-5-1 Annex L (Mechanically Linked Contact) requirements.*
*2) For combination of 2 side-mounted auxiliary contact blocks at the same side of the contactor.*
*3) BFB-22-EL: besides the regular contacts NO and NC, there are two special contacts: early make and late break.*
*4) The maximum number of auxiliary contacts assembled on the contactor are 4.*



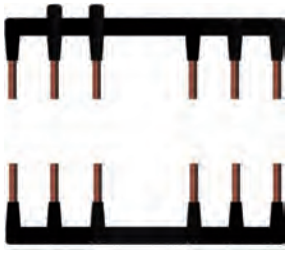
Data is subject to change without notice.

# Accessories and Spare Parts

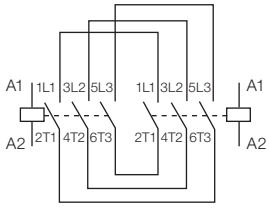
## Mechanical Interlock

| Image | For use with | Description | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|
|  | CWB9...38<br>CWB00...1 | Mounting set for interlocking two contactors with the same frame type.<br>Fitting through snaps without tools. | IM1 | $12 | Z1 |
|  | CWB40...80<br>CWB2 | | IM2 | $15 | |

## Easy-Connection Setting of the Power Terminals for Reversing Starters

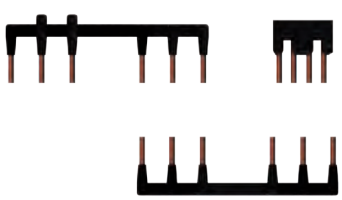
| Image | For use with | Orientative rated operational power for reversing starters (AC-4 duty) for three-phase 4-pole motors - 60 Hz - 1,800 rpm | | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|---|
| | K1=K2 | 230 V kW / cv | 400 V kW / cv | | | |
|  | CWB9/CWB00 | 1.5 / 2.0 | 2.2 / 2.9 | EC-R1 | $60 | Z1 |
| | CWB12 | 1.5 / 2.0 | 3.7 / 5.0 | | | |
| | CWB18/CWB0 | 2.2 / 2.9 | 4 / 5.4 | | | |
| | CWB25/CWB1 | 3 / 4.0 | 5.5 / 7.4 | | | |
| | CWB32 | 4 / 5.4 | 7.5 / 10.1 | | | |
| | CWB38 | 4 / 5.4 | 7.5 / 10.1 | | | |
| | CWB40 | 4.5 / 6.0 | 9.2 / 12.3 | EC-R2 | $75 | |
| | CWB50/CWB2 | 5.5 / 7.4 | 11 / 14.7 | | | |
| | CWB65 | 7.5 / 10.1 | 15 / 20.1 | | | |
| | CWB80 | 11 / 14.7 | 18.5 / 24.8 | | | |

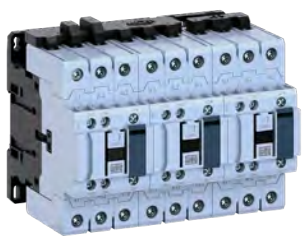


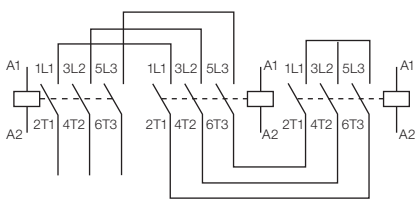



*Electric diagram*

## Power Terminal Easy-Connection Set for Star-Delta Starters

| Image | For use with | | Orientative rated operational power in AC-3 Three-phase motor - IV poles - 1,800 rpm | | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|---|---|
| | K1=K2 | K3 | 230 V kW / cv | 400 V kW / cv | | | |
|  | CWB9 | CWB9 | 4 / 5.4 | 7.5 / 10 | EC-SD1 | $75 | Z1 |
| | CWB12 | CWB9 | 5.5 / 7.5 | 11 / 15 | | | |
| | CWB18 | CWB12 | 9.2 / 12.5 | 15 / 20 | | | |
| | CWB25 | CWB18 | 11 / 15 | 22 / 30 | | | |
| | CWB32 | CWB18 | 15 / 20 | - | | | |
| | CWB38 | CWB25 | 18.5 / 25 | 30 / 40 | | | |
| | CWB50 | CWB40 | 22 / 30 | 45 / 61 | EC-SD2 | $90 | |
| | CWB65 | CWB40 | 30 / 40 | 55 / 75 | | | |
| | CWB80 | CWB50 | 45 / 61 | 75 / 102 | | | |






*Electric diagram*

# Contactors

CWB Series

## Accessories and Spare Parts

### Spare Coils for Contactors[1)]

| Image | For use with | Control type | Reference to fill in with the control voltage | List Price | Multiplier |
|---|---|---|---|---|---|
|  | CWB9...38<br>CWB00...1 | AC | **BRB-38♦** | **$22** | Z1 |
|  | CWB40...80<br>CWB2 | AC | **BRB-80♦** | **$40** | |
|  | CWB40...80<br>CWB2 | DC | **BRB-80♦** | **$110** | |

Replace "♦" by the appropriate coil voltage code.

To complete the Part Number, replace "♦" by the appropriate coil voltage code.

### Alternating Current

| Coil voltage code | D02 | D07 | D13 | D15 | D17 | D77 | D23 | D24 | D25 | D33 | D34 | D35 | D36 | D39 | D45 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V (50/60 Hz) | 24 | 48 | 110 | 120 | 127 | 208 | 220 | 230 | 240 | 380 | 400 | 415 | 440 | 480 | 600 |

***Note: other coil voltages available upon request.***

### Direct Current

| Code | C03 | C07 | C09 | C12 | C13 | C15 |
|---|---|---|---|---|---|---|
| V dc | 24 | 48 | 60 | 110 | 125 | 220 |

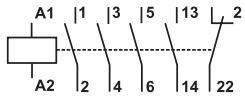
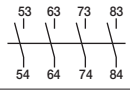
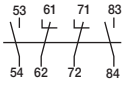
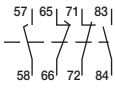
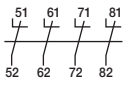
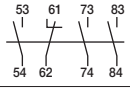
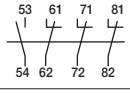
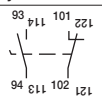
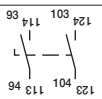
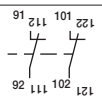
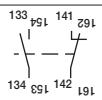
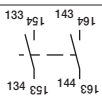
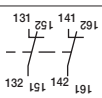
*Note: 1) Spare coil in direct current (DC) only for CWB40...80 A.*



Data is subject to change without notice.

# Technical Data

## Terminal Markings According to IEC/EN 60947

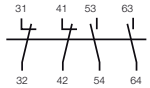
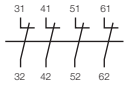
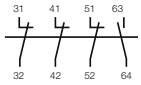
| Diagram | Configuration | Auxiliary contacts | | Reference code |
|---|---|---|---|---|
| | | NO | NC | |
| 3-poles contactors with built-in auxiliary contacts | | | | |
|  | 11 | 1 | 1 | CWB9-11-30♦<br>CWB12-11-30♦<br>CWB18-11-30♦<br>CWB25-11-30♦<br>CWB32-11-30♦<br>CWB38-11-30♦<br>CWB40-11-30♦<br>CWB50-11-30♦<br>CWB65-11-30♦<br>CWB80-11-30♦ |
| Front mounted auxiliary contact blocks | | | | |
|  | 20 | 2 | 0 | BFB-20 |
|  | 11 | 1 | 1 | BFB-11 |
|  | 02 | 0 | 2 | BFB-02 |
|  | 40 | 4 | 0 | BFB-40 |
|  | 22 | 2 | 2 | BFB-22 |
|  | 22 | 2 | 2 | BFB-22 EL |
|  | 04 | 0 | 4 | BFB-04 |
|  | 31 | 3 | 1 | BFB-31 |
|  | 13 | 1 | 3 | BFB-13 |
| Side mounted auxiliary contact blocks | | | | |
|  | 11 | 1 | 1 | BLB11 |
|  | 20 | 2 | 0 | BLB20 |
|  | 02 | 2 | 0 | BLB02 |
|  | 11 | 1 | 1 | BLRB11 |
|  | 20 | 2 | 0 | BLRB20 |
|  | 02 | 2 | 0 | BLRB02 |

# Contactors

CWB Series

## Technical Data

### Terminal Markings According to EN 50012

| Diagram | Configuration | Auxiliary contacts | | Reference code |
|---|---|---|---|---|
| | | NO | NC | |
| Front mounting auxiliary contact blocks | | | | |
|   | 20 | 2 | 0 | BFB-20 EN |
|   | 11 | 1 | 1 | BFB-11 EN |
|   | 02 | 0 | 2 | BFB-02 EN |
|   | 40 | 4 | 0 | BFB-40 EN |
|   | 22 | 2 | 2 | BFB-22 EN |
|   | 04 | 0 | 4 | BFB-04 EN |
|   | 31 | 3 | 1 | BFB-31EN |
|   | 13 | 1 | 3 | BFB-13 EN |



Data is subject to change without notice.

# Technical Data

## General Data

| Reference code | | | CWB9 | CWB12 | CWB18 | CWB25 | CWB32 | CWB38 | CWB40 | CWB50 | CWB65 | CWB80 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Compliance with the standards | | | IEC/EN 60947-1, IEC/EN 60947-4-1, IEC/EN 60947-5-1, UL 508 | | | | | | | | | |
| Rated insulation voltage $U_i$ (pollution degree 3) | IEC/EN 60947-4-1 | (V) | 690 V | | | | | | 1,000 V | | | |
| | UL, CSA | (V) | 600 V | | | | | | | | | |
| Rated impulse-withstand voltage $U_{imp}$ | IEC/EN 60947-1 | (kV) | 6 kV | | | | | | | | | |
| Frequency limits | | (Hz) | 25...400 | | | | | | | | | |
| Mechanical lifespan | AC coil (million cycles) | | 10 | | | | | | 6 | | | |
| | DC coil (million cycles) | | 10 | | | | | | 6 | | | |
| Electrical lifespan | $I_e$ AC-3 (million cycles) | | 2.0 | 2.0 | 1.8 | 1.6 | 1.6 | 1.2 | 1.6 | 1.6 | 1.6 | 1.2 |
| Degree of protection (IEC/EN 60529) | Main terminals | | IP10 (front) | | | | | | | | | |
| | Coil and auxiliary contacts | | IP20 (front) | | | | | | | | | |
| Mounting | | | By screws or DIN 35 mm rail (EN 50022) | | | | | | | | | |
| Coil connection points | Contactors with AC coil | | 2 | | | | | | | | | |
| | Contactors with DC coil | | 2 | | | | | | | | | |
| Vibration resistance (IEC/EN 60068-2-6) | Open contactor | (g) | 4 | | | | | | | | | |
| | Closed contactor | (g) | 4 | | | | | | | | | |
| Resistance to mechanical shocks (½ sine wave = 11ms - IEC/EN 60068-2-27) | Open contactor | (g) | 10 | | | | | | | | | |
| | Closed contactor | (g) | 15 | | | | | | | | | |
| Ambient temperature | Operating | | -25 °C...+55 °C | | | | | | | | | |
| | Storage | | -55 °C...+80 °C | | | | | | | | | |
| Maximum operation altitude without modification in the rated values[1)] | | | 3,000 m | | | | | | | | | |

## Control Circuit - Alternating Current (AC)

| Reference code | | | CWB9...38 | | CWB40...80 | |
|---|---|---|---|---|---|---|
| Rated insulation voltage $U_i$ (pollution degree 3) | IEC/EN 60947-4-1 | (V) | 690 | | 1,000 | |
| | UL, CSA | (V) | 600 | | 600 | |
| Standard voltages at 50/60 Hz | | (V) | 12...600 | | 24...600 | |
| Coil operating limits | | (xUs) | 0.8...1.1 | | 0.8...1.1 | |
| Coil 50/60 Hz | *Pick up* | (xUs) | 0.5...0.8 | | 0.5...0.8 | |
| | *Drop out* | (xUs) | 0.2...0.6 | | 0.2...0.6 | |
| Average consumption | | | Operating at 60 Hz | Operating at 50 Hz | Operating at 60 Hz | Operating at 50 Hz |
| Coil 50/60 Hz | Magnetic circuit closed | (VA) | 7.5 | 9 | 17.2 | 27 |
| | Power factor switching on | (cos φ) | 0.7 | 0.8 | 0.55 | 0.56 |
| | Power factor switched on | | 0.27 | 0.24 | 0.28 | 0.25 |
| | Thermal power dissipation | (W) | 5...7 | 5...7 | 3.7...6.3 | 3.7...6.3 |
| | Closing of the magnetic circuit | (VA) | 75 | 90 | 185 | 202 |
| Operation average time | Closing of the NO contacts | (ms) | 15...25 | | 10...15 | |
| | Opening of the NO contacts | (ms) | 8...12 | | | |

## Control Circuit - Direct Current (DC)

| Reference code | | | CWB9...38 | CWB40...80 |
|---|---|---|---|---|
| Rated insulation voltage $U_i$ (pollution degree 3) | IEC/EN 60947-4-1 | (V) | 690 | 1,000 |
| | UL, CSA | (V) | 600 | 600 |
| Standard voltages | | (V) | 12...500 | 12...500 |
| Coil operationg limits | | (xUs) | 0.8...1.1 | 0.8...1.1 |
| | *Pick up* | (xUs) | 0.5...0.8 | 0.5...0.8 |
| | *Drop out* | (xUs) | 0.1...0.4 | 0.1...0.4 |
| Average consumption | | | 1.0 x use the coil cold | 1.0 x use the coil cold |
| | Magnetic circuit closed | (W) | 5.8 | 14.5 |
| | Closing of the magnetic circuit | (W) | 5.8 | 105 |
| Operation average time | Closing of the NO contacts | (ms) | 35...45 | 20...30 |
| | Opening of the NO contacts | (ms) | 8...12 | 4...8 |
| Thermal power dissipation | | (W) | 5...7 | 12...16 |

*Note: 1) For altitudes of 3,000...4,000 m (0.90 x $I_e$ and 0.80 x $U_i$) and of 4,000...5,000 m (0.80 x $I_e$ and 0.75 x $U_i$).*

# Contactors

CWB Series

## Technical Data

### Main Contacts

| Reference code | | | CWB9 | CWB12 | CWB18 | CWB25 | CWB32 | CWB38 | CWB40 | CWB50 | CWB65 | CWB80 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rated operational current $I_e$ | AC-3 ($U_e$ ≤440 V) | (A) | 9 | 12 | 18 | 25 | 32 | 38 | 40 | 50 | 65 | 80 |
| | AC-4 ($U_e$ ≤440 V) | (A) | 4.4 | 5.8 | 8.5 | 10.4 | 13.7 | 13.7 | 18.5 | 18.5 | 26 | 32 |
| | AC-1 (θ ≤55 ºC, Ue ≤690 V) | (A) | 25 | 25 | 32 | 40 | 50 | 50 | 60 | 90 | 110 | 110 |
| Rated operational voltage $U_e$ | IEC/EN 60947-4-1 | (V) | 690 V | | | | | 1,000 V | | | | |
| | UL, CSA | (V) | 600 V | | | | | | | | | |
| Conventional thermal current $I_{th}$ (θ ≤55 ºC) | | (A) | 25 | 25 | 32 | 40 | 50 | 50 | 60 | 90 | 110 | 110 |
| *Making capacity* - IEC/EN 60947 | | (A) | 250 | 250 | 300 | 450 | 550 | 550 | 550 | 1,000 | 1,000 | 1,000 |
| Breaking capacity IEC/EN 60947 | ($U_e$ ≤400 V) | (A) | 250 | 250 | 300 | 450 | 550 | 550 | 550 | 1,000 | 1,000 | 1,000 |
| | ($U_e$ = 500 V) | (A) | 220 | 220 | 250 | 350 | 450 | 450 | 480 | 880 | 880 | 880 |
| | ($U_e$ = 690 V) | (A) | 150 | 150 | 180 | 250 | 350 | 350 | 350 | 640 | 640 | 640 |
| Acceptable short-time current (no current flowing during recovery time of 15min and θ ≤40 ºC) | 1s | (A) | 210 | 210 | 240 | 380 | 400 | 430 | 720 | 820 | 900 | 900 |
| | 10s | (A) | 105 | 105 | 145 | 240 | 260 | 310 | 320 | 400 | 520 | 640 |
| | 1min | (A) | 60 | 60 | 80 | 120 | 130 | 150 | 165 | 230 | 340 | 360 |
| | 10min | (A) | 30 | 30 | 40 | 50 | 60 | 60 | 85 | 110 | 130 | 130 |
| Short circuit protection of the main contacts Fuse (gL/gG) | @600 V - UL/CSA | (kA) | 5 | | | | | | | | | |
| | Coordination type 1 | (A) | 25 | 40 | 50 | 63 | 63 | 63 | 80 | 100 | 125 | 160 |
| | Coordination type 2 | (A) | 20 | 20 | 25 | 35 | 50 | 50 | 63 | 80 | 100 | 125 |
| Impedance per pole | | (mΩ) | 2.5 | 2.5 | 2.5 | 2 | 2 | 2 | 1.6 | 1.6 | 1.6 | 1.6 |
| Average power dissipation per pole | AC-1 | (W) | 1.5 | 1.5 | 2.5 | 3.2 | 5 | 5 | 6 | 13 | 19 | 19 |
| | AC-3 | (W) | 0.2 | 0.4 | 0.8 | 1.2 | 2 | 3 | 3 | 4 | 7 | 10 |
| Utilization category AC-3 | | | | | | | | | | | | |
| Rated operational current $I_e$ (θ ≤55 ºC) | $U_e$ ≤440 V | (A) | 9 | 12 | 18 | 25 | 32 | 38 | 40 | 50 | 65 | 80 |
| | $U_e$ ≤500 V | (A) | 9 | 12 | 15.8 | 23 | 28.5 | 28.5 | 35 | 45 | 55 | 75 |
| | $U_e$ ≤690 V | (A) | 7 | 9 | 12.8 | 16.5 | 21 | 21 | 32 | 35 | 40 | 50 |
| Orientative rated operational power Three-phase induction motors (50/60 Hz) IV poles - 1,800 rpm | 220/240 V | (kW) | 2.2 | 3 | 4.5 | 6.5 | 7.5 | 9.2 | 11 | 15 | 18.5 | 22 |
| | | (cv) | 3 | 4 | 6 | 8.7 | 10 | 12.5 | 15 | 20 | 25 | 29 |
| | 380/400 V | (kW) | 4 | 5.5 | 7.5 | 12.5 | 15 | 18.5 | 18.5 | 22 | 30 | 37 |
| | | (cv) | 5.5 | 7.5 | 10 | 16.8 | 20 | 25 | 25 | 29 | 40 | 50 |
| | 415/440 V | (kW) | 4.5 | 6.5 | 9.2 | 12.5 | 15 | 18.5 | 22 | 30 | 37 | 45 |
| | | (cv) | 6 | 8.7 | 12.5 | 16.8 | 20 | 25 | 29 | 40 | 50 | 60 |
| | 500 V | (kW) | 5.5 | 7.5 | 10 | 15 | 18.5 | 18.5 | 22 | 30 | 37 | 55 |
| | | (cv) | 7.5 | 10 | 13.4 | 20 | 25 | 25 | 29 | 40 | 50 | 74 |
| | 660/690 V | (kW) | 5.5 | 7.5 | 11 | 15 | 18.5 | 18.5 | 30 | 33 | 37 | 45 |
| | | (cv) | 7.5 | 10 | 15 | 20 | 25 | 25 | 40 | 44 | 50 | 60 |
| Maximum percentage | 600 ops./h | (%) | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Utilization category AC-4 | | | | | | | | | | | | |
| Rated operational current $I_e$ | ($U_e$ ≤440 V) | (A) | 4.4 | 5.8 | 8.5 | 10.4 | 13.7 | 13.7 | 18.5 | 18.5 | 26 | 32 |
| | ($U_e$ ≤500 V) | (A) | 3.9 | 5.1 | 7.5 | 12 | 13.9 | 13.9 | 17.5 | 23.5 | 28.5 | 33 |
| | ($U_e$ ≤690 V) | (A) | 2.8 | 3.7 | 5.4 | 12 | 12.8 | 12.8 | 14 | 18 | 22 | 26 |
| Orientative rated operational power Three-phase induction motors (50/60 Hz) IV poles - 1,800 rpm (200,000 operations) | 220/240 V | (kW) | 1.5 | 1.5 | 2.2 | 3 | 4 | 4 | 4.5 | 5.5 | 7.5 | 11 |
| | | (cv) | 2.0 | 2.0 | 2.9 | 4.0 | 5.4 | 5.4 | 6.0 | 7.4 | 10.1 | 14.7 |
| | 380/400 V | (kW) | 2.2 | 3.7 | 4 | 5.5 | 7.5 | 7.5 | 9.2 | 11 | 15 | 18.5 |
| | | (cv) | 2.9 | 5.0 | 5.4 | 7.4 | 10.1 | 10.1 | 12.3 | 14.7 | 20.1 | 24.8 |
| | 415/440 V | (kW) | 2.2 | 3 | 3.7 | 5.5 | 7.5 | 7.5 | 11 | 11 | 15 | 22 |
| | | (cv) | 2.9 | 4.0 | 5.0 | 7.4 | 10.1 | 10.1 | 14.7 | 14.7 | 20.1 | 29.5 |
| | 500 V | (kW) | 2.2 | 3 | 5 | 7.5 | 9 | 9 | 11 | 15 | 18.5 | 22 |
| | | (cv) | 2.9 | 4.0 | 6.7 | 10.1 | 12.1 | 12.1 | 14.7 | 20.1 | 24.8 | 29.5 |
| | 660/690 V | (kW) | 2.2 | 3 | 5 | 10 | 11 | 11 | 12.5 | 15 | 20 | 25 |
| | | (cv) | 2.9 | 4.0 | 6.7 | 13.4 | 14.7 | 14.7 | 16.8 | 20.1 | 26.8 | 33.5 |



Data is subject to change without notice.

# Technical Data

## Main Contacts

| Reference code | | | CWB9 | CWB12 | CWB18 | CWB25 | CWB32 | CWB38 | CWB40 | CWB50 | CWB65 | CWB80 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Utilization category AC-1 | | | | | | | | | |
| | | | 3P (NO) | | | | | | | | | |
| Conventional thermal current Ith (θ ≤55 ºC) | | (A) | 25 | 25 | 32 | 40 | 50 | 50 | 60 | 90 | 110 | 110 |
| Maximum orientative operational current according to the ambient temperature | θ ≤60 ºC (Ue ≤690 V) | (A) | 25 | 25 | 32 | 40 | 50 | 50 | 60 | 90 | 110 | 110 |
| Max. operational power θ ≤55 ºC (three-phase resistors) | 220/230 V | (kW) | 9.5 | 9.5 | 12 | 15 | 19 | 19 | 22.5 | 34 | 42 | 42 |
| | 380/400 V | (kW) | 16.5 | 16.5 | 21 | 26 | 33 | 33 | 39.5 | 59 | 72.5 | 72.5 |
| | 415/440 V | (kW) | 19 | 19 | 24.5 | 30.5 | 38 | 38 | 45.5 | 68.5 | 84 | 84 |
| | 500 V | (kW) | 21.5 | 21.5 | 27.5 | 34.5 | 43 | 43 | 52 | 77 | 95 | 95 |
| | 660/690 V | (kW) | 28.5 | 28.5 | 36.5 | 45.5 | 57 | 57 | 66 | 100 | 125 | 125 |
| Current values for connection | 2 poles in parallel | | $I_e$ x 1.7 | | | | | | | | | |
| | 3 poles in parallel | | $I_e$ x 2.4 | | | | | | | | | |
| | 4 poles in parallel | | - | | | | | | | | | |
| Percentage of maximum operational current | 600 ops./h | (%) | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |

## Auxiliary Contacts

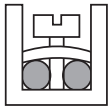
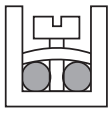
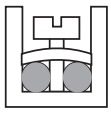
| Reference code | | | CWB9...38 (built-in) | BFB (front mounted) | BLB (side mounted) |
|---|---|---|---|---|---|
| Compliance with the standards | | | IEC/EN 60947-5-1 | | |
| Rated insulation voltage $U_i$ (pollution degree 3) | IEC/EN 60947-4-1, VDE 0660 | (V) | 690 | | |
| | UL, CSA | (V) | 600 | | |
| Rated operational voltage $U_e$ | IEC/EN 60947-4-1, VDE 0660 | (V) | 690 | | |
| | UL, CSA | (V) | 600 | | |
| Conventional thermal current $I_{th}$ (θ ≤55 ºC) | | (A) | 10 | | |
| Rated operational current $I_e$ | | | | | |
| AC-15 (IEC/EN 60947-5-1) | 220/230 V | (A) | 10 | | |
| | 380/440 V | (A) | 4 | | |
| | 500 V | (A) | 2.5 | | |
| | 660/690 V | (A) | 1.5 | | |
| DC-13 (IEC/EN 60947-5-1) | 24 V | (A) | 4 | | |
| | 48 V | (A) | 2 | | |
| | 110 V | (A) | 0.7 | | |
| | 220 V | (A) | 0.3 | | |
| | 440 V | (A) | 0.15 | | |
| Making capacity | $U_e$ ≤690 V 50/60 Hz - AC-15 | (A) | 10 x $I_e$ | | |
| Breaking capacity | $U_e$ ≤400 V 50/60 Hz - AC-15 | (A) | 1 x $I_e$ | | |
| Short circuit protection with fuse (gL/gG) | | (A) | 10 | | |
| Control circuit reliability | (V / mA) | | 17 / 5 | | |
| Electrical lifespan | (million cycles) | | 1 | | |
| Mechanical lifespan | (million cycles) | | 10 | | |
| Non-overlapping time between NO and NC contacts | | (ms) | 1.5 | | |
| Impedance of the contacts | | (mΩ) | 2.5 | | |

# Contactors

CWB Series

## Technical Data

### Terminal Capacity and Tightening Torque

| | | | Conductor cross-section | | |
|---|---|---|---|---|---|
| Power circuit | | | | | |
| **Model** | | | **CWB9...18** | **CWB25...38** | **CWB40...80** |
| Mounting system screw type | | | Phillips number 2 | Phillips number 2 | ALLEN 4 mm |
| Flexible conductor without terminal | AWG |  | 1 x 16-10<br>2 x 16-10 | 1 x 16-10<br>2 x 16-10 | 1 x 14-3<br>2 x 14-3 |
| Flexible conductor with terminal | AWG | | 1 x 16-10<br>2 x 16-12 | 1 x 16-8<br>2 x 16-10 | 1 x 14-3<br>2 x 14-3 |
| Solid wire | AWG | | 1 x 16-10<br>2 x 16-10 | 1 x 14-18<br>2 x 14-18 | 1 x 14-3<br>2 x 14-3 |
| Tightening torque | (Nm) | | 1.7 | 2.5 | 5.0 |
| Control and auxiliary circuit | | | | | |
| **Models** | | | **CWB9...38** | | **CWB40...80** |
| Mounting system screw type | | | Phillips number 2 | | Phillips number 2 |
| Flexible conductor without terminal | AWG |  | 1 x 16-12<br>2 x 16-12 | | 1 x 16-12<br>2 x 16-12 |
| Flexible conductor with terminal | AWG | | 1 x 16-12<br>2 x 16-14 | | 1 x 16-12<br>2 x 16-14 |
| Solid wire | AWG | | 1 x 16-12<br>2 x 16-12 | | 1 x 16-12<br>2 x 16-12 |
| Tightening torque | (Nm) | | 1.0 | | 1.0 |
| Auxiliary contact blocks | | | | | |
| **Models** | | | **BFB (front)** | **BLB (side)** | |
| Mounting system screw type | | | Phillips number 2 | | |
| Conductor cross-section | | | | | |
| Flexible conductor without terminal | AWG |  | 1 x 16-14<br>2 x 16-14 | | |
| Flexible conductor with terminal | AWG | | 1 x 16-14<br>2 x 16-14 | | |
| Solid wire | AWG | | 1 x 16-14<br>2 x 16-14 | | |
| Tightening torque | (Nm) | | 1.0 | | |



Data is subject to change without notice.

# Technical Data

## General Data

| Reference code | | | CWBN00 | CWBN0 | CWBN1 | CWBN2 |
|---|---|---|---|---|---|---|
| Compliance with the standards | | | IEC/EN 60947-1, IEC/EN 60947-4-1, IEC/EN 60947-5-1, UL 508 | | | |
| Rated insulation voltage Ui (pollution degree 3) | IEC/EN 60947-4-1 | (V) | 690 V | | | 1,000 V |
| | UL, CSA | (V) | 600 V | | | |
| Rated impulse-withstand voltage Uimp | IEC/EN 60947-1 | (kV) | 6 kV | | | |
| Frequency limits | | (Hz) | 25...400 | | | |
| Mechanical lifespan | AC coil | (million cycles) | 10 | | | 6 |
| | DC coil | (million cycles) | 10 | | | 6 |
| Electrical lifespan | Ie AC-3 | (million cycles) | 2.0 | 1.8 | 1.6 | 1.6 |
| Degree of protection (IEC/EN 60529) | Main terminals | | IP10 (front) | | | |
| | Coil and auxiliary contacts | | IP20 (front) | | | |
| Mounting | | | By screws or DIN 35 mm rail (EN 50022) | | | |
| Coil connection points | Contactors with AC coil | | 2 | | | |
| | Contactors with DC coil | | 2 | | | |
| Vibration resistance (IEC/EN 60068-2-6) | Open contactor | (g) | 4 | | | |
| | Closed contactor | (g) | 4 | | | |
| Resistance to mechanical shocks (½ sine wave = 11ms - IEC/EN 60068-2-27) | Open contactor | (g) | 10 | | | |
| | Closed contactor | (g) | 15 | | | |
| Ambient temperature | Operating | | -25 ºC...+55 ºC | | | |
| | Storage | | -55 ºC...+80 ºC | | | |
| Maximum operation altitude without modification in the rated values1) | | | 3,000 m | | | |

### Control Circuit - Alternating Current (AC)

| Reference code | | | CWBN00...1 | | CWBN2 | |
|---|---|---|---|---|---|---|
| Rated insulation voltage Ui (pollution degree 3) | IEC/EN 60947-4-1 | (V) | 690 | | 1,000 | |
| | UL, CSA | (V) | 600 | | 600 | |
| Standard voltages at 50/60 Hz | | (V) | 12...600 | | 24...600 | |
| Coil operating limits | | (xUs) | 0.8...1.1 | | 0.8...1.1 | |
| Coil 50/60 Hz | Pick up | (xUs) | 0.5...0.8 | | 0.5...0.8 | |
| | Drop out | (xUs) | 0.2...0.6 | | 0.2...0.6 | |
| Average consumption | | | Operating at 60 Hz | Operating at 50 Hz | Operating at 60 Hz | Operating at 50 Hz |
| Coil 50/60 Hz | Magnetic circuit closed | (VA) | 7.5 | 9 | 17.2 | 27 |
| | Power factor switching on | (cos ϕ) | 0.7 | 0.8 | 0.55 | 0.56 |
| | Power factor switched on | | 0.27 | 0.24 | 0.28 | 0.25 |
| | Thermal power dissipation | (W) | 5...7 | 5...7 | 3.7...6.3 | 3.7...6.3 |
| | Closing of the magnetic circuit | (VA) | 75 | 90 | 185 | 202 |
| Operation average time | Closing of the NO contacts | (ms) | 15...25 | | 10...15 | |
| | Opening of the NO contacts | (ms) | 8...12 | | | |

### Control Circuit - Direct Current (DC)

| Reference code | | | CWBN00...1 | CWBN2 |
|---|---|---|---|---|
| Rated insulation voltage Ui (pollution degree 3) | IEC/EN 60947-4-1 | (V) | 690 | 1,000 |
| | UL, CSA | (V) | 600 | 600 |
| Standard voltages | | (V) | 12...500 | 12...500 |
| Coil operationg limits | | (xUs) | 0.8...1.1 | 0.8...1.1 |
| | Pick up | (xUs) | 0.5...0.8 | 0.5...0.8 |
| | Drop out | (xUs) | 0.1...0.4 | 0.1...0.4 |
| Average consumption | | | 1.0 x use the coil cold | 1.0 x use the coil cold |
| | Magnetic circuit closed | (W) | 5.8 | 14.5 |
| | Closing of the magnetic circuit | (W) | 5.8 | 105 |
| Operation average time | Closing of the NO contacts | (ms) | 35...45 | 20...30 |
| | Opening of the NO contacts | (ms) | 8...12 | 4...8 |
| Thermal power dissipation | | (W) | 5...7 | 12...16 |

*Note: 1) For altitudes of 3,000...4,000 m (0.90 x Ie and 0.80 x Ui ) and of 4,000...5,000 m (0.80 x Ie and 0.75 x Ui ).*

# Contactors

## CWBN

## Technical Data

### Main Contacts

| Reference code | | | CWBN00 | CWBN0 | CWBN1 | CWBN2 |
|---|---|---|---|---|---|---|
| Rated operational current Ie | AC-3 (Ue ≤440 V) | (A) | 9 | 18 | 25 | 50 |
| | AC-4 (Ue ≤440 V) | (A) | 4.4 | 8.5 | 10.4 | 18.5 |
| | AC-1 (0 ≤55 ºC, Ue ≤690 V) | (A) | 25 | 32 | 40 | 90 |
| Rated operational voltage Ue | IEC/EN 60947-4-1 | (V) | 690 V | | | 1,000 V |
| | UL, CSA | (V) | 600 V | | | |
| Conventional thermal current Ith (0≤55 ºC) | | (A) | 25 | 32 | 40 | 90 |
| Making capacity - IEC/EN 60947 | | (A) | 250 | 300 | 450 | 1,000 |
| Breaking capacity IEC/EN 60947 | (Ue ≤400 V) | (A) | 250 | 300 | 450 | 1,000 |
| | (Ue = 500 V) | (A) | 220 | 250 | 350 | 880 |
| | (Ue = 690 V) | (A) | 150 | 180 | 250 | 640 |
| Acceptable short-time current (no current flowing during recovery time of 15min and 0 ≤40 ºC) | 1s | (A) | 210 | 240 | 380 | 820 |
| | 10s | (A) | 105 | 145 | 240 | 400 |
| | 1min | (A) | 60 | 80 | 120 | 230 |
| | 10min | (A) | 30 | 40 | 50 | 110 |
| Short circuit protection of the main contacts Fuse (gL/gG) | @600 V - UL/CSA | (kA) | 5 | | | |
| | Coordination type 1 | (A) | 25 | 50 | 63 | 100 |
| | Coordination type 2 | (A) | 20 | 25 | 35 | 80 |
| Impedance per pole | | (m ) | 2.5 | 2.5 | 2 | 1.6 |
| Average power dissipation per pole | AC-1 | (W) | 1.5 | 2.5 | 3.2 | 13 |
| | AC-3 | (W) | 0.2 | 0.8 | 1.2 | 4 |
| **Utilization category AC-3** | | | | | | |
| Rated operational current Ie (0 ≤55 ºC) | Ue ≤440 V | (A) | 9 | 18 | 25 | 50 |
| | Ue ≤500 V | (A) | 9 | 15.8 | 23 | 45 |
| | Ue ≤690 V | (A) | 7 | 12.8 | 16.5 | 35 |
| Orientative rated operational power Three-phase induction motors (50/60 Hz) IV poles - 1,800 rpm | 220/240 V | (kW) | 2.2 | 4.5 | 6.5 | 15 |
| | | (cv) | 3 | 6 | 8.7 | 20 |
| | 380/400 V | (kW) | 4 | 7.5 | 12.5 | 22 |
| | | (cv) | 5.5 | 10 | 16.8 | 29 |
| | 415/440 V | (kW) | 4.5 | 9.2 | 12.5 | 30 |
| | | (cv) | 6 | 12.5 | 16.8 | 40 |
| | 500 V | (kW) | 5.5 | 10 | 15 | 30 |
| | | (cv) | 7.5 | 13.4 | 20 | 40 |
| | 660/690 V | (kW) | 5.5 | 11 | 15 | 33 |
| | | (cv) | 7.5 | 15 | 20 | 44 |
| Maximum percentage | 600 ops./h | (%) | 100 | 100 | 100 | 100 |
| **Utilization category AC-4** | | | | | | |
| Rated operational current Ie | (Ue ≤440 V) | (A) | 4.4 | 8.5 | 10.4 | 18.5 |
| | (Ue ≤500 V) | (A) | 3.9 | 7.5 | 12 | 23.5 |
| | (Ue ≤690 V) | (A) | 2.8 | 5.4 | 12 | 18 |
| Orientative rated operational power Three-phase induction motors (50/60 Hz) IV poles - 1,800 rpm (200,000 operations) | 220/240 V | (kW) | 1.5 | 2.2 | 3 | 5.5 |
| | | (cv) | 2.0 | 2.9 | 4.0 | 7.4 |
| | 380/400 V | (kW) | 2.2 | 4 | 5.5 | 11 |
| | | (cv) | 2.9 | 5.4 | 7.4 | 14.7 |
| | 415/440 V | (kW) | 2.2 | 3.7 | 5.5 | 11 |
| | | (cv) | 2.9 | 5.0 | 7.4 | 14.7 |
| | 500 V | (kW) | 2.2 | 5 | 7.5 | 15 |
| | | (cv) | 2.9 | 6.7 | 10.1 | 20.1 |
| | 660/690 V | (kW) | 2.2 | 5 | 10 | 15 |
| | | (cv) | 2.9 | 6.7 | 13.4 | 20.1 |



Data is subject to change without notice.

# Technical Data

## Main Contacts

| Reference code | | | CWBN00 | CWBN0 | CWBN1 | CWBN2 |
|---|---|---|---|---|---|---|
| | | | Utilization category AC-1 | | | |
| | | | 3P (NO) | | | |
| Conventional thermal current Ith (0 ≤55 ºC) | | (A) | 25 | 32 | 40 | 90 |
| Maximum orientative operational current according to the ambient temperature | 0≤60 ºC (Ue ≤690 V) | (A) | 25 | 32 | 40 | 90 |
| Max. operational power 0 ≤55 ºC (three-phase resistors) | 220/230 V | (kW) | 9.5 | 12 | 15 | 34 |
| | 380/400 V | (kW) | 16.5 | 21 | 26 | 59 |
| | 415/440 V | (kW) | 19 | 24.5 | 30.5 | 68.5 |
| | 500 V | (kW) | 21.5 | 27.5 | 34.5 | 77 |
| | 660/690 V | (kW) | 28.5 | 36.5 | 45.5 | 100 |
| Current values for connection | 2 poles in parallel | | Ie x 1.7 | | | |
| | 3 poles in parallel | | Ie x 2.4 | | | |
| | 4 poles in parallel | | - | | | |
| Percentage of maximum current | 600 ops./h operational | (%) | 100 | 100 | 100 | 100 |

### Auxiliary Contacts

| Reference code | | | CWBN00 (built-in) | BFB (front mounted) | BLB (side mounted) |
|---|---|---|---|---|---|
| Compliance with the standards | | | IEC/EN 60947-5-1 | | |
| Rated insulation voltage Ui (pollution degree 3) | IEC/EN 60947-4-1, VDE 0660 | (V) | 690 | | |
| | UL, CSA | (V) | 600 | | |
| Rated operational voltage Ue | IEC/EN 60947-4-1, VDE 0660 | (V) | 690 | | |
| | UL, CSA | (V) | 600 | | |
| Conventional thermal current Ith (0≤55 ºC) | | (A) | 10 | | |
| **Rated operational current Ie** | | | | | |
| AC-15 (IEC/EN 60947-5-1) | 220/230 V | (A) | 10 | | |
| | 380/440 V | (A) | 4 | | |
| | 500 V | (A) | 2.5 | | |
| | 660/690 V | (A) | 1.5 | | |
| DC-13 (IEC/EN 60947-5-1) | 24 V | (A) | 4 | | |
| | 48 V | (A) | 2 | | |
| | 110 V | (A) | 0.7 | | |
| | 220 V | (A) | 0.3 | | |
| | 440 V | (A) | 0.15 | | |
| Making capacity | Ue ≤690 V 50/60 Hz - AC-15 | (A) | 10 x Ie | | |
| Breaking capacity | Ue ≤400 V 50/60 Hz - AC-15 | (A) | 1 x Ie | | |
| Short circuit protection with fuse (gL/gG) | | (A) | 10 | | |
| Control circuit reliability | (V / mA) | | 17 / 5 | | |
| Electrical lifespan | (million cycles) | | 1 | | |
| Mechanical lifespan | (million cycles) | | 10 | | |
| Non-overlapping time between NO and NC contacts | | (ms) | 1.5 | | |
| Impedance of the contacts | | (mΩ) | 2.5 | | |

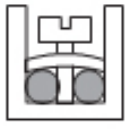
# Contactors

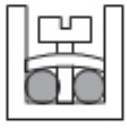
CWBN

## Technical Data

### Terminal Capacity and Tightening Torque

| | | Conductor cross-section | | |
|---|---|---|---|---|
| **Power circuit** | | | | |
| **Model** | | **CWBN00/CWBN0** | **CWBN1** | **CWBN2** |
| Mounting system screw type | | Phillips number 2 | Phillips number 2 | ALLEN 4 mm |
| Flexible conductor without terminal |  | 1 x 1...6 mm2 / 16...10 AWG<br>2 x 1...6 mm2 / 16...10 AWG | 1 x 2.5...10 mm2 / 14...8 AWG<br>2 x 2.5...10 mm2 / 14...8 AWG | 1 x 2.5...35 mm2 / 14...2 AWG<br>2 x 2.5...35 mm2 / 14...2 AWG |
| Flexible conductor with terminal | | 1 x 1...6 mm2 / 16...10 AWG<br>2 x 1...4 mm2 / 16...12 AWG | 1 x 1.5...10 mm2 / 16...8 AWG<br>2 x 1.5...6 mm2 / 16...10 AWG | 1 x 2.5...35 mm2 / 14...2 AWG<br>2 x 2.5...35 mm2 / 14...2 AWG |
| Solid wire | | 1 x 1...6 mm2 / 16...10 AWG<br>2 x 1...6 mm2 / 16...10 AWG | 1 x 2.5...10 mm2 / 14...8 AWG<br>2 x 2.5...10 mm2 / 14...8 AWG | 1 x 2.5...35 mm2 / 14...2 AWG<br>2 x 2.5...35 mm2 / 14...2 AWG |
| Tightening torque | | 1.7 Nm / 15 lb.in | 2.5 Nm / 22 lb.in | 5.0 Nm / 60 lb.in |

| | | | |
|---|---|---|---|
| **Control and auxiliary circuit** | | | |
| **Models** | | **CWBN00..1** | **CWBN2** |
| Mounting system screw type |  | Phillips number 2 | Phillips number 2 |
| Flexible conductor without terminal | | 1 x 1...4 mm2 / 16....12 AWG<br>2 x 1...4 mm2 / 16....12 AWG | 1 x 1...4 mm2 / 16...12 AWG<br>2 x 1...4 mm2 / 16...12 AWG |
| Flexible conductor with terminal | | 1 x 1...4 mm2 / 16....12 AWG<br>2 x 1...2.5 mm2 / 16....14 AWG | 1 x 1...4 mm2 / 16...12 AWG<br>2 x 1...2.5 mm2 / 16...14 AWG |
| Solid wire | | 1 x 1...4 mm2 / 16...12 AWG<br>2 x 1...4 mm2 / 16...12 AWG | 1 x 1...4 mm2 / 16...12 AWG<br>2 x 1...4 mm2 / 16...12 AWG |
| Tightening torque | | 1.0 Nm / 8.8 lb.in | 1.0 Nm / 8.8 lb.in |

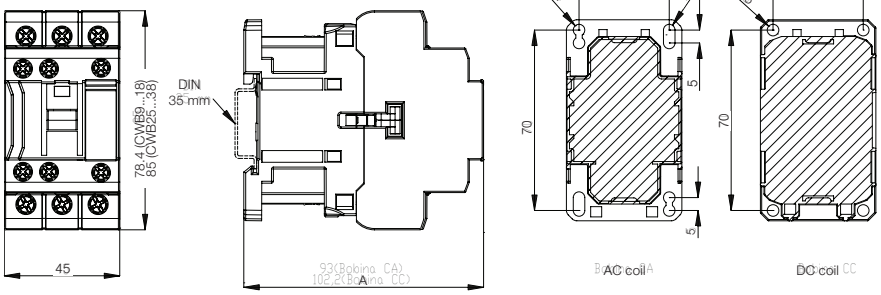
| | | | |
|---|---|---|---|
| **Auxiliary contact blocks** | | | |
| **Models** | | **BFB (front)** | **BLB (side)** |
| Mounting system screw type | | Phillips number 2 | |
| | | Conductor cross-section | |
| Flexible conductor without terminal |  | 1 x 1...2.5 mm2 / 16...14 AWG<br>2 x 1...2.5 mm2 / 16...14 AWG | 1 x 1...2.5 mm2 / 16...14 AWG<br>2 x 1...2.5 mm2 / 16...14 AWG |
| Flexible conductor with terminal | | 1 x 1...2.5 mm2 / 16...14 AWG<br>2 x 1...2.5 mm2 / 16...14 AWG | 1 x 1...2.5 mm2 / 16...14 AWG<br>2 x 1...2.5 mm2 / 16...14 AWG |
| Solid wire | | 1 x 1...2.5 mm2 / 16...14 AWG<br>2 x 1...2.5 mm2 / 16...14 AWG | 1 x 1...2.5 mm2 / 16...14 AWG<br>2 x 1...2.5 mm2 / 1...1.5/16 AWG |
| Tightening torque | | 1.0 Nm / 8.8 lb.in | |



Data is subject to change without notice.

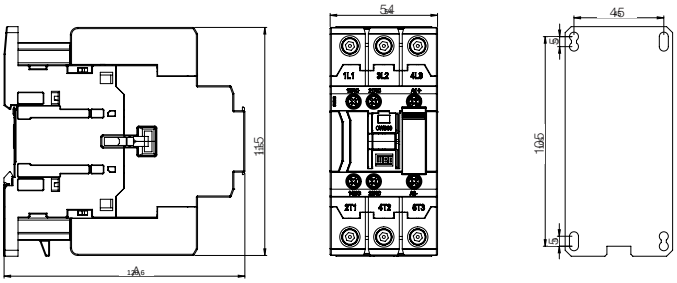
# Dimensions (mm)

## CWB9...18, CWB25...38, CWB00...1




| Models | A | |
|---|---|---|
| | AC coil | DC coil |
| CWB9...18<br>CWB00...0 | 89.5 | 98.5 |
| CWB25...38<br>CWB1 | 93 | 102.2 |

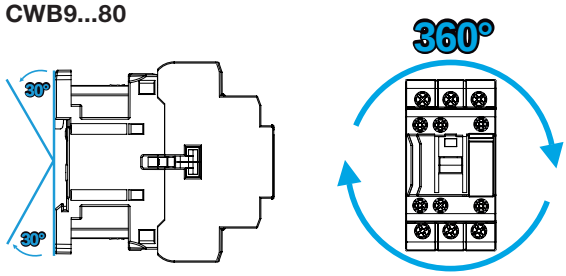
## CWB40...80, CWB2



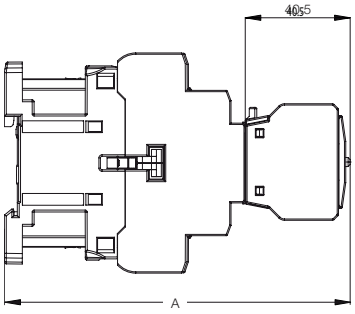

| Models | A | |
|---|---|---|
| | AC coil | DC coil |
| CWB40...80<br>CWB2 | 120.6 | 120.6 |

## Mounting Position

### CWB9...80

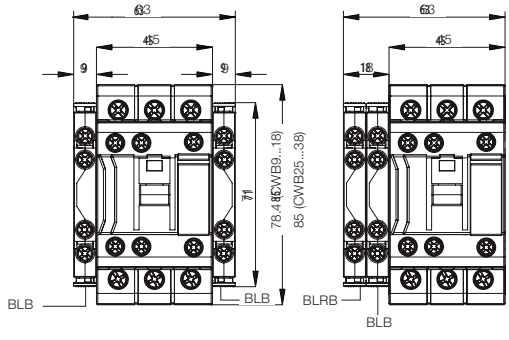



## CWB9...18, CWB25...38, CWB40...80 + BFB (Front Mounted Auxiliary Contact Block)

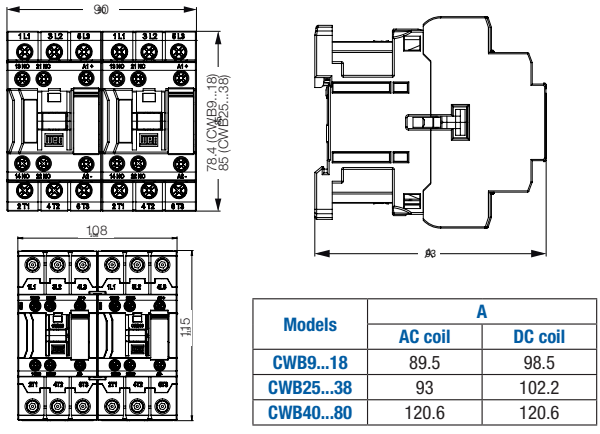



| Models | A | |
|---|---|---|
| | AC coil | DC coil |
| CWB9...18 | 130 | 136.2 |
| CWB25...38 | 133.4 | 142.6 |
| CWB40...80 | 161.1 | 161.1 |

## CWB9...18, CWB25...38 + BLB (Side Mounted Auxiliary Contact Block)

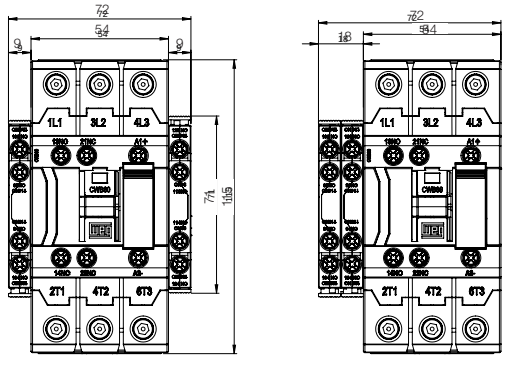



## 2 x CWB9...38 + IM1 (Mechanical Interlock)
## 2 x CWB40...80 + IM2 (Mechanical Interlock)




| Models | A | |
|---|---|---|
| | AC coil | DC coil |
| CWB9...18 | 89.5 | 98.5 |
| CWB25...38 | 93 | 102.2 |
| CWB40...80 | 120.6 | 120.6 |

## CWB40...80 + BLB (Side-Mounted Contact Block)

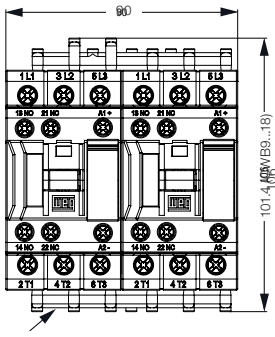


# Contactors

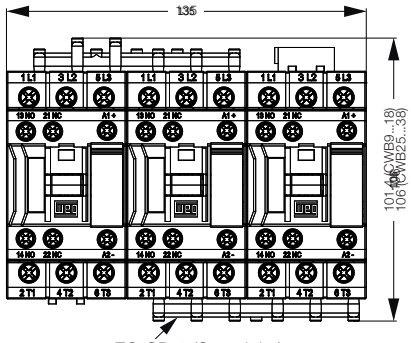
CWB Series

## Dimensions (mm)

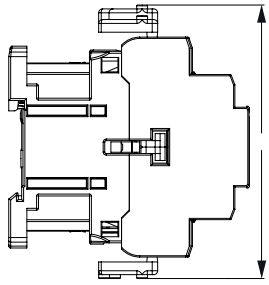
### CWB9...38 + Easy Connection Busbars



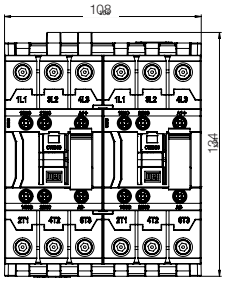

EC-R-1 (Reversing)



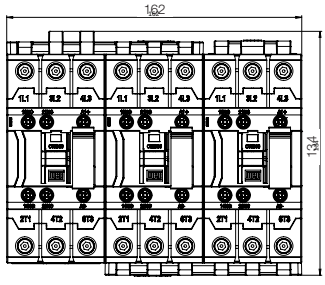

EC-SD-1 (Star-delta)



### CWB40...80 + Easy Connection Busbars

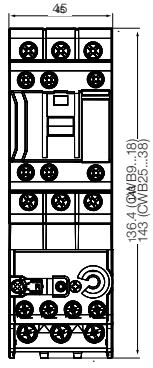


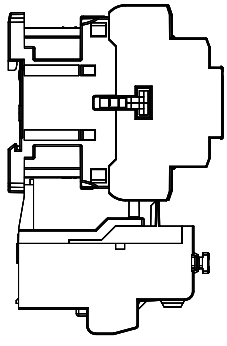

EC-R-2 (Reversing)



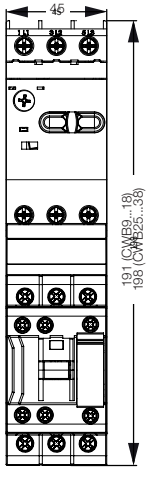

EC-SD-2 (Star-delta)

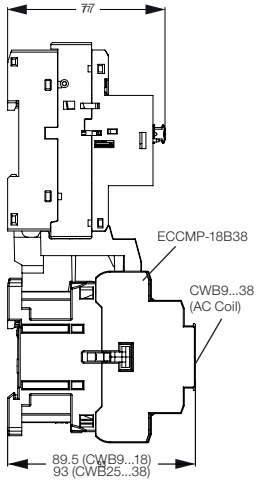
### CWB9...38 + RW27-2D (Overload Relay)



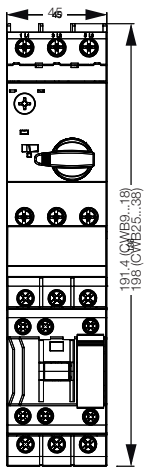



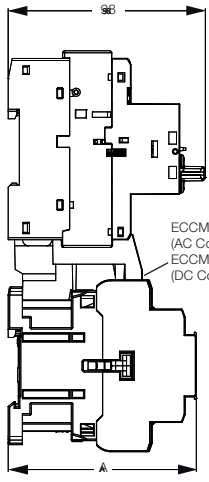
### CWB9...38 + MPW16/18 (Manual Motor Protector)



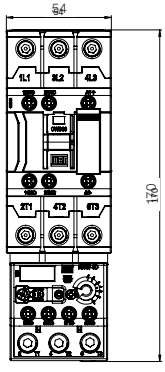

### CWB9...38 + MPW25/40 (Manual Motor Protector)

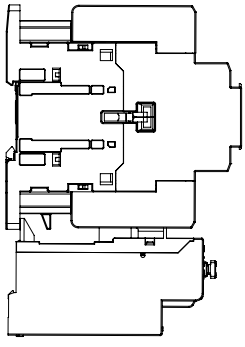


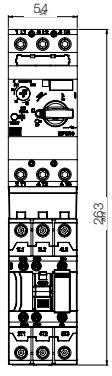

| Models | A | |
|---|---|---|
| | AC coil | DC coil |
| CWB9...18 | 89.5 | 98.5 |
| CWB25...38 | 93 | 102.2 |

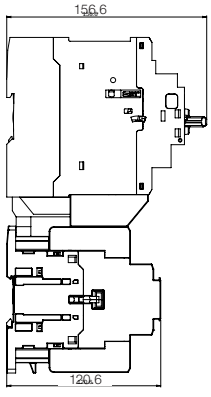
### CWB40 + RW67-5D (Overload Relay)



### CWB40...80 + MPW80 (Manual Motor Protector)






Data is subject to change without notice.

# CWM Series

The CWM Series IEC Contactor was designed as a general purpose contactor taking into consideration the heavy demands and need for high reliability in modern industry. They are rated for inductive loads up to 800 AMPS @ 460V. CWM Contactors are compact in frame size allowing for optimization of valuable internal space within electrical enclosures. Reducing inventory is a “Snap” away with the CWM Series’ common accessories.




UL File No. E202315

## Standard Features

- Panel mountable or 35mm DIN Rail up to the CWM105 Series
- Front and Side Mounting Auxiliary Contacts
- Finger-Touch IP20 Protection
- Wide Coil Voltage Protection AC or DC
- Mirror Contacts for “Safety-Related” Applications
- Mechanically linked Auxiliary Contacts

## CWM Catalog Number Sequence

| CWM | 18 | - | 10 | - | 30 | V18 |
|---|---|---|---|---|---|---|

**Standard Contactor Series**

CWM: Standard IEC Contactors
CWM_N: Standard NEMA Contactor

**Frame Rating**

CWM (IEC)

| | |
|---|---|
| 9: 9 Amps | 105: 105 Amps |
| 12: 12 Amps | 112: 112 Amps |
| 18: 18 Amps | 150: 150 Amps |
| 25: 25 Amps | 180:180 Amps |
| 32: 32 Amps | 250: 250 Amps |
| 40: 40 Amps | 300: 300 Amps |
| 50: 50 Amps | 400: 400 Amps |
| 65: 65 Amps | 500: 500 Amps |
| 80: 80 Amps | 630: 630 Amps |
| 95: 95 Amps | 800: 800 Amps |

CWM_N (NEMA)

| | |
|---|---|
| 9N: 9 Amps | (SIZE 00) |
| 18N: 18 Amps | (SIZE 0) |
| 32N: 32 Amps | (SIZE 1) |
| 50N: 50 Amps | (SIZE 2) |
| 95N: 95 Amps | (SIZE 3) |
| 150N: 150 Amps | (SIZE 4) |
| 300N: 300 Amps | (SIZE 5) |

**Auxiliary Contacts**

00: None
10: 1 NO
01: 1 NC
11: 1 NO + 1 NC
22: 2 NO + 2 NC

**Power Pole**

30: 3 NO Power Poles
20: 2 NO Power Poles

**Coil Voltage**

VAC COIL (9 to 105 Amps)
V04: 24Vac 60 Hz
V18: 120Vac 60Hz
V24: 208-240Vac 60Hz
V47: 480Vac 60Hz
V56: 500Vac 60Hz

VDC COIL (32 to 105 Amps)
C34: 24-28Vdc
C40: 110-130Vdc

VAC/VDC COIL (112 to 300 Amps)
E02: 24-28Vac/Vdc
E10: 110-130Vac/Vdc
E13: 208-250Vac/Vdc
E21: 430-500Vac/Vdc

VAC/VDC COIL (400Amps)
E36: 100-240Vac/Vdc

VAC/VDC COIL (500 to 800 Amps)
E35: 100-127Vac/Vdc (CWM500…CWM800)
E39: 200-240Vac/Vdc (CWM500…CWM800)

VAC/VDC COIL (500 to 800 Amps)
D81: 440-575Vac (CWM400…CWM800)

# Contactors

## CWM Series - IEC Standard Contactors






| Catalog Number | | CWM9 | CWM12 | CWM18 | CWM25 | CWM32 | CWM40 | CWM50 | CWM65 | CWM80 | CWM95 | CWM105 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Rated operational power Single-phase** | | | | | | | | | | | | |
| 115Vac | Hp | 1/2 | 3/4 | 1 | 2 | 3 | 3 | 3 | 5 | 7 1/2 | 7 1/2 | 10 |
| 230Vac | Hp | 1 1/2 | 2 | 3 | 5 | 5 | 5 | 7 1/2 | 10 | 15 | 15 | 20 |
| **Three-phase** | | | | | | | | | | | | |
| 230Vac | Hp | 3 | 3 | 5 | 7 1/2 | 10 | 15 | 15 | 20 | 25 | 30 | 40 |
| 460Vac | Hp | 5 | 7 1/2 | 10 | 15 | 20 | 30 | 40 | 50 | 50 | 60 | 75 |
| 575Vac | Hp | 7 1/2 | 10 | 15 | 15 | 25 | 25 | 40 | 50 | 60 | 75 | 75 |
| General Purpose | A Rating (AC-1) | 25 | 25 | 32 | 45 | 60 | 60 | 90 | 110 | 110 | 140 | 140 |
| Inductive Motor Switching | (AC-3) | 9 | 12 | 18 | 25 | 32 | 40 | 50 | 65 | 80 | 95 | 105 |

**Overload relays**

**RW27-1D**



0.28. . .0.4
0.4. . .0.63
0.56. . .0.8
0.8. . .1.2
1.2. . .1.8
1.8. . .2.8
2.8. . .4
4. . .6.3

5.6. . .8
7. . .10
8. . .12.5
10. . .15
11. . .17
15...23
22...32

**RW67-1D**



25...40
32...50

**RW67-2D**



40...57
50...63
57...70
63...80

**RW117-1D**



63...80
75...97
90...112

**Auxillary contact blocks**



BCXMF10 (1NO)
BCXMF01 (1NC)



BCXML 11 (1NO+1NC)
BCXML 20 (2NO)
BCXMRL 11 (1NO+1NC)
BCXMRL 20 (2NO)

**Mechanical interlock**



BLIM9-105
BLIM.02 9-105 (2NC)

**Electronic Relays**



Timing Relays - RTW Series
(Please refer to Electronic Relays Section)

**Surge Suppressor**




RC block:
BAMRC4 D53 24-48 V 50/60Hz
BAMRC5 D55 50-127 V 50/60Hz
BAMRC6 D63 130-250 V 50/60Hz

Varistor block:
BAMV1 D68 270-380 V 50/60Hz
BAMV2 D73 400-510 V 50/60Hz




RC block:
BAMRC7 D53 24-48 V 50/60Hz
BAMRC8 D55 50-127 V 50/60Hz
BAMRC9 D63 130-250 V 50/60Hz

Varistor block:
BAMV1 D68 270-380 V 50/60Hz
BAMV2 D73 400-510 V 50/60Hz



Data is subject to change without notice.





| Catalog Number | 3 Poles | CWM112 | CWM150 | CWM180 | CWM250 | CWM300 |
|---|---|---|---|---|---|---|
| **Rated operational power** | | | | | | |
| **Single-phase** | | | | | | |
| 115Vac | Hp | - | - | - | - | - |
| 230Vac | Hp | - | - | - | - | - |
| **Three-phase** | | | | | | |
| 230Vac | Hp | 50 | 60 | 75 | 100 | 125 |
| 460Vac | Hp | 100 | 125 | 150 | 200 | 250 |
| 575Vac | Hp | 100 | 150 | 200 | 250 | 350 |
| General Purpose Rating | A | 180 | 225 | 225 | 350 | 410 |
| Inductive/Motor Switching (AC3) | | 112 | 150 | 180 | 250 | 300 |
| Overload relays | | RW117-2D  75...97<br>90...112 | | RW317-1D  100...150<br>140...215<br>200...310<br>275...420 | | |
| Auxiliary contact blocks | |  BCXML11 (1NO+1NC)<br>BCXML20 (2NO)<br>BCXMRL11 (1NO+1NC)<br>BCXMRL20 (2NO) | | | | |
| Mechanical interlock | |  BLIM112-300 | | | | |
| Surge suppressor | | built-in with electronic module | | | | |

# Contactors

## CWM Series - IEC Standard Contactors

| | | | | |
|---|---|---|---|---|
| | |  |  | |
| **Catalog Number** | | **CWM400** | **CWM630** | **CWM800** |
| **Rated Optional Power** | | | | |
| **Single-phase** | | | | |
| 220/230Vac | Hp | - | - | - |
| 380Vac | Hp | - | - | - |
| **Three-phase** | | | | |
| 230Vac | Hp | 150 | 250 | 300 |
| 460Vac | Hp | 300 | 500 | 600 |
| 575Vac | Hp | 300 | 500 | 600 |
| General Purpose Rating | A | 450 | 660 | 900 |
| Inductive/Motor Switching AC-3 | | 400 | 630 | 800 |
| Overload relays | A | RW407-1D  400…600<br>560…840 | | |
| Auxiliary contact blocks | |  BCXML11 CWM800 (1NO+1NC)<br>BCXMRL11 CWM800 (1NO+1NC) | | |
| Mechanical interlock | |  BLIM CWM400 |  BLIM CWM800 | |
| Surge supporessor | | (Built-in with electronic module) | | |



Data is subject to change without notice.

## CWM Series - IEC Standard Contactors

**3 pole contactors with AC coil**







| Maximum UL Horsepower | | | | | | Auxiliary Contacts | | Current Rating Amps | Catalog Number[1] | List Price | Multiplier |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Single Phase | | Three Phase | | | | | | | | | |
| 115V | 230V | 200V | 230V | 460V | 575V | N.O. | N.C. | | | | |
| 1/2 | 1 1/2 | 3 | 3 | 5 | 7 1/2 | 1 | 0 | 9 | CWM9-10-30* | $72 | Z1 |
| | | | | | | 0 | 1 | | CWM9-01-30* | | |
| 3/4 | 2 | 3 | 3 | 7 1/2 | 10 | 1 | 0 | 12 | CWM12-10-30* | $89 | |
| | | | | | | 0 | 1 | | CWM12-01-30* | | |
| 1 | 3 | 5 | 5 | 10 | 15 | 1 | 0 | 18 | CWM18-10-30* | $103 | |
| | | | | | | 0 | 1 | | CWM18-01-30* | | |
| 2 | 5 | 7 1/2 | 7 1/2 | 15 | 15 | 0 | 0 | 25 | CWM25-00-30* | $118 | |
| 3 | 5 | 10 | 10 | 20 | 25 | 0 | 0 | 32 | CWM32-00-30* | $140 | |
| 3 | 7 1/2 | 10 | 15 | 30 | 25 | 0 | 0 | 40 | CWM40-00-30* | $164 | |
| 3 | 10 | 15 | 15 | 40 | 40 | 0 | 0 | 50 | CWM50-00-30* | $225 | |
| 5 | 10 | 20 | 20 | 50 | 50 | 0 | 0 | 65 | CWM65-00-30* | $255 | |
| 7 1/2 | 15 | 20 | 25 | 50 | 60 | 0 | 0 | 80 | CWM80-00-30* | $270 | |
| 7 1/2 | 15 | 25 | 30 | 60 | 75 | 0 | 0 | 95 | CWM95-00-30* | $365 | |
| 10 | 20 | 30 | 40 | 75 | 75 | 0 | 0 | 105 | CWM105-00-30* | $393 | |

*Note:*
*1) For other auxiliary contact onfigurations, please refer to page 183.*

**To complete the selection**
**- Replace "*" with desired coil voltage from Coil Voltage Code Table**

| * AC COIL VOLTAGE CODE SELECTION FOR CONTACTORS CWM9...CWM105 | | | | | | |
|---|---|---|---|---|---|---|
| 60 Hz | 24V[1)] | 48V | 120V | 208-240V | 480V | 600V |
| **CODE** | **V04** | **V10** | **V18** | **V24** | **V47** | **V56** |
| 50 Hz | - | 42V | 110V | - | 400-415V | 500V |

*- Other coil voltages available upon request*

### The Flexible Line from 5 to 75HP

The 5 to 75HP @ 460V range is differentiated by five frame sizes and only 4 varying widths, with the choice of either screw or DIN rail mounting. WEG offers one of the most compact 75HP @ 460V contactors in the market.

### Coil Technology

WEG Contactor AC coils have 4 terminals up to 30HP @ 460V, which allows an easy connection no matter the complexity of the application and wiring. From 32A up to 105A the contactors are equipped with an electronic circuit that provides an unmatched space saving solution, making the 50A through 105A contactors depth the same size.

# Contactors

## CWM Series - IEC Standard Contactors

### 3 pole contactors with DC coil







| Maximum UL Horsepower | | | | | | Auxiliary Contacts | | Current Rating Amps | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Single Phase | | Three Phase | | | | | | | | | |
| 115V | 230V | 200V | 230V | 460V | 575V | N.O. | N.C. | | | | |
| 3 | 5 | 10 | 10 | 20 | 25 | 0 | 0 | 32 | CWM32-00-30+ | $220 | Z1 |
| 3 | 7 1/2 | 10 | 15 | 30 | 25 | 0 | 0 | 40 | CWM40-00-30+ | $282 | |
| 3 | 10 | 15 | 15 | 40 | 40 | 0 | 0 | 50 | CWM50-00-30+ | $310 | |
| 5 | 10 | 20 | 20 | 50 | 50 | 0 | 0 | 65 | CWM65-00-30+ | $350 | |
| 7 1/2 | 15 | 20 | 25 | 50 | 60 | 0 | 0 | 80 | CWM80-00-30+ | $417 | |
| 7 1/2 | 15 | 25 | 30 | 60 | 75 | 0 | 0 | 95 | CWM95-00-30+ | $450 | |
| 10 | 20 | 30 | 40 | 75 | 75 | 0 | 0 | 105 | CWM105-00-30+ | $540 | |

*- For other auxiliary contact configurations please refer to page 183.*

*To complete the selection*
*- Replace "+" with desired coil voltage from Coil Voltage Code Table*

**+ DC COIL VOLTAGE CODE SELECTION FOR CONTACTORS CWM32...105**

**FOR CONTACTORS CWM32...CWM105**

| Voltage | 24-28V | 110-130V |
|---|---|---|



Data is subject to change without notice.

## 3 pole contactors with AC/DC electronic module coil







| Maximum UL Horsepower | | | | | | Auxiliary Contacts | | Current Rating Amps | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Single Phase | | Three Phase | | | | | | | | | |
| 115V | 230V | 200V | 230V | 460V | 575V | N.O. | N.C. | | | | |
| - | - | 40 | 50 | 100 | 100 | 2 | 2 | 112 | CWM112-22-30# | $865 | Z1 |
| - | - | 50 | 60 | 125 | 150 | 2 | 2 | 150 | CWM150-22-30# | $960 | |
| - | - | 60 | 75 | 150 | 200 | 2 | 2 | 180 | CWM180-22-30# | $1,350 | |
| - | - | 75 | 100 | 200 | 250 | 2 | 2 | 250 | CWM250-22-30# | $1,920 | |
| - | - | 100 | 125 | 250 | 300 | 2 | 2 | 300 | CWM300-22-30# | $2,150 | |
| - | - | 125 | 150 | 300 | 300 | 2 | 2 | 400 | CWM400-22-30^ | $2,950 | |
| - | - | 200 | 250 | 500 | 500 | 2 | 2 | 630 | CWM630-22-30^ | $4,460 | |
| - | - | 200 | 300 | 600 | 600 | 2 | 2 | 800 | CWM800-22-30^ | $6,530 | |

*- For different auxiliary contact configurations please refer to page 183.*

*To complete the selection*
*- Replace "#" or "^"with desired coil voltage from Coil Voltage Code Table*

### # AC/DC COIL VOLTAGE CODE SELECTION FOR CONTACTORS CWM112, 150, 180, 250, 300

| Voltage | 24-28Vac/Vdc | 110-130Vac/Vdc | 208-250Vac/Vdc | 430-500Vac/Vdc |
|---|---|---|---|---|
| CODE | E02 | E10 | E13 | E21 |
| Mounting on | CWM112-CWM300 | CWM112-CWM300 | CWM112-CWM300 | CWM112-CWM300 |

### ^ AC/DC COIL VOLTAGE CODE SELECTION FOR CONTACTORS CWM400...800

| Voltage | 100-240Vac/100-220Vdc | 100-127Vac/100-110Vdc | 200-240Vac/200-220Vdc | 440-575Vac |
|---|---|---|---|---|
| CODE | E36 | E35 | E39 | D82 |
| Mounting on | CWM400 | CWM630-CWM800 | CWM630-CWM800 | CWM400-CWM800 |

### The Tough Line from 100 to 600HP

With reliability as our goal, WEG contactors are modern and very compact, but they are also one of the most rugged line of contactors in the range from 100 to 600HP, assuring an extended life under the most challenging conditions of today's industry.

### Accessories

Side mounted auxiliary contact blocks are common for all CWM contactors, from 5 to 250HP @ 460V.

### Electronic Module

From 100 to 600HP @ 460V, WEG offers contactors with electronic module for AC/DC Coil Applications. Such coils provide a smoother switching, therefiore enhancing contactor's performance. Built-in surge suppressor is also standard.

# Contactors

## CWM Series - IEC Standard Contactors

### 2 pole contactors with AC coil

| Maximum UL Horsepower Single Phase | | Auxiliary Contacts | | Current Rating Amps | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|---|---|
| 115V | 230V | N.O. | N.C. | | | | |
| 1/2 | 1 1/2 | 0 | 0 | 9 | CWM9-00-20* | $65 | Z1 |
| 3/4 | 2 | 0 | 0 | 12 | CWM12-00-20* | $68 | |
| 1 | 3 | 0 | 0 | 18 | CWM18-00-20* | $73 | |
| 2 | 5 | 0 | 0 | 25 | CWM25-00-20* | $99 | |
| 3 | 5 | 0 | 0 | 32 | CWM32-00-20* | $126 | |
| 3 | 7 1/2 | 0 | 0 | 40 | CWM40-00-20* | $160 | |
| 3 | 10 | 0 | 0 | 50 | CWM50-00-20* | $174 | |
| 5 | 10 | 0 | 0 | 65 | CWM65-00-20* | $200 | |
| 7 1/2 | 15 | 0 | 0 | 80 | CWM80-00-20* | $231 | |
| 7 1/2 | 15 | 0 | 0 | 95 | CWM95-00-20* | $300 | |
| 10 | 20 | 0 | 0 | 105 | CWM105-00-20* | $321 | |

*- For other auxiliary contact configurations please refer to page 183*
*To complete the selection*
*- Replace "*" with desired coil voltage from Coil Voltage Code Table*

**FOR CONTACTORS CWM9...CWM105**

| * AC COIL VOLTAGE CODE SELECTION | | | |
|---|---|---|---|
| 60 Hz | 24V | 120V | 208-240V |
| CODE | V04 | V18 | V24 |
| 50 Hz | - | 110V | - |



Data is subject to change without notice.

## CWM-N Series - NEMA Rated Standard Contactor



The WEG CWM_N series NEMA rated contactor line has been designed for industrial duty and with reliability in mind. Rated for inductive loads up to 300 Amps or 200 Hp @ 460V, WEG can offer the suitable contactor for your application.

Customers who are used to specifying contactors (and starters), by a particular NEMA Size (size 00, 0, 1, 2, 3, 4, 5), now can use the WEG CWM_N series, NEMA rated contactors. Customers get the ease of choosing the product, the reliability of WEG quality, and still get the sophisticated arc quenching techniques to reduce excess heat on the contacts.

Given their compact footprints, CWM_N contactors allow total panel space optimization, with only a few compact frame sizes from 5 to 200 Hp @ 460 V. Reducing inventory is a “snap” with CWM’s common accessories. For example, side mounted auxiliary contact blocks are the same from 5 to 200 Hp @ 460 V.

C UL US

UL File No. E202315

### Standard Features:

- Ease of choosing product
- Compact footprint
- Arc Quenching technique
- Reduced inventory with common accessories
- Adjustable thermal overload relay for motor protection
- Reliable WEG Quality

| NEMA Size | NEMA Continuous Amp rating | WEG Continuous Amp rating | HP @ 230 V | HP @ 460 V |
|---|---|---|---|---|
| 00 | 9 | 9 | 1.5 | 2 |
| 0 | 18 | 18 | 3 | 5 |
| 1 | 27 | 32 | 7.5 | 10 |
| 2 | 45 | 50 | 15 | 25 |
| 3 | 90 | 95 | 30 | 50 |
| 4 | 135 | 150 | 50 | 100 |
| 5 | 270 | 300 | 100 | 200 |

# Contactors

## CWM-N Series - NEMA Rated Standard Contactor






| Catalog Number | | CWM9N | CWM18N | CWM32N | CWM50N | CWM95N |
|---|---|---|---|---|---|---|
| NEMA Size | | 00 | 0 | 1 | 2 | 3 |
| **Rated operational power [1]** | | | | | | |
| **Single-phase** | | | | | | |
| 115Vac | Hp | 1/3 | 1 | 3 | 3 | 7 1/2 |
| 230Vac | Hp | 1 | 3 | 5 | 7 1/2 | 15 |
| **Three-phase** | | | | | | |
| 230Vac | Hp | 1 1/2 | 3 | 7 1/2 | 15 | 30 |
| 460Vac | Hp | 2 | 5 | 10 | 25 | 50 |
| 575Vac | Hp | 2 | 5 | 10 | 25 | 50 |
| General Purpose A Rating | | 25 | 32 | 60 | 90 | 140 |

**Overload Relays**

**RWM40E**



0.4 . . . 2.0
1.6 . . . 8.0
5 . . . . 25
8 . . . 40

**RWM112E**



14 . . . 56
28 . . . 112

**Auxillary contact blocks**



BCXMF10 (1NO)
BCXMF01 (1NC)



BCXML 11 (1NO+1NC)
BCXML 20 (2NO)
BCXMRL 11 (1NO+1NC)
BCXMRL 20 (2NO)

**Mechanical interlock**



BLIM9-105
BLIM.02 9-105 (2NC)

**Electronic Relays**



Timing Relays - RTW Series
(Please refer to page 264)

**Surge suppressor**




RC block:
BAMRC4 D53 24-48 V 50/60Hz
BAMRC5 D55 50-127 V 50/60Hz
BAMRC6 D63 130-250 V 50/60Hz

Varistor block:
BAMV1 D68 270-380 V 50/60Hz
BAMV2 D73 400-510 V 50/60Hz




RC block:
BAMRC7 D53 24-48 V 50/60Hz
BAMRC8 D55 50-127 V 50/60Hz
BAMRC9 D63 130-250 V 50/60Hz

Varistor block:
BAMV1 D68 270-380 V 50/60Hz
BAMV2 D73 400-510 V 50/60Hz



Data is subject to change without notice.

## CWM-N Series - NEMA Rated Standard Contactor



| | |  |  |
|---|---|---|---|
| **Catalog Number** | **3 Poles** | **CWM150N** | **CWM300N** |
| NEMA Sizes | | 4 | 5 |
| **Rated operational power** [1] | | | |
| **Single-phase** | | | |
| 115Vac | Hp | - | - |
| 230Vac | Hp | - | - |
| Three Phase | | | |
| 230Vac | Hp | 50 | 100 |
| 460Vac | Hp | 100 | 200 |
| 575Vac | Hp | 100 | 200 |
| General Purpose Rating | A | 225 | 410 |
| Solid State Overload relays | A | RWM420E  50. . . 250<br>85 . . . 420 | |
| Auxiliary contact blocks | |  BCXML11 (1NO+1NC)<br>BCXML20 (2NO)<br>BCXMRL11 (1NO+1NC)<br>BCXMRL20 (2NO) | |
| Mechanical interlock | |  BLIM112-300 | |
| Surge suppressor | | built-in with electronic module | |

*1) Note: Some motors characteristics may vary according to each manufacturer.*

# Contactors

## CWM-N Series - NEMA Rated Standard Contactor

### 3 POLE NEMA CONTACTORS WITH AC COIL



| NEMA Size | Maximum UL Horsepower | | | | | | Auxiliary Contacts | | Current Rating Amps | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Single Phase | | Three Phase | | | | | | | | | |
| | 115V | 230V | 200V | 230V | 460V | 575V | N.O. | N.C. | | | | |
| 00 | 1/3 | 1 | 1.5 | 1.5 | 2 | 2 | 1 | 0 | 9 | CWM9N-10-30* | $103 | |
| | | | | | | | 0 | 1 | | CWM9N-01-30* | | |
| 0 | 1 | 2 | 3 | 3 | 5 | 5 | 1 | 0 | 18 | CWM18N-10-30* | $118 | |
| | | | | | | | 0 | 1 | | CWM18N-01-30* | | |
| 1 | 2 | 3 | 7.5 | 7.5 | 10 | 10 | 0 | 0 | 32 | CWM32N-00-30* | $164 | Z1 |
| 2 | 3 | 7.5 | 10 | 15 | 25 | 25 | 0 | 0 | 50 | CWM50N-00-30* | $233 | |
| 3 | 7.5 | 15 | 25 | 30 | 50 | 50 | 0 | 0 | 95 | CWM95N-00-30* | $384 | |
| 4 | - | - | 40 | 50 | 100 | 100 | 2 | 2 | 150 | CWM150N-22-30# | $1,350 | |
| 5 | - | - | 75 | 100 | 200 | 200 | 2 | 2 | 300 | CWM300N-22-30# | $2,300 | |

*- For additional auxilliary contacts, see page 183.*

*** AC COIL VOLTAGE CODE SELECTION**

FOR CONTACTORS CWM9N...CWM95N

| 60 Hz | 24V | 120V | 208-240V | 480V | 600V |
|---|---|---|---|---|---|
| **CODE** | **V04** | **V18** | **V24** | **V47** | **V56** |
| 50 Hz | - | 110V | - | 400-415V | 500V |

**# AC / DC COIL VOLTAGE CODE SELECTION**

# FOR CONTACTORS: CWM150N, CWM300N

| Voltage | 24-28 Vac/Vdc | 110-130 Vac/Vdc | 208-250 Vac/Vdc | 430-500 VAC/VDC |
|---|---|---|---|---|
| **CODE** | **E02** | **E10** | **E13** | **E21** |

*Notes:*
*1) CWM_N Series - 9 to 95 A - AC COIL*
*2) CWM_N Series - 150 to 300 A - AC/DC Coil with Electronic Module*



Data is subject to change without notice.

## Accessories

### Auxiliary Contacts Block

| Location/Description | | Mounting on Contactors | AuxiliaryContacts N.O. | AuxiliaryContacts N.C. | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|---|---|
|  | Front Mounting | CWM9…105 CWM9N…95N | 1 | 0 | BCXMF10 | $10 | Z1 |
| | | | 0 | 1 | BCXMF01 | $10 | |
| | Side Mounting | CWM9…CWM300 CWM9N…300N | 1 | 1 | BCXML11 | $22 | |
| | | | 2 | 0 | BCXML20 | $22 | |
|  | Side Mounting, Second Block | | 1 | 1 | BCXMRL11 | $22 | |
| | | | 2 | 0 | BCXMRL20 | $22 | |
| | Side Mounting | CWM400…CWM800 | 1 | 1 | BCXML11 CWM800 | $65 | |
| | Side Mounting, Second Block | | 1 | 1 | BCXMRL11 CWM800 | $65 | |

*Maximum # of added auxiliary contacts per contactor frame size: Note that side mountable version has 2 aux. contacts per block. CWM9...25 = 4 aux. contacts; CWM32...40 = 6 aux. contacts; CWM50...300E = 8 aux. contacts.*

### Mechanical Interlock Block

| Location/Description | | Mounting on Contactors | AuxiliaryContacts N.O. | AuxiliaryContacts N.C. | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|---|---|
|  | Side mounted between two contactors | CWM9...105 CWM9N…95N | 0 | 0 | BLIM 9-105 | $29 | Z1 |
| | | | 0 | 2 | BLIM.02 9-105 | $40 | |
|  | | CWM112…300 1CWM150N CWM300N | 0 | 0 | BLIM 112-300 | $77 | |
| | | CWM400 | 0 | 0 | BLIM CWM400 | $63 | |
|  | Bottom mounted | CWM630…CWM800 | 0 | 0 | BLIM CWM800 | $1,850 | |

*Notes: For CWM9...CWM105 the mechanical interlock can be used to interlock different frame sizes. For CWM112...CWM300, the mechanical interlock has to be used with contactors that have the same mechanical frame size.*

*For BLIM CWM800, a metal mount base is provided with this accessory for an accurate assembling of the contactors.*

### Surge Suppressors

| Description | | Mounting on Contactors | Voltage Range | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|---|
|   | Limits switching transients from contactor pick-up | CWM9...40 CWM9N . . .32N | 24...48Vac | BAMRC4 D53 | $30 | Z1 |
| | | | 50...127Vac | BAMRC5 D55 | $30 | |
| | | | 130...250Vac | BAMRC6 D63 | $30 | |
| | | CWM50...105 CWM50N. . . 95N | 24...48Vac | BAMRC7 D53 | $30 | |
| | | | 50...127Vac | BAMRC8 D55 | $30 | |
| | | | 130...250Vac | BAMRC9 D63 | $30 | |
|   | | CWM9...105 CWM9N . . .95N | 270 - 380Vac | BAMV D68 | $30 | |
| | | | 400 - 510Vac | BAMV2 V73 | $30 | |

*Note: CWM112...300 with Electronic Module and CWM400...800 already have the surge suppressor built-in on the electronic module*

# Contactors

## CWM Series - IEC Standard Contactors

### Accessories

**Terminal Cover for CWM_E Contactor Series**

| | Location/Description | Mounting on Contactors | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|
|  | Protection for contactor terminals (2 covers per package) | CWM150 | BMP CWM150 | $125 | Z1 |
| | | CWM180 | BMP CWM180 | $125 | |
| | | CWM300 | BMP CWM300 | $125 | |
| | | CWM400 | BMP CWM400 | $60 | |
| | | CWM630…CWM800 | BMP CWM800 | $110 | |

**Lugs for CWM Contactor Series (3 units per package)**

| | Description / Wire Range | Mounting on Contactors | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|
|  | 300 MCM…6 AWG | CWM112...150 | LW1-S300 | $52 | Z1 |
| | 300 MCM…6 AWG | CWM180 | LW2-S300 | $52 | |
| | 600 MCM…4 AWG | CWM250…CWM300 | LW1-S600 | $110 | |
| | (2) 3-4/0 AWG | CWM400 | BMJ CWM400 | $98 | |
| | (2) 3/0-600 MCM | CWM630…CWM800 | BMJ CWM800 | $158 | |

## Connector links (3 per package)

| | Description | Contactor | Overload Relay | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|---|
|  | Link connectors for easier CWM contactors and RW overload relays assembly | CWM112 | RW117-2D3 | GA117D | $41 | Z2 |
| | | CWM150 | RW317-1D3 | GA317-1D | $68 | |
| | | CWM180 | RW317-1D3 | GA317-2D | $70 | |
| | | CWM250 / CWM300 | RW317-1D3 | GA317-3D | $118 | |
| | | CWM400 | RW317-1D3 | GA317-10D | $118 | |



Data is subject to change without notice.

## Replacement Coil





| Description | Mounting on Contactors | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|
| Coil voltage code is required to complete part number | **AC COIL** | | | |
| | CWM9... 25<br>CWM9N... 18N | **BCA4-25*** | **$28** | Z1 |
| | CWM32...40<br>CWM32N | **BCA4-40*** | **$35** | |
| | CWM50...105<br>CWM50N... 95N | **BCA-105*** | **$44** | |
| | **DC COIL[2]** | | | |
| | CWM32...40 | **BECC4-40+** | **$100** | Z1 |
| | CWM50...105 | **BECC-105+** | **$60** | |
| | **AC/DC ELECTRONIC MODULE & COIL[1]** | | | |
| | CWM112...150<br>CWM150N | **BCE-150#** | **$90** | Z1 |
| | | **ME-300#** | **$215** | |
| | CWM180 | **BCE-215#** | **$118** | |
| | | **ME-300#** | **$260** | |
| | CWM250…300<br>CWM300N | **BCE-300#** | **$146** | |
| | | **ME-300#** | **$260** | |
| | CWM400 | **BCE-400 ^** | **$700** | |
| | CWM630…800 | **BCE-800 ^** | **$850** | |

*-1) Module (ME-) & Coil (BCE-) must be used together for a proper contactor operation.*
*-2) DC Option does not include NEMA Rated Contactors*

*** AC COIL VOLTAGE CODE SELECTION FOR CONTACTORS CWM9...CWM105, CWM150N, CWM300N, CWM9N...95**

| 60 Hz | 24V | 48V | 120V | 208-240V | 277V | 480V | 600V |
|---|---|---|---|---|---|---|---|
| **CODE** | **V04** | **V10** | **V18** | **V24** | **V37** | **V47** | **V56** |
| 50 Hz | - | 42V | 110V | - | 230-240V | 400-415V | 500V |

*1) Stock available only for contactor version ...-10-30... and ...-00-30.... Example CWM9-10-30V24 or CWM50-00-30V24*

**+ DC COIL VOLTAGE CODE SELECTION 1)**

| FOR CONTACTORS CWM32...CWM105 | | |
|---|---|---|
| Voltage | 24-28V | 110-130V |
| **CODE** | **C34** | **C40** |

**# AC/DC COIL VOLTAGE CODE SELECTION - Electronic Contactor Required**

| FOR CONTACTORS CWM112, 150, 180, 250, 300, CWM150N, CWM300N | | | | |
|---|---|---|---|---|
| **Voltage** | **24-28Vac/Vdc** | **110-130Vac/Vdc** | **208-250Vac/Vdc** | **430-500Vac/Vdc** |
| **CODE** | **E02** | **E10** | **E13** | **E21** |
| Mounting on | CWM112-CWM300 | CWM112-CWM300 | CWM112-CWM300 | CWM112-CWM300 |

**^ AC/DC COIL VOLTAGE CODE SELECTION - Electronic Contactor Required**

| FOR CONTACTORS CWM400, 630, 800 | | | | |
|---|---|---|---|---|
| Voltage | 100-240Vac/100-220Vdc | 100-127Vac/100-110Vdc | 200-240Vac/200-220Vdc | 440-575Vac |
| **CODE** | **E36** | **E35** | **E39** | **D82** |
| Mounting on | CWM400 | CWM630-CWM800 | CWM630-CWM800 | CWM400-CWM800 |

*1) DC coils cannot be used in AC coil contactors due to difference in size of coil housing.*

# Contactors

## CWM Series - IEC Standard Contactors

### Control circuit ratings - AC Coil

| TYPE | | CWM9 | CWM12 | CWM18 | CWM25 | CWM32 | CWM40 | CWM50 | CWM65 | CWM80 | CWM95 | CWM105 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Rated Insulation Voltage Ui** | | | | | | | | | | | | |
| Acc. IEC; VDE 0660 | [V] | 1000 | | | | | | | | | | |
| Acc. UL; CSA | [V] | 600 | | | | | | | | | | |
| **Rated Operating Voltage Ue** | | | | | | | | | | | | |
| Acc. IEC; VDE 0660 | [V] | 690 | | | | | | | | | | |
| Acc. UL; CSA | [V] | 600 | | | | | | | | | | |
| **Standard Voltages 60Hz** | [V] | 24...600 | | | | | | | | | | |
| **Coil Operating limits** | | | | | | | | | | | | |
| Monofrequency coils xUc | [V] | | | | | 0.85...1.1 | | | | | | - |
| Pick-up xUc | [V] | 0.4...0.76 | | | | 0.5...0.76 | | 0.5...0.76 | | | | - |
| Drop-out xUc | [V] | 0.25...0.65 | | | | 0.3...0.65 | | 0.25...0.6 | | | | - |
| **Operating Time** | | | | | | | | | | | | |
| Coil energization - N.O. | [ms] | 8...20 | | | | 10...19 | | 15...30 | | | | - |
| Coil de-energization - N.O. | [ms] | 6...13 | | | | 5...25 | | 9...15 | | | | - |
| **Coil Consumption** | | | | | | | | | | | | |
| Single coils | | | | | | | | | | | | |
| Sealed | [VA] | 4...7.2 | | | | 6.6...12.5 | | 13.1....19.1 | | | | - |
| Inrush | [VA] | 70 | | | | 98 | | 255 | | | | - |
| **Thermal Power Dissipation** | | | | | | | | | | | | |
| 60Hz | [W] | 2.6 | | | | 4.3 | | 8.0 | | | | - |
| **Power Factor** | | | | | | | | | | | | |
| Closed | Cos phi | 0.28 | | | | 0.34 | | 0.32 | | | | - |
| Opened | Cos phi | 0.85 | | | | 0.69 | | 0.54 | | | | - |
| **Stranded / Solid (UL / CSA)** | [AWG] | 2x12-10 | 2x12-10 | 2x12-10 | 2x12-10 | 2x12-10 | 2x12-10 | 2x12-10 | 2x12-10 | 2x12-10 | 2x12-10 | 2x12-10 |

### Control circuit ratings - DC Coil

| TYPE | | CWM9 | CWM12 | CWM18 | CWM25 | CWM32 | CWM40 | CWM50 | CWM65 | CWM80 | CWM95 | CWM105 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Rated Insulation Voltage Ui** | | | | | | | | | | | | |
| Acc. IEC; VDE 0660 | [V] | 1000 | | | | | | | | | | |
| Acc. UL; CSA | [V] | 600 | | | | | | | | | | |
| **Standard Voltages** | [V] | 12...440 | | | | 24...240 | | 24...240 | | | | |
| **Coil Operating limits** | | | | | | | | | | | | |
| Pick-up xUc | [V] | 0.4...0.7 | | | | 0.85...1.1 | | 0.7...0.8 | | | | |
| Drop-out xUc | [V] | 0.15...0.4 | | | | 0.45...0.75 | | 0.4...0.6 | | | | |
| | | | | | | 0.15...0.45 | | | | | | |
| **Operating Time** | | | | | | | | | | | | |
| Coil energization - N.O. | [ms] | 35...45 | | | | 40...55 | | 50...60 | | | | |
| Coil de-energization - N.O. | [ms] | 7...12 | | | | 30...65 | | 55...60 | | | | |
| **Coil Consumption** | | | | | | | | | | | | |
| Sealed | [W] | 3.8...9.0 | | | | 6 | | 6.5 | | | | |
| Inrush | [W] | 3.8...9.0 | | | | 240 | | 340 | | | | |
| **Stranded / Solid (UL / CSA)** | [AWG] | 2x12-10 | 2x12-10 | 2x12-10 | 2x12-10 | 2x12-10 | 2x12-10 | 2x12-10 | 2x12-10 | 2x12-10 | 2x12-10 | 2x12-10 |



Data is subject to change without notice.

## IEC Contactors - CWM Series

| TYPE | | CWM112 | CWM150 | CWM180 | CWM250 | CWM300 | CWM400 | CWM630 | CWM800 |
|---|---|---|---|---|---|---|---|---|---|
| **Rated Insulation Voltage Ui** | | | | | | | | | |
| Acc. IEC; VDE 0660 | [V] | 1000 | | | | | | | |
| Acc. UL; CSA | [V] | 600 | | | | | | | |
| **Rated Operating Voltage Ue** | | | | | | | | | |
| Acc. IEC; VDE 0660 | [V] | 690 | | | | | | | |
| Acc. UL; CSA | [V] | 600 | | | | | | | |
| Standard Voltages 50Hz; 60Hz; DC | [V] | 24…600 | | | | | | | |
| **Coil Operating limits** | | | | | | | | | |
| xUc | [V] | 0.8…1.1 | | | | 0.85...1.1 | | | |
| Pick-up xUc | [V] | 0.6...0.75 | | | | 0.77...0.83 | | | |
| Drop-out xUc | [V] | 0.40...0.60 | | | | 0.48...0.53 | | | |
| **Operating Time** | | | | | | | | | |
| Coil energization - N.O. | [ms] | 60…70 | 60…70 | 60…70 | 60…70 | 60…70 | 64…68 | 66…70 | 66…70 |
| Coil de-energization - N.O. | [ms] | 13…17 | 13…17 | 13…17 | 13…17 | 13…17 | 43…47 | 45…49 | 45…49 |
| **Coil Consumption** | | | | | | | | | |
| Sealed AC | [VA] | 16.3 | 16.3 | 21.5 | 35.2 | 35.2 | 14 | 17 | 29 |
| Inrush AC | [VA] | 322 | 322 | 426 | 518 | 518 | 571 | 1000 | 1000 |
| Sealed DC | [VA] | 11.0 | 11.0 | 14.3 | 24.2 | 24.2 | 14 | 17 | 29 |
| Inrush DC | [VA] | 403 | 403 | 529 | 644 | 644 | 571 | 1000 | 1000 |
| **Thermal Power Dissipation** | | | | | | | | | |
| AC | [W] | 3.9 | 3.9 | 3.8 | 3.7 | 3.7 | 4.7 | 4.9 | 5.3 |
| DC | [W] | 2.4 | 2.4 | 2.4 | 2.5 | 2.5 | 5.0 | 6.3 | 7.8 |

# Contactors

## CWM Series - IEC Standard Contactors

### Power Contacts

| TYPE | | | CWM9 | CWM12 | CWM18 | CWM25 | CWM32 | CWM40 | CWM50 | CWM65 | CWM80 | CWM95 | CWM105 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Standard UL/CSA Ratings** | | | | | | | | | | | | | |
| Rated Operating Voltage | | [V] | 600 | | | | | | | | | | |
| AC-1 (General Purpose) | | [A] | 25 | 25 | 32 | 32 | 60 | 60 | 90 | 110 | 110 | 140 | 140 |
| Switching Motor Loads | | | | | | | | | | | | | |
| Full Voltage - 50/60Hz | | | | | | | | | | | | | |
| 1-phase | 115V | [A] | 9.8 | 13.8 | 16 | 24 | 34 | 34 | 56 | 56 | 80 | 80 | 100 |
| | 230V | [A] | 10 | 12 | 17 | 28 | 28 | 28 | 40 | 50 | 68 | 68 | 88 |
| | 115V | [HP] | 1/2 | 3/4 | 1 | 2 | 3 | 3 | 5 | 5 | 7-1/2 | 7-1/2 | 10 |
| | 230V | [HP] | 1-1/2 | 2 | 3 | 5 | 5 | 7 1/2 | 10 | 10 | 15 | 15 | 20 |
| 3-phase | 200V | [A] | 11 | 11 | 17.5 | 25 | 32.2 | 32.2 | 48.3 | 62.1 | 62.1 | 78.2 | 92 |
| | 230V | [A] | 9.6 | 9.6 | 15.2 | 22 | 28 | 42 | 42 | 54 | 68 | 80 | 104 |
| | 460V | [A] | 7.6 | 11 | 14 | 21 | 27 | 40 | 52 | 65 | 65 | 77 | 96 |
| | 575V | [A] | 9 | 11 | 17 | 17 | 27 | 27 | 41 | 52 | 62 | 77 | 77 |
| | 200V | [HP] | 3 | 3 | 5 | 7-1/2 | 10 | 10 | 15 | 20 | 20 | 25 | 30 |
| | 230V | [HP] | 3 | 3 | 5 | 7-1/2 | 10 | 15 | 15 | 20 | 25 | 30 | 40 |
| | 460V | [HP] | 5 | 7-1/2 | 10 | 15 | 20 | 30 | 40 | 50 | 50 | 60 | 75 |
| | 575V | [HP] | 7-1/2 | 10 | 15 | 15 | 25 | 25 | 40 | 50 | 60 | 75 | 75 |
| Short Circuit Rating | 600V | [kA] | 5 | 5 | 5 | 5 | 5 | 5 | 10 | 10 | 10 | 10 | 10 |
| **Standard IEC Ratings (IEC EN 60947)** | | | | | | | | | | | | | |
| Rated Operating Voltage | | [V] | 690 | | | | | | 1000 | | | | |
| Rated Thermal Current Ith | | [A] | 25 | 25 | 32 | 45 | 60 | 60 | 90 | 110 | 110 | 140 | 140 |
| Switching Motor Loads | | | | | | | | | | | | | |
| AC-3 - 50/60Hz | | | | | | | | | | | | | |
| 3-phase | 220-240V | [A] | 9 | 12 | 18 | 25 | 32 | 40 | 50 | 65 | 80 | 95 | 105 |
| | 380-400V | [A] | 9 | 12 | 18 | 25 | 32 | 40 | 50 | 65 | 80 | 95 | 105 |
| | 415-440V | [A] | 9 | 12 | 18 | 25 | 32 | 40 | 50 | 65 | 80 | 95 | 105 |
| | 500V | [A] | 7.5 | 10.5 | 14 | 19 | 24 | 32 | 38 | 55 | 63 | 79 | 85 |
| | 660-690V | [A] | 7 | 9 | 13 | 15 | 22 | 25 | 34 | 44 | 48 | 60 | 80 |
| | 220-240V | [kW] | 2.2 | 3 | 4 | 7.5 | 9 | 11 | 15 | 18.5 | 22 | 25 | 30 |
| | 380-400V | [kW] | 4 | 5.5 | 7.5 | 11 | 15 | 18.5 | 22 | 30 | 37 | 45 | 55 |
| | 415-440V | [kW] | 4 | 5.5 | 7.5 | 11 | 15 | 22 | 25 | 37 | 45 | 50 | 55 |
| | 500V | [kW] | 5.5 | 7.5 | 10 | 15 | 18.5 | 25 | 30 | 40 | 45 | 55 | 65 |
| | 660-690V | [kW] | 5.5 | 7.5 | 10 | 15 | 18.5 | 30 | 35 | 45 | 45 | 55 | 65 |
| **Maximum Switching Rate** | | | | | | | | | | | | | |
| | AC-1 | [ops/hr] | 1,200 | 1,200 | 1,200 | 1,200 | 1,200 | 1,200 | 1,200 | 1,200 | 1,200 | 1,200 | 1,200 |
| | AC-3 | [ops/hr] | 1,200 | 1,200 | 1,200 | 1,200 | 1,200 | 1,200 | 1,200 | 1,200 | 1,200 | 600 | 600 |
| | no load | [ops/hr] | 9,000 | 9,000 | 9,000 | 9,000 | 9,000 | 9,000 | 5,000 | 5,000 | 5,000 | 5,000 | 5,000 |
| **AC-4** | | | | | | | | | | | | | |
| 200,000 operations; | <= 690V | [A] | 5 | 7 | 8 | 12 | 16 | 18.5 | 23 | 30 | 37 | 44 | 50 |
| 50/60Hz | 220-230V | [kW] | 1.1 | 1.5 | 1.5 | 3 | 4 | 4.5 | 5.5 | 7.5 | 9.2 | 11 | 12.5 |
| | | [HP] | 1.5 | 2 | 2 | 4 | 5.4 | 6 | 7.5 | 10 | 12.5 | 15 | 17 |
| | 380-400V | [kW] | 2.2 | 3 | 3.7 | 5.5 | 7.5 | 9.2 | 11 | 15 | 18.5 | 22 | 22 |
| | | [HP] | 3 | 4 | 5 | 7.5 | 10 | 12.5 | 15 | 20 | 25 | 30 | 30 |
| | 415-440V | [kW] | 2.2 | 3.7 | 4.5 | 5.5 | 9.2 | 11 | 11 | 15 | 22 | 22 | 30 |
| | | [HP] | 3 | 5 | 6 | 7.5 | 12.5 | 15 | 15 | 20 | 30 | 30 | 40 |
| | 500V | [kW] | 3 | 4 | 5.5 | 7.5 | 10 | 11 | 15 | 18.5 | 22 | 25 | 30 |
| | | [HP] | 4 | 5.4 | 7.5 | 10 | 13 | 15 | 20 | 25 | 30 | 33 | 40 |
| | 660-690V | [kW] | 3 | 4.5 | 5.5 | 7.5 | 11 | 12.5 | 15 | 20 | 25 | 30 | 33 |
| | | [HP] | 4 | 6 | 7.5 | 10 | 15 | 17 | 20 | 27 | 33 | 40 | 45 |

*Power Contacts continued*



Data is subject to change without notice.

## Power Contacts cont.

| Type | | | CWM9 | CWM12 | CWM18 | CWM25 | CWM32 | CWM40 | CWM50 | CWM65 | CWM80 | CWM95 | CWM105 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Breaking Capacity | Ue=400V | [A] | 250 | 250 | 250 | 450 | 450 | 920 | 920 | 920 | 920 | 1050 | 1050 |
| | Ue=500V | [A] | 250 | 250 | 250 | 320 | 450 | 920 | 920 | 920 | 920 | 1050 | 1050 |
| | Ue=690V | [A] | 130 | 130 | 130 | 170 | 205 | 780 | 780 | 780 | 780 | 950 | 950 |
| Impedance per Pole | | [mW] | 2.41 | 2.41 | 2.35 | 1.65 | 1.28 | 0.95 | 0.85 | 0.86 | 0.86 | 0.76 | 0.76 |
| **Power Dissipation per Pole** | | | | | | | | | | | | | |
| | AC-1 | [W] | 1.47 | 1.47 | 2.46 | 3.34 | 4.6 | 3.42 | 6.86 | 10.40 | 10.40 | 14.89 | 14.89 |
| | AC-3 | [W] | 0.19 | 0.34 | 0.78 | 1.03 | 1.31 | 1.52 | 2.12 | 3.63 | 5.5 | 6.86 | 8.37 |
| **Short Time Current Icw** | | | | | | | | | | | | | |
| | 1 sec. | [A] | 455 | 455 | 570 | 630 | 1010 | 1265 | 1580 | 2530 | 2530 | 3300 | 3300 |
| | 5 sec. | [A] | 205 | 205 | 254 | 280 | 450 | 450 | 710 | 1130 | 1130 | 1485 | 1485 |
| | 10 sec. | [A] | 144 | 144 | 180 | 200 | 320 | 400 | 500 | 800 | 800 | 1050 | 1050 |
| | 30 sec. | [A] | 85 | 85 | 104 | 115 | 185 | 230 | 290 | 460 | 460 | 600 | 600 |
| | 1 min. | [A] | 60 | 60 | 74 | 80 | 130 | 165 | 205 | 325 | 325 | 430 | 430 |
| | 3 min. | [A] | 35 | 35 | 46 | 50 | 90 | 100 | 120 | 185 | 185 | 250 | 250 |
| | Rec. time | [min.] | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| **Short Circuit Coordination** | | | | | | | | | | | | | |
| Acc. to IEC | | | | | | | | | | | | | |
| Coordination Type “1” | gL/gG | [A] | 50 | 50 | 63 | 63 | 100 | 125 | 200 | 200 | 200 | 250 | 250 |
| Coordination Type “2” | gL/gG | [A] | 25 | 35 | 35 | 50 | 63 | 80 | 100 | 125 | 125 | 160 | 200 |
| Acc. to UL/CSA | J Type | [A] | 25 | 35 | 40 | 45 | 60 | 70 | 100 | 125 | 125 | 150 | 200 |

## Built-in Auxiliary Contacts

| TYPE | | | CWM9 | CWM12 | CWM18 |
|---|---|---|---|---|---|
| **Rated Insulation Voltage Ui** | | | | | |
| Acc. IEC; VDE 0660 | | [V] | 1000 | | |
| Acc. UL; CSA | | [V] | 600 | | |
| **Rated Operating Voltage Ue** | | | | | |
| Acc. IEC; VDE 0660 | | [V] | 690 | | |
| Acc. UL; CSA | | [V] | 600 | | |
| Rated Thermal Current Ith <=55ºC | | [A] | 20 | | |
| **Rated Operating Current Ie** | | | | | |
| Acc. IEC 60947-5-1 / AC-15 | 110-127V | [A] | 10 | | |
| | 220-240V | [A] | 10 | | |
| | 380-400V | [A] | 6 | | |
| | 415-450V | [A] | 5 | | |
| | 500V | [A] | 4 | | |
| | 660-690V | [A] | 2 | | |
| Acc. UL; CSA | | | A600 | | |
| **Rated Operating Current Ie** | | | | | |
| Acc. IEC 60947-5-1 / DC-13 | 24V | [A] | 6 | | |
| | 48V | [A] | 4 | | |
| | 110V | [A] | 2 | | |
| | 220V | [A] | 0.7 | | |
| | 440V | [A] | 0.7 | | |
| Acc. UL; CSA | | | P600 | | |
| **Making Capacity Im** | | | | | |
| AC-15 / AC-11 | Ue <= 690V 50/60Hz | [A] | 250 | | |
| DC-13 / DC-11 | Ue <= 440Vdc | [A] | 250 | | |
| **Breaking Capacity Ic** | | | | | |
| AC-15 / AC-11 | Ue <= 400V 50/60Hz | [A] | 250 | | |
| DC-13 / DC-11 | Ue <=220Vdc | [A] | 2 | | |
| **Short Circuit Protection with Fuses** | | | | | |
| Acc. IEC 60947-5-1 - gL/gG | | [A] | 10 | | |
| Minimum Switching Capacity | | [V/mA] | 17/5 | | |
| Electrical Endurance | | Million ops. | 1 | | |
| Mechanical Endurance | | Million ops. | 10 | | |
| Guaranteed Non-Overlap Time | | [ms] | 1.5 | | |
| Insulation Resistance | | [MOhm] | >10 | | |

# Contactors

## CWM Series - IEC Standard Contactors

### Power Contacts cont.

| TYPE | Units | | CWM112 | CWM150 | CWM180 | CWM250 | CWM300 | CWM400 | CWM630 | CWM800 |
|---|---|---|---|---|---|---|---|---|---|---|
| **NEMA Ratings** | | | | | | | | | | |
| Rated Operating Voltage | | [V] | 600 | | | | | | | |
| AC-1 (General Purpose) | | [A] | 170 | 170 | 200 | 300 | 400 | 450 | 660 | 900 |
| Switching Motor Loads | | | | | | | | | | |
| Full Voltage - 50/60Hz | | | | | | | | | | |
| 1-phase | 115V | [A] | - | - | - | - | - | - | - | - |
| | 230V | [A] | - | - | - | - | - | - | - | - |
| | 115V | [HP] | - | - | - | - | - | - | - | - |
| | 230V | [HP] | - | - | - | - | - | - | - | - |
| 3-phase | 200V | [A] | 120 | 150 | 177 | 221 | 285 | 359 | 414 | 552 |
| | 230V | [A] | 130 | 154 | 192 | 248 | 312 | 360 | 480 | 772 |
| | 460V | [A] | 124 | 156 | 180 | 240 | 302 | 361 | 477 | - |
| | 575V | [A] | 99 | 144 | 192 | 242 | 336 | 289 | 382 | - |
| | 200V | [HP] | 40 | 50 | 60 | 75 | 100 | 125 | 150 | 200 |
| | 230V | [HP] | 50 | 60 | 75 | 100 | 125 | 150 | 200 | 300 |
| | 460V | [HP] | 100 | 125 | 150 | 200 | 250 | 300 | 400 | 600 |
| | 575V | [HP] | 100 | 150 | 200 | 250 | 350 | 300 | 400 | 600 |
| Short Circuit Rating | 600V | [kA] | 10 | 10 | 10 | 18 | 18 | 18 | 30 | 30 |
| **Standard IEC Ratings (IEC/EN 60947)** | | | | | | | | | | |
| Rated Operating Voltage | | [V] | 1000 | | | | | | | |
| Rated Thermal Current Ith | | [A] | 180 | 225 | 225 | 350 | 350 | 450 | 660 | 900 |
| **Switching Motor Loads** | | | | | | | | | | |
| **AC-3 - 50/60Hz** | | | | | | | | | | |
| **3-phase** | 220-240V | [A] | 112 | 150 | 180 | 250 | 300 | 400 | 630 | 800 |
| | 380-400V | [A] | 112 | 150 | 180 | 250 | 300 | 400 | 630 | 800 |
| | 415-440V | [A] | 112 | 150 | 180 | 250 | 300 | 400 | 630 | 800 |
| | 500V | [A] | 95 | 130 | 155 | 220 | 265 | 350 | 500 | 720 |
| | 660-690V | [A] | 82 | 110 | 135 | 185 | 220 | 300 | 420 | 630 |
| | 220-240V | [kW] | 30 | 45 | 55 | 75 | 90 | 110 | 185 | 220 |
| | 380-400V | [kW] | 55 | 75 | 90 | 132 | 160 | 220 | 330 | 450 |
| | 415-440V | [kW] | 55 | 90 | 110 | 150 | 185 | 220 | 370 | 500 |
| | 500V | [kW] | 55 | 90 | 110 | 160 | 200 | 220 | 330 | 500 |
| | 660-690V | [kW] | 75 | 110 | 110 | 160 | 200 | 260 | 400 | 560 |
| **Maximum Switching Rate** | | | | | | | | | | |
| | AC-1 | [ops/hr] | 600 | 600 | 600 | 600 | 600 | 500 | 500 | 500 |
| | AC-3 | [ops/hr] | 600 | 600 | 600 | 600 | 600 | 500 | 500 | 500 |
| | no load | [ops/hr] | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 |



Data is subject to change without notice.

## Power Contact cont.

| TYPE | | | CWM112 | CWM150 | CWM180 | CWM250 | CWM300 | CWM400 | CWM500 | CWM630 | CWM800 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **AC-4** | **Voltage** | **Units** | | | | | | | | | |
| 200,000 operations; | <= 690V | [A] | 50 | 55 | 58 | 100 | 130 | - | - | - | - |
| 50/60Hz | 220-230V | [kW] | 18.5 | 20 | 22 | 37 | 45 | 90 | - | 110 | 185 |
| | | [HP] | 25 | 27 | 30 | 50 | 60 | 125 | - | 150 | 250 |
| | 380-400V | [kW] | 30 | 33 | 37 | 55 | 75 | 150 | - | 220 | 330 |
| | | [HP] | 40 | 44 | 50 | 75 | 100 | 200 | - | 300 | 450 |
| | 415-440V | [kW] | 37 | 40 | 45 | 63 | 80 | 185 | - | 220 | 370 |
| | | [HP] | 50 | 54 | 60 | 84 | 107 | 250 | - | 300 | 500 |
| | 500V | [kW] | 40 | 45 | 50 | 75 | 90 | - | - | - | - |
| | | [HP] | 54 | 60 | 67 | 100 | 121 | - | - | - | - |
| | 660-690V | [kW] | 45 | 50 | 55 | 90 | 100 | - | - | - | - |
| Maximum Switching Rate | | [HP] | 600 | 67 | 75 | 121 | 133 | - | - | - | - |
| | | [ops/hr] | 150 | 150 | 150 | 150 | 150 | - | - | - | - |
| Making Capacity | | [A] | 1430 | 1820 | 2100 | 2600 | 3000 | - | - | - | - |
| **Breaking Capacity** | | | | | | | | | | | |
| | Ue<=400V | [A] | 1290 | 1350 | 1400 | 2000 | - | 4000 | - | 6300 | 8000 |
| | Ue=500V | [A] | 1290 | 1350 | 1400 | 2000 | - | 4000 | | 6300 | 8000 |
| Impedance per pole | | [mW] | 0.5 | 0.5 | 0.45 | 0.3 | 0.3 | - | - | - | - |
| **Power Dissipation per Pole** | | | | | | | | | | | |
| | AC-1 | [W] | 16 | 25 | 21.6 | 35 | 45.7 | - | - | - | - |
| | AC-3 | [W] | 6.2 | 11.1 | 13.8 | 17.9 | 25.7 | - | - | - | - |
| **Short Time Current Icw** | | | | | | | | | | | |
| 0°≤ 104°F | 1 sec. | [A] | 3165 | 3763 | 4649 | 4427 | - | - | - | - | - |
| | 5 sec. | [A] | 1820 | 2164 | 2673 | 2546 | - | - | - | - | - |
| | 10 sec. | [A] | 1430 | 1700 | 2100 | 2000 | - | - | - | - | - |
| | 30 sec. | [A] | 826 | 980 | 1212 | 1155 | - | - | - | - | - |
| | 1 min. | [A] | 584 | 694 | 857 | 816 | - | - | - | - | - |
| | 3 min. | [A] | 337 | 401 | 495 | 471 | - | - | - | - | - |
| | Recovery time | [min.] | 10 | 10 | 10 | 10 | 10 | - | - | - | - |
| **Short Circuit Coordination** | | | | | | | | | | | |
| **Acc. to IEC** | | | | | | | | | | | |
| Coordination type “1” | gL/gG | [A] | 315 | 355 | 355 | 500 | 630 | 630 | - | 800 | 1000 |
| Coordination type “2” | gL/gG | [A] | 224 | 250 | 250 | 400 | 500 | - | - | - | - |
| Acc. to UL/CSA | J Type | [A] | 250 | 350 | 400 | 500 | 700 | 700 | - | 900 | 1100 |

# Contactors

## CWM Series - IEC Standard Contactors

### General Ratings

| TYPE | | CWM9 | CWM12 | CWM18 | CWM25 | CWM32 | CWM40 | CWM50 | CWM65 | CWM80 | CWM95 | CWM105 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Standards | Units | Devices according to International Standards IEC 60947-1 / 60947-4-1, European Standards EN 60947-1 / 60947-4-1, Underwriters Laboratories - UL 508; CSA C.22.2/14; VDE 0660/102 | | | | | | | | | | |
| **Rated Insulation Voltage Ui** | | | | | | | | | | | | |
| Acc. IEC; VDE 0660 | [V] | 1000 | | | | | | | | | | |
| Acc. UL; CSA | [V] | 600 | | | | | | | | | | |
| Rated Impulse Voltage Uimp | | 6 | | | | | | 8 | | | | |
| Acc. IEC60947-1 | [kV] | | | | | | | | | | | |
| Rated Operating Frequency | [Hz] | 25…400 | | | | | | | | | | |
| Degree of Protection | | IP20 | | | Protection against direct contact Acc. VDE 0160 - Part. 100 | | | | | | | |
| Main terminals | | | | | IP10 | | | | | | | |
| Coil terminals | | | | | | | | | | | | |
| Auxiliary terminals | | | | | | | | | | | | |
| **Ambient Temperature** | | | | | | | | | | | | |
| Storage | | -55 to +80oC (-67 to +176oF) | | | | | | | | | | |
| Operating | | -25 to +55oC (-13 to +131oF) | | | | | | | | | | |
| **Altitude** | | | | | | | | | | | | |
| Up to 1,500m | | Nominal values | | | | | | | | | | |
| | | See graphic on page 194 | | | | | | | | | | |
| Pollution Degree | | 3 | | | | | | | | | | |
| Climatic Withstand | | According to IEC 60680-2 | | | | | | | | | | |
| Mounting | | 35mm rail Acc. DIN EN 50 022 | | | | | | | | | | |
| **Vibration Resistance (5 to 200 Hz)** | | | | | | | | | | | | |
| Contactor open | [g] | 3 | 3 | 3 | 7.5 | 8 | 8 | 4.5 | 4.5 | 4.5 | 5 | 5 |
| Contactor closed at Uc | [g] | 6 | 6 | 6 | 8 | 12 | 12 | 9 | 9 | 9 | 7 | 7 |
| **Mechanical Endurance** | | | | | | | | | | | | |
| AC Coil | Million ops. | 10 | | | | | | | | | | |
| Electrical Endurance AC-3 | Million ops. | 1.8 | 1.6 | 1.2 | 1.2 | 1.2 | 1.2 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 |
| **Shock Resistance (1/2 sin wave = 11ms)** | | | | | | | | | | | | |
| Contactor open | [g] | 8 | 8 | 8 | 8 | 7 | 7 | 6 | 6 | 6 | 6 | 6 |
| Contactor closed at Uc | [g] | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 10 | 10 | 10 | 10 |
| Weight | [kg] | 0.30 | 0.30 | 0.30 | 0.30 | 0.52 | 0.54 | 1.11 | 1.12 | 1.13 | 1.45 | 1.47 |
| AC Coil | [lb] | 0.65 | 0.65 | 0.65 | 0.65 | 1.15 | 1.19 | 2.44 | 2.47 | 2.49 | 3.20 | 3.24 |
| **Terminal Capacity** | | Cross/Slotted Combination | | | | | | Allen Head | | | | |
| Fine - Stranded with sleeve | Top [mm2] | 2x0.5-2.5 | 2x0.5-2.5 | 2x0.5-2.5 | 2x1-2.5 | 0.75-16 | 0.75-16 | 1-35 | 1-35 | 1-35 | 1.5-50 | 1.5-50 |
| | Bottom [mm2] | or 2x2.5-6 | or 2x2.5-6 | or 2x2.5-6 | or 2x2.5-10 | 1.0-16 | 1.0-16 | 2.5-35 | 2.5-35 | 2.5-35 | 4-35 | 4-35 |
| Coarse - Stranded / Solid | Top [mm2] | 2x1-2.5 | 2x1-2.5 | 2x1-2.5 | 2x1-2.5 | 1-16 | 1-16 | 1.5-35 | 1.5-35 | 1.5-35 | 2.5-50 | 2.5-50 |
| | Bottom [mm2] | or 2x2.5-6 | or 2x2.5-6 | or 2x2.5-6 | or 2x2.5-10 | 1.5-16 | 1.5-16 | 6-35 | 6-35 | 6-35 | 6-35 | 6-35 |
| Stranded / Solid (UL / CSA) | Top [AWG] | 2x20-12 | 2x20-12 | 2x20-12 | 2x18-12 | 18-6 | 18-6 | 16-2 | 16-2 | 16-2 | 16-1 | 16-1 |
| | Bottom [AWG] | or 2x12-10 | or 2x12-10 | or 2x12-10 | or 2x12-8 | 16-6 | 16-6 | 14-2 | 14-2 | 14-2 | 10-2 | 10-2 |
| Drive Size | | Screwdriver - Philips #2 | | | | | | 5/32" (4mm.) | | | | |
| Tightening Torque | lb-in (Nm) | 8.9...15 (1...1.7) | 8.9...15 (1...1.7) | 8.9...15 (1...1.7) | 14.2...26.6 (1.6...3) | 22.1...35..4 (2.5...4) | 22.1...35..4 (2.5...4) | 35.4...53.1 (4...6) | 35.4...53.1 (4...6) | 35.4...53.1 (4...6) | 44.3...57.5 (5...6.5) | 44.3...57.5 (5...6.5) |



Data is subject to change without notice.

## General Ratings

| TYPE | | CWM112 | CWM150 | CWM180 | CWM250 | CWM300 | CWM400 | CWM630 | CWM800 |
|---|---|---|---|---|---|---|---|---|---|
| Standards<br>Units | | Devices according to International Standards IEC 60947-1 / 60947-4-1, European Standards EN 60947-1 / 60947-4-1, Underwriters Laboratories - UL 508; CSA C.22.2/14; VDE 0660/102 | | | | | | | |
| **Rated Insulation Voltage Ui** | | | | | | | | | |
| Acc. IEC; VDE 0660 | [V] | 1000 | | | | | | | |
| Acc. UL; CSA | [V] | 600 | | | | | | | |
| **Rated Impulse Voltage Uimp** | | | | | | | | | |
| Acc. IEC60947-1 | [kV] | 8 | | | | | | | |
| Rated Operating Frequency | [Hz] | 25…400 | | | | | | | |
| Degree of protection | | Protection against direct contact acc. VDE 0160 - Part. 100 | | | | | | | |
| Main terminals | | IP00 | | | | | | | |
| Coil terminals | | IP20 | | | | | | | |
| Auxiliary terminals | | IP20 | | | | | | | |
| **Ambient Temperature** | | | | | | | | | |
| Storage | | -55 to +80ºC (-67 to +176ºF) | | | | | | | |
| Operating | | -25 to +55ºC (-13 to +131ºF) | | | | | | | |
| **Altitude** | | | | | | | | | |
| Up to 1,500m | | Nominal values | | | | | | | |
| Other altitudes | | See graphic on page 194 | | | | | up to 2000m | | |
| Pollution Degree | | 3 | | | | | | | |
| Climatic withstand | | According to IEC 68-2 | | | | | | | |
| Mounting | | Screw to panel | | | | | | | |
| **Vibration Resistance (5 to 200 Hz)** | | | | | | | | | |
| Contactor open | [g] | 4 | | | | | | | |
| Contactor closed at Uc | [g] | 4 | | | | | | | |
| **Mechanical Endurance** | | | | | | | | | |
| AC Coil | Million ops. | 10 | | | | | 5 | | |
| Electrical Endurance AC-3 | Million ops. | 1.1 | 1.1 | 1.0 | 1.0 | 1.0 | 0.5 | | |
| **Shock Resistance (1/2 sin wave = 11ms)** | | | | | | | | | |
| Contactor open | [g] | 3 | | | | | | | |
| Contactor closed at Uc | [g] | 3 | | | | | | | |
| **Weight** | | | | | | | | | |
| AC/DC Coil | [kg] | 2.54 | 2.54 | 4.04 | 6.14 | 6.14 | 9.2 | 22.4 | 22.4 |
| | [lb] | 5.60 | 5.60 | 8.91 | 13.54 | 13.54 | 20 | 49 | 49 |
| **Terminal Capacity** | | | | | | | | | |
| Fine - Stranded with sleeve | [mm2] | 2 x (25-70) | | 2 x (50-120) | 2 x (50-150) | | 1 x 150 | 1 x 240 | 1 x 240 |
| AWG wires with end sleeve | | 1 x 300 or 2 x 107 | | | 1 x 500 or 2 x 300 | | Nº2 30×5 | Nº2 50×5 | Nº2 60×5 |
| Busbars | [mm] | 2 x (15 x 3) | | 2 x (20 x 3) | 2 x (30 x 5) | | - | - | - |
| Tightening Torque | lb-in (Nm) | 47.8-53.1(5.4-6) | | 123.9-141.6 (14-16) | 203.6-230.1 (23-26) | | 203.6 (23) | 504.5 (57) | 504.5 (57) |

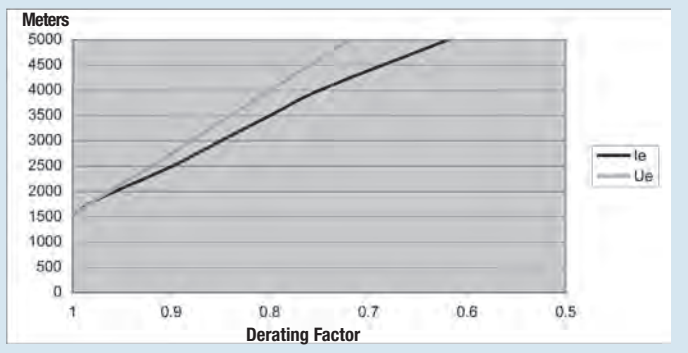
# Contactors

## CWM Series - IEC Standard Contactors

### Auxiliary contact block ratings

| TYPE | | | BCXMF BCXML BCXMRL BLIM.02 |
|---|---|---|---|
| **Rated Insulation Voltage Ui** | | | |
| Acc. IEC; VDE 0660 | | [V] | 1000 |
| Acc. UL; CSA | | [V] | 600 |
| **Rated Operating Voltage Ue** | | | |
| Acc. IEC; VDE 0660 | | [V] | 690 |
| Acc. UL; CSA | | [V] | 600 |
| Rated Thermal Current Ith <=55ºC | | [A] | 10 |
| **Rated Operating Current Ie** | | | |
| Acc. IEC 60947-5-1 / AC-15 | 110-127V | [A] | 6 |
| | 220-240V | [A] | 6 |
| | 380-400V | [A] | 4 |
| | 415-450V | [A] | 3.5 |
| | 500V | [A] | 2.5 |
| | 660-690V | [A] | 1.5 |
| Acc. UL; CSA | | | A600 |
| **Rated Operating Current Ie** | | | |
| Acc. IEC 60947-5-1 / DC-13 | 24V | [A] | 4 |
| | 48V | [A] | 2 |
| | 110V | [A] | 0.7 |
| | 220V | [A] | 0.3 |
| | 440V | [A] | 0.15 |
| Acc. UL; CSA | | | Q600 |
| **Making Capacity Im** | | | |
| AC-15 / AC-11 | Ue <= 400V 50/60Hz | [A] | 90 |
| DC-13 / DC-11 | Ue <= 220Vdc | [A] | 90 |
| **Breaking Capacity Ic** | | | |
| AC-15 / AC-11 | Ue <= 400V 50/60Hz | [A] | 60 |
| DC-13 / DC-11 | Ue <= 220Vdc | [A] | 0.95 |
| **Short Circuit Protection with Fuses** | | | |
| Acc. IEC 60947-5-1 - gL/gG | | [A] | 10 |
| Minimum Switching Capacity | | [V/mA] | 17/5 |
| Electrical Endurance | | Million ops. | 1 |
| Mechanical Endurance | | Million ops. | 10 |
| Guaranteed Non-Overlap Time | | [ms] | 1.5 |
| Insulation Resistance | | [MOhm] | >10 |

## Graphic Altitude




NOTE:
Altitude compensation in CWM Series contactors, considers a factor according to which the rated power must be reduced.

The derating of the permissible operating power for installation altitudes above 1,500 m (5,000 ft) is calculated according to:

Total derating = $\text{Derating}_{\text{current}}$ x $\text{Derating}_{\text{voltage}}$

Example: Altitude: 3,000 m (10,000 ft):

Derating current K1 = 0.85
Derating voltage K2 = 0.88

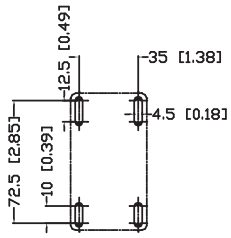
Total derating = 0.85 x 0.88 = 0.75 x HP

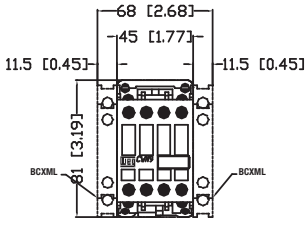


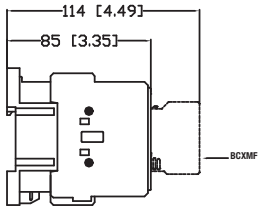
Data is subject to change without notice.

# Mechanical Drawings mm (in)

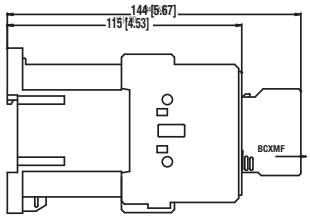
## CWM9, CWM9N, CWM12, CWM18, and CWM18N



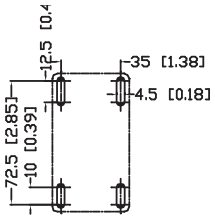



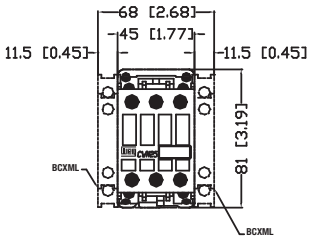

Vac Contactors

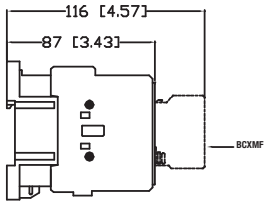



Vdc Contactors

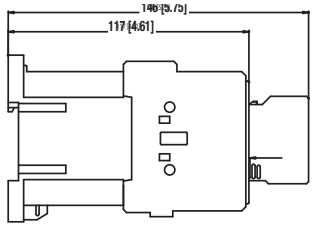
## CWM25



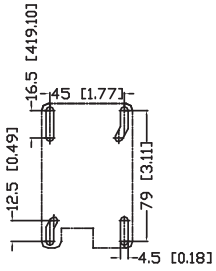



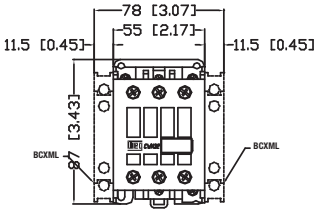

Vac Contactors

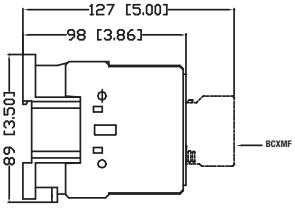



Vdc Contactors

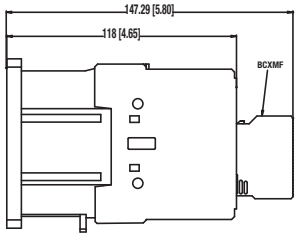
## CWM32, CWM32N and CWM40




Vac Contactors

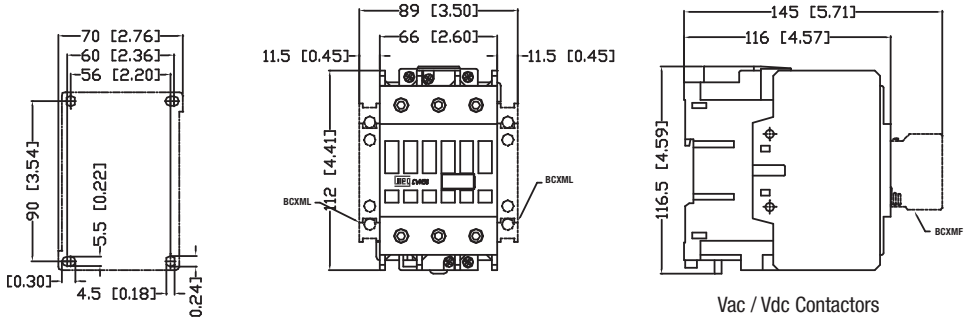



Vdc Contactors

CWM-N Series - NEMA Rated Standard Contactor

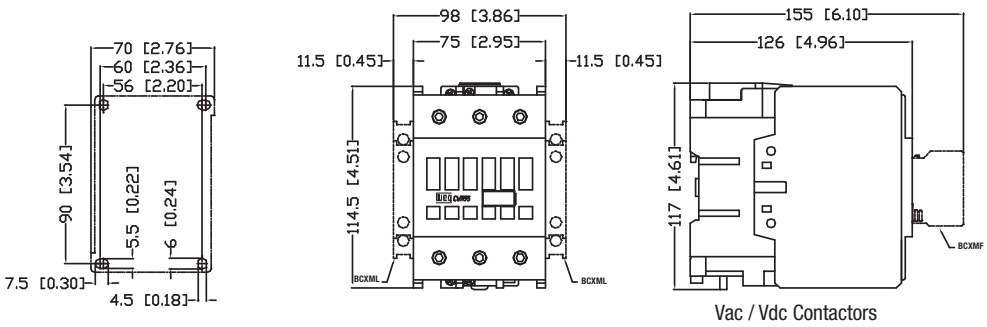
## Mechanical Drawings mm (in)

### CWM50, CWM50N, CWM65 and CWM80




Vac / Vdc Contactors

### CWM95, CWM95N, and CWM105




Vac / Vdc Contactors

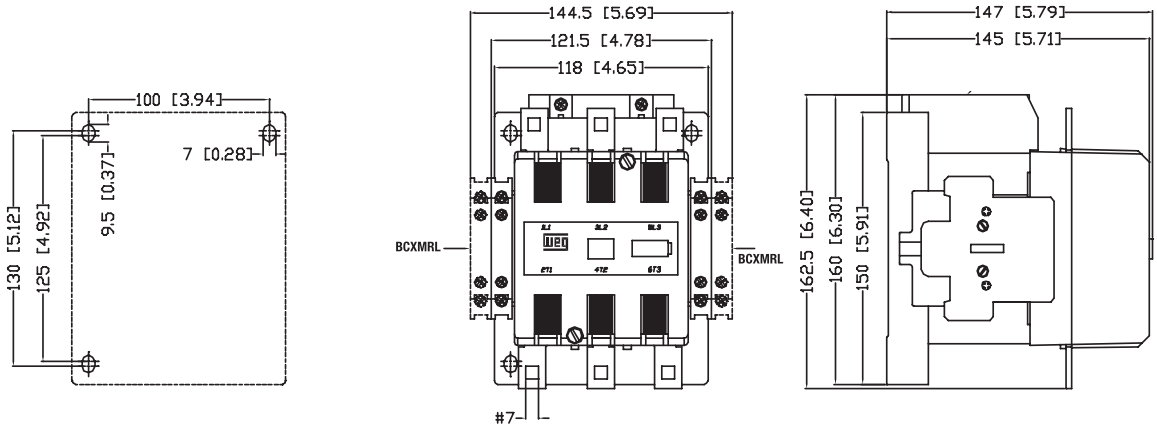




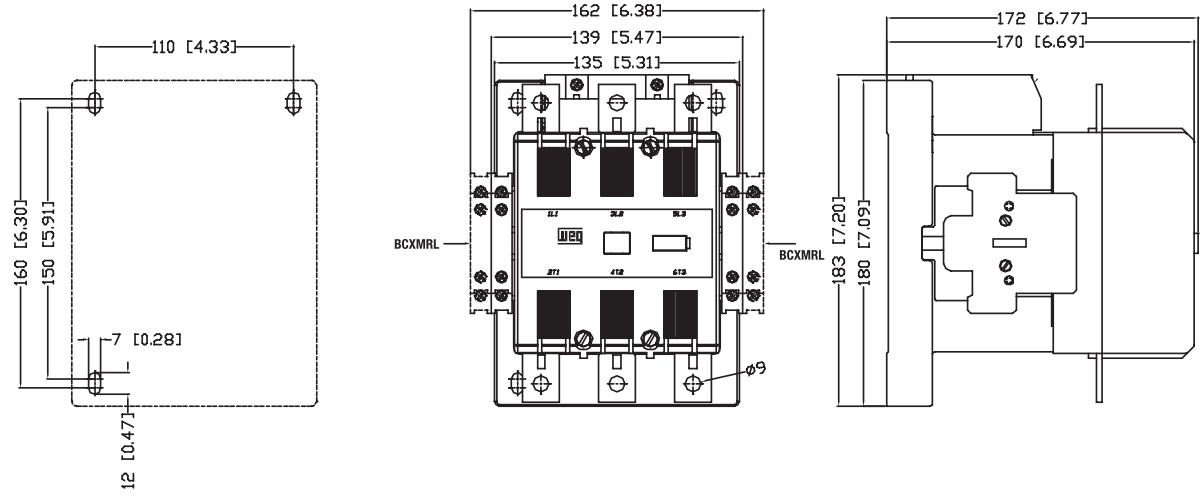
Data is subject to change without notice.

## Mechanical Drawings mm (in)

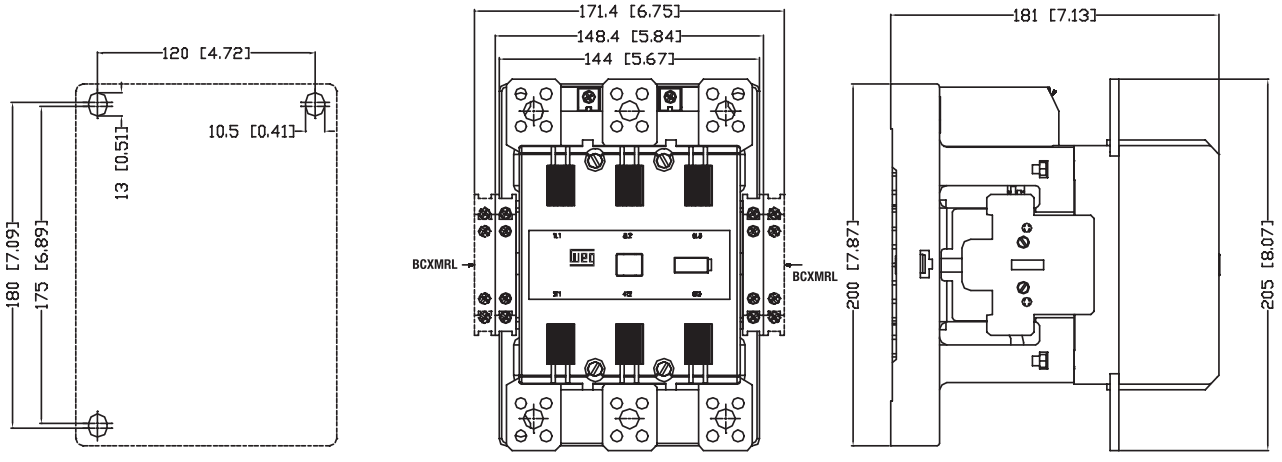
### CWM112. CWM150 and CWM150N




### CWM180



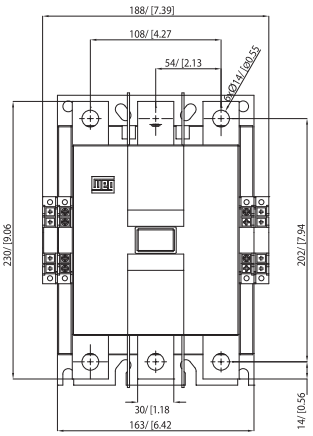

### CWM250, CWM300 and CWM300N

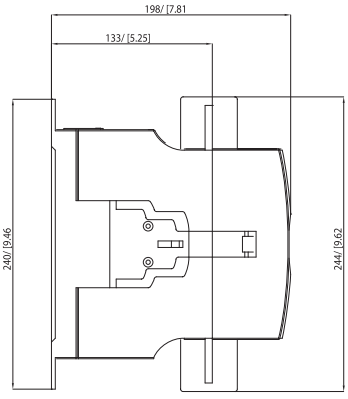


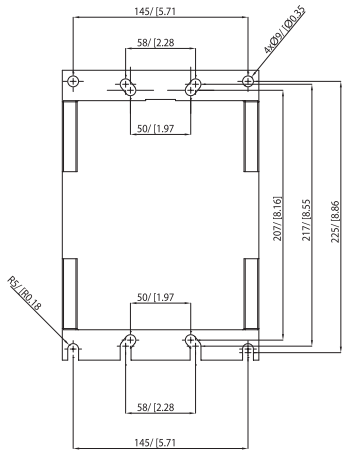
CWM Series - IEC Standard Contactors

## Mechanical Drawings mm (in)

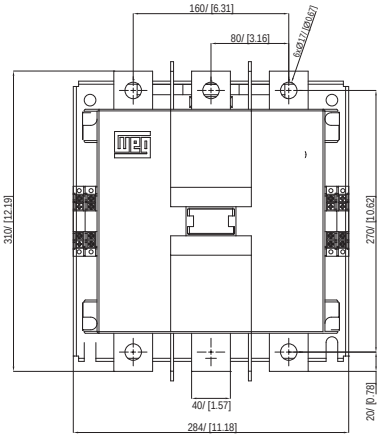
### CWM400

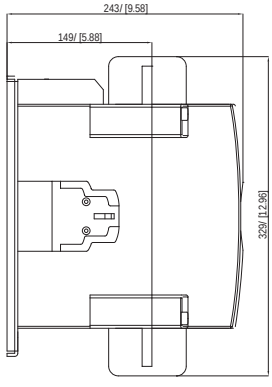


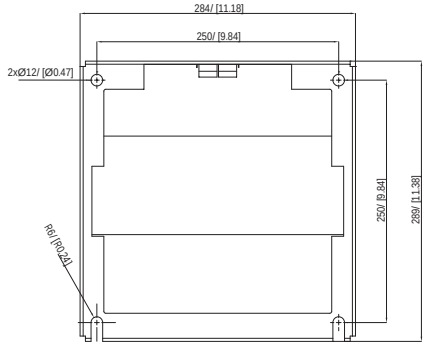




### CWM630 and CWM800



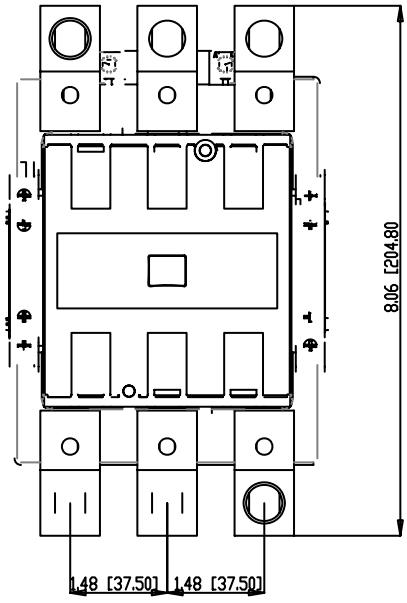



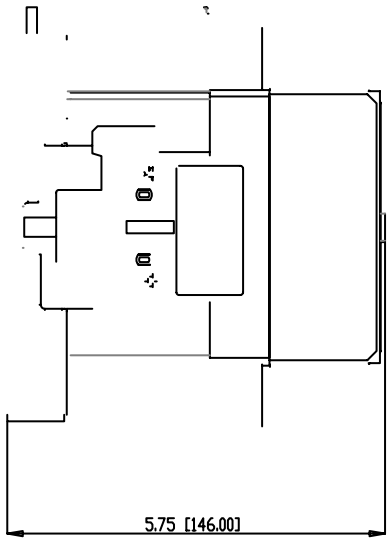


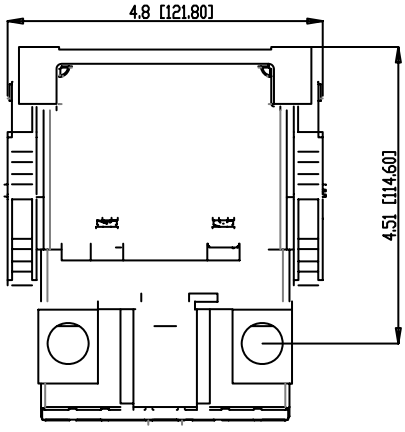

Data is subject to change without notice.

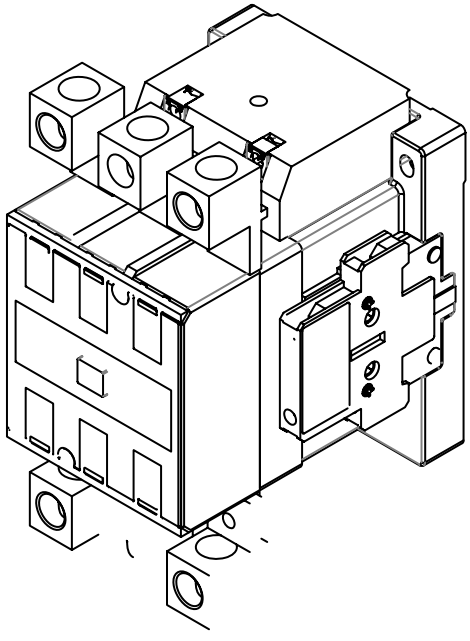
## Mechanical Drawings mm (in)

### CWM112 - CWM150 + LW1-S300 (contactor with lugs)



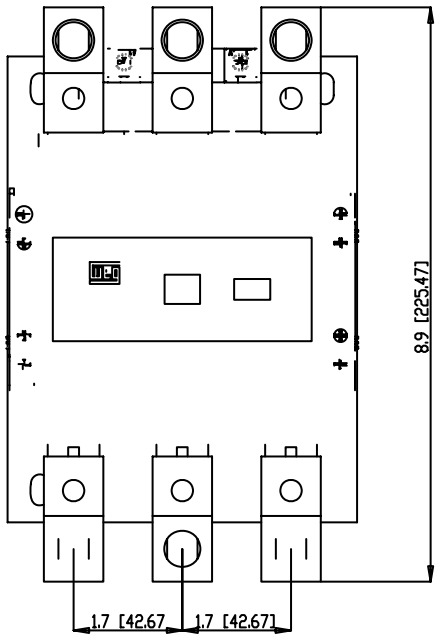



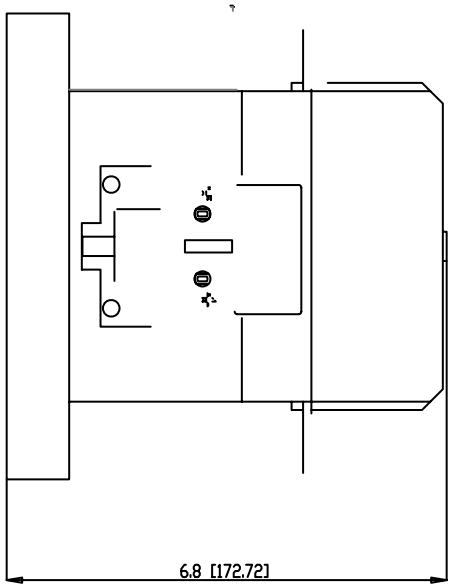



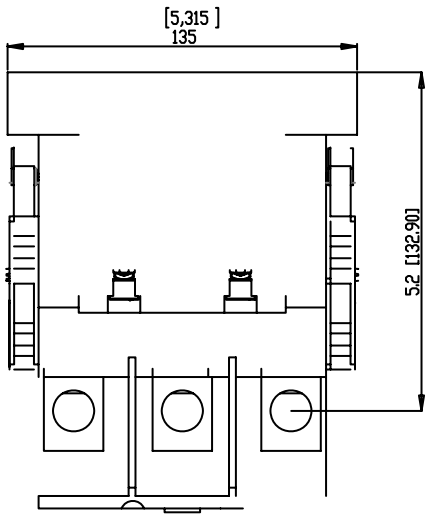
CWM Series - IEC Standard Contactors

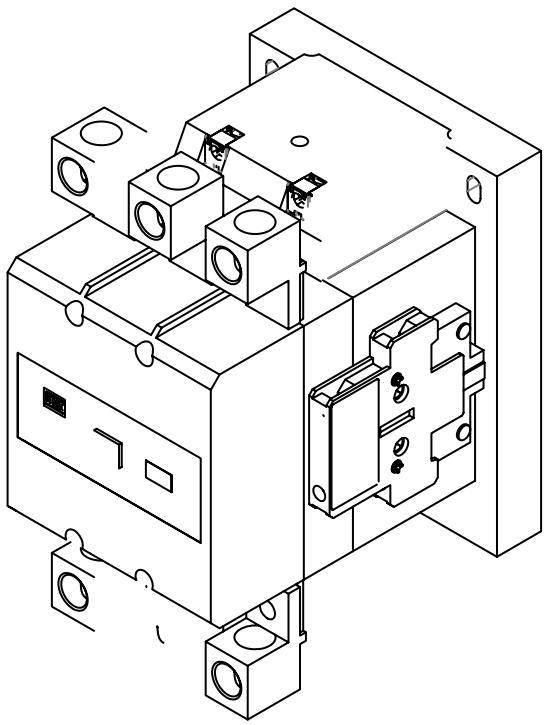
## Mechanical Drawings mm (in)

### CWM180 + LW2-S300 (contactor with lugs)



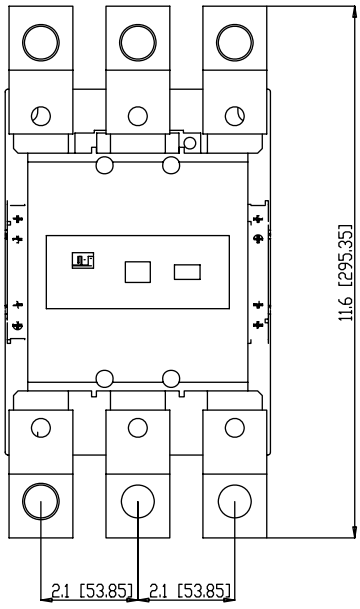


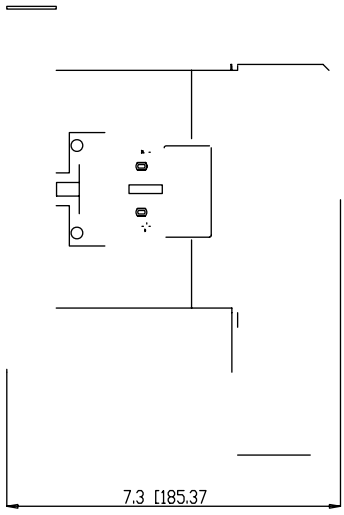


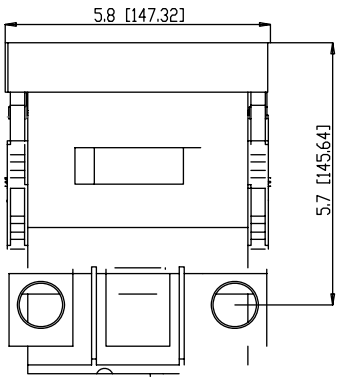
Data is subject to change without notice.

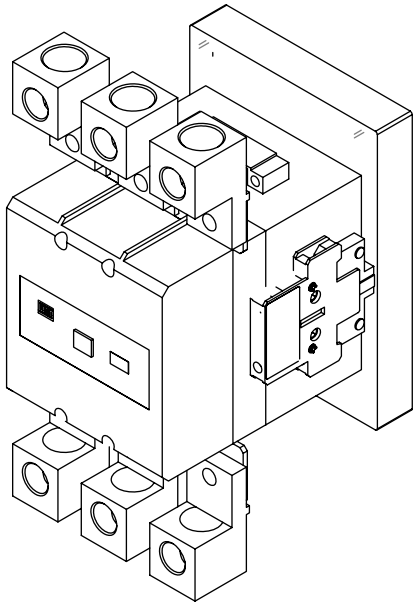
## Mechanical Drawings mm (in)

### CWM250 + LW1-S600 (contactor with lugs)



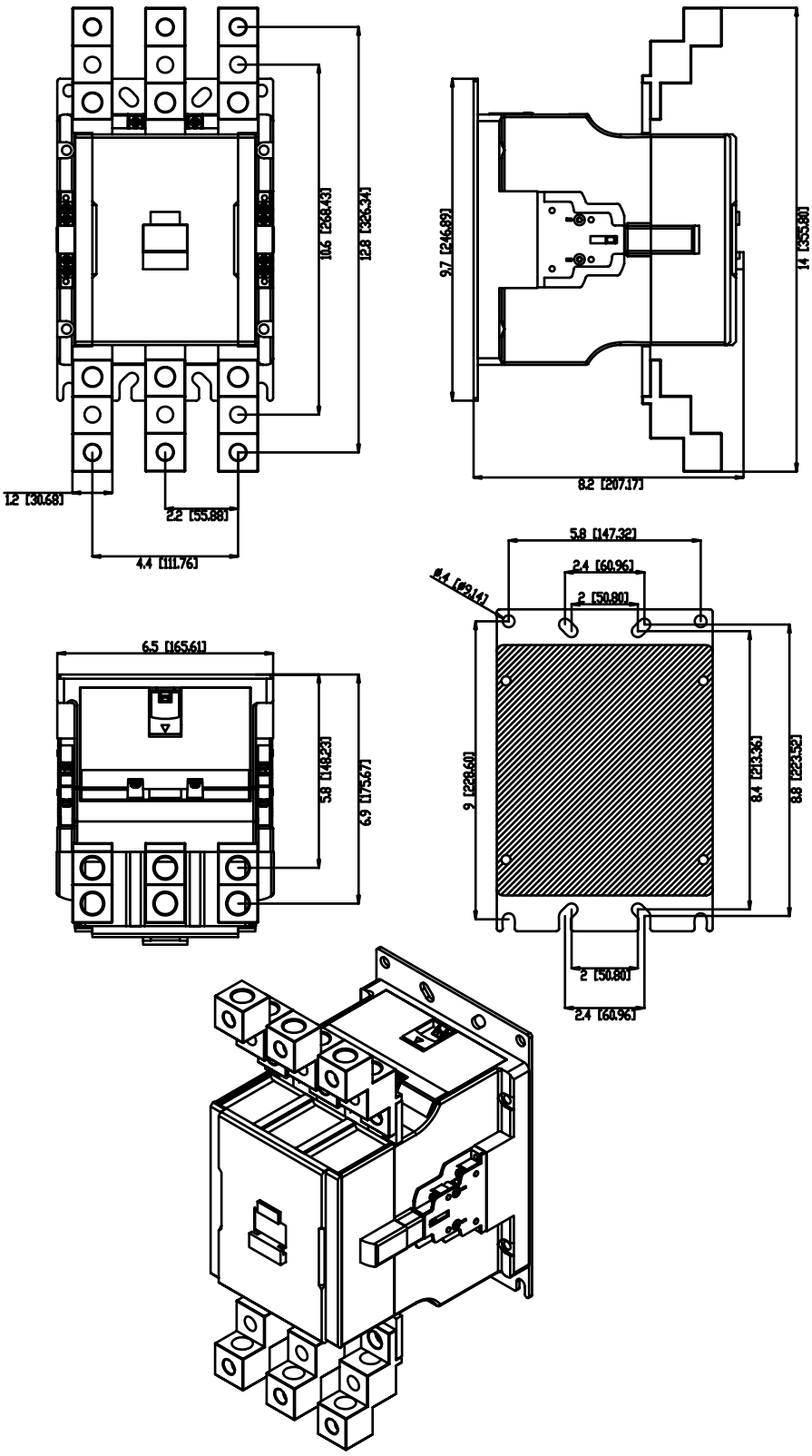



## Mechanical Drawings mm (in)

### CWM400 + BMJ (contactor with lugs)

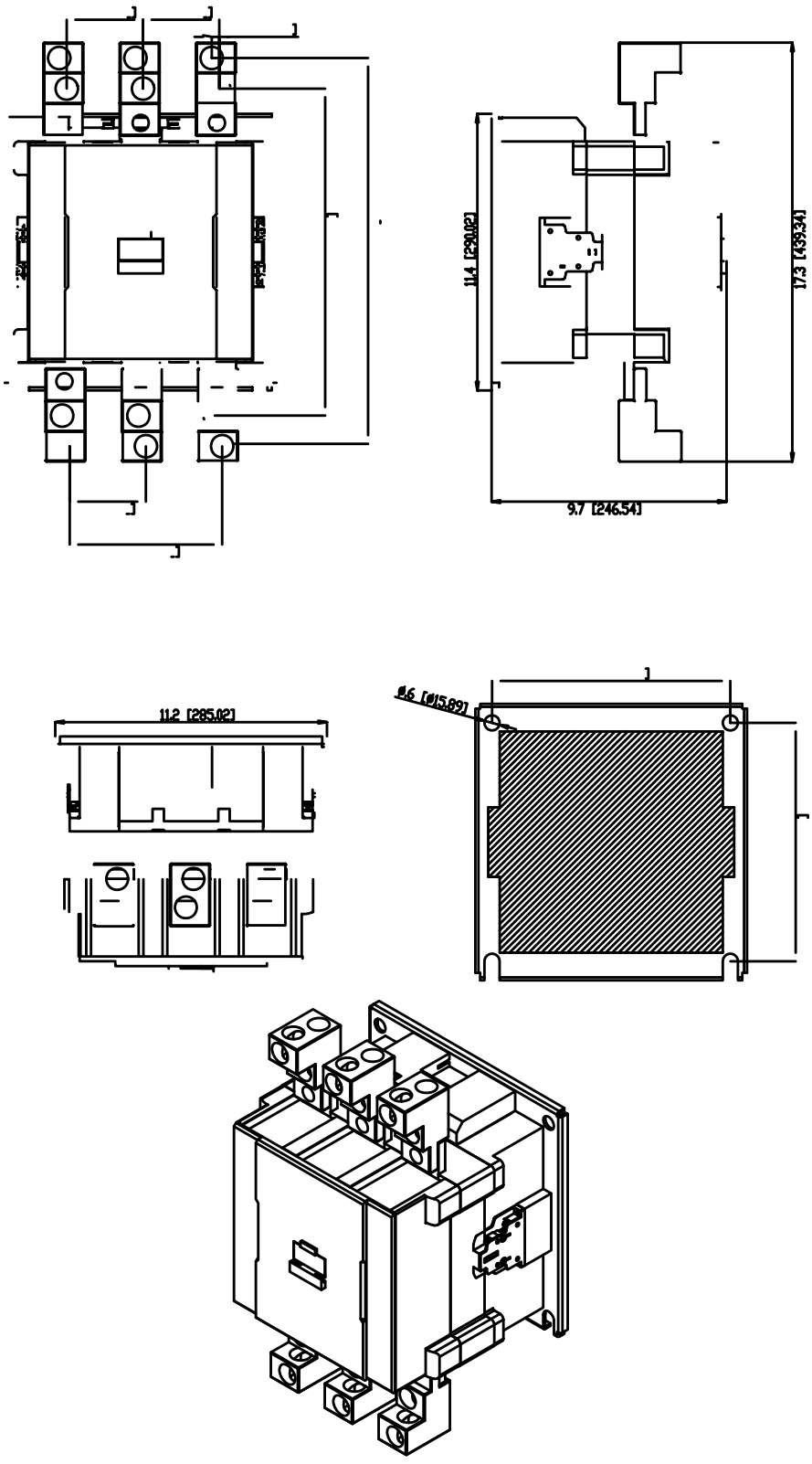





Data is subject to change without notice.

## Mechanical Drawings mm (in)

### CWM630-CWM800 + BMJ (contactor with lugs)

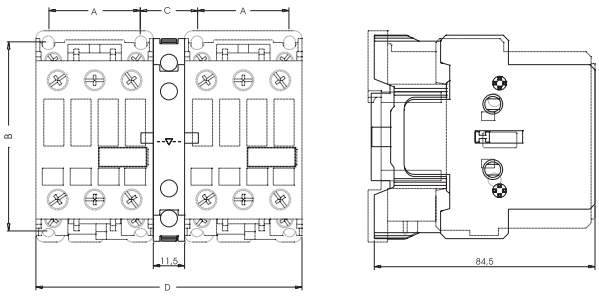


# Contactors

## CWM Series - IEC Standard Contactors

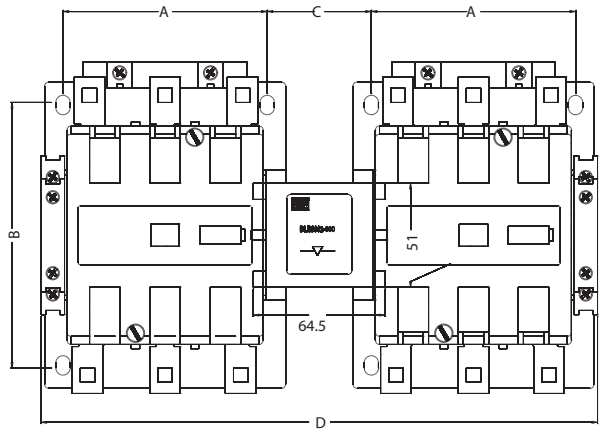
### Reversing Contactors mm (in)

#### BLIM9-105



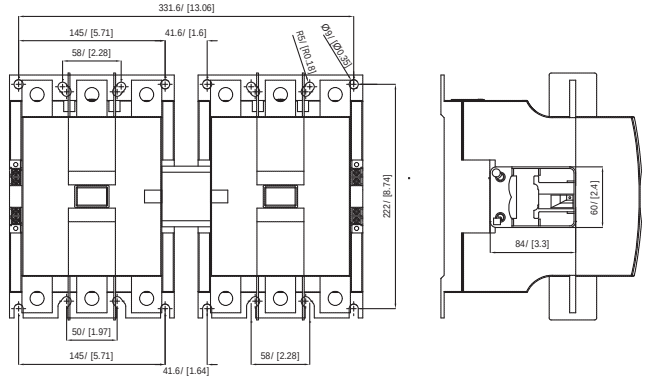

| Models | A | B | C | D |
|---|---|---|---|---|
| CWM9…25 | 35 (1,4) | 72,5 (2,9) | 22 (0,9) | 102 (4) |
| CWM32…40 | 45 (1,8) | 79 (3,1) | 22 (0,9) | 122 (4,8) |
| CWM50…80 | 57 (2,2) | 90 (3,5) | 21 (0,8) | 144 (5,7) |
| CWM95…105 | 57 (2,2) | 90 (3,5) | 29,8 (1,2) | 153 (6) |

#### BLIM112-300

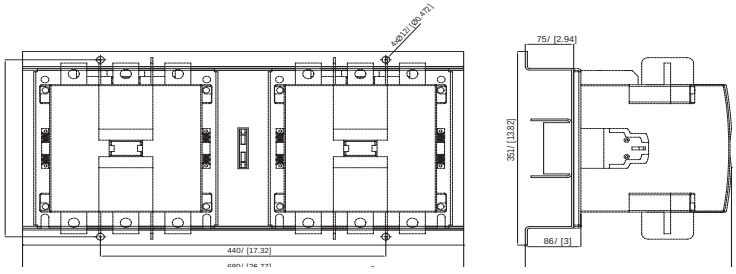



| Models | A | B | C | D |
|---|---|---|---|---|
| CWM112…150 | 100 (3,9) | 130 (5,1) | 51 (2) | 272,5 (10,7) |
| CWM180 | 110 (4,3) | 160 (6,3) | 58,5 (2,3) | 303,5 (11,9) |
| CWM250…300 | 120 (4,7) | 180 (7,1) | 57 (2,2) | 325,4 (12,8) |

#### BLIM CWM400




#### BLIM CWM800

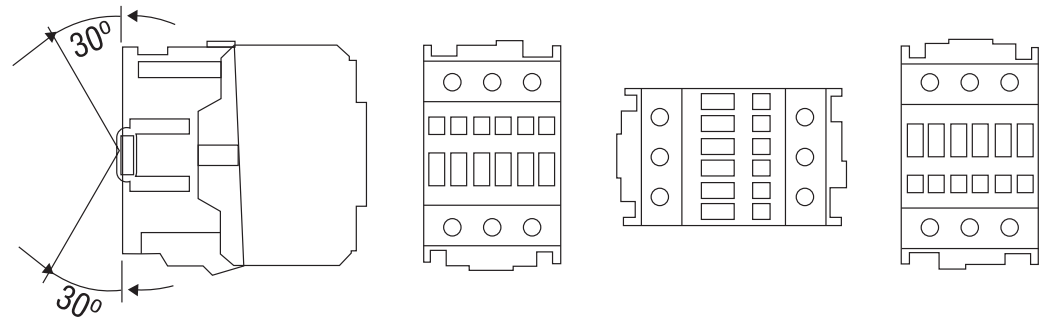




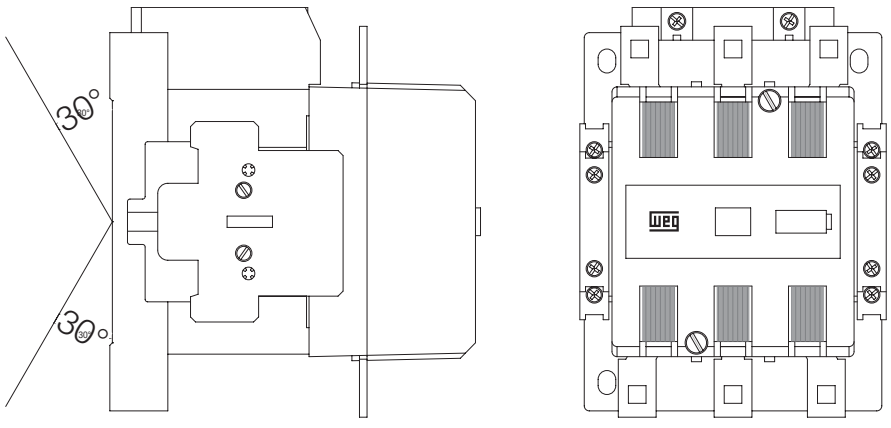

Data is subject to change without notice.

## Mounting position[1]

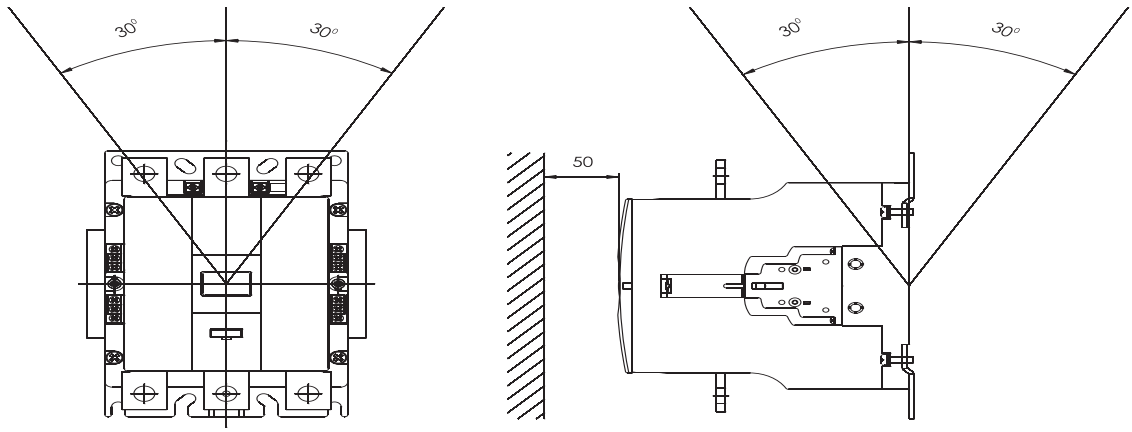
### CWM9...105




### CWM112...300




### CWM400...800




*Note: 1) Consult WEG if application requires a different mounting position*

RW Series - Bi-Metallic

# Thermal Overload Relays



An extended operational service life is one of the main features you can find in RW overload relays. WEG's RW Thermal Overload Relays are designed for use with, and as perfect complement to, WEG contactors. Effectively, RW overload relays can be mounted directly under WEG contactors, assuring electrical and mechanical operation as an open across-the-line starter. Accessories are also available for separate mounting.

UL File No. E189202

## Standard Features:

- 2 and 3 pole versions available
- Direct mounting to WEG contactors with no accessory. (Accessories also available for separate mounting)
- Phase loss & current unbalance sensitivity protection
- Class 10 Trip characteristics
- Selectable RESET button (auto or manual)
- Isolated 1NO & 1NC auxiliary contacts

## RW Series Catalog Number Sequence

| RW | 27-1D | 3 | - | U004 |
|---|---|---|---|---|

**Overload Relay Series**
RW: Thermal Overload Relay

**Power Pole**
3: 3NO Power Poles
2: 2NO Power Poles

**Frame, Size and Terminal Type**
17-1D: to use with CWC07…016
17-2D: to use with CWC025
27-1D: to use with CWM9…25
27-2D: to use with CWB9...38
27-2D: to use with CWB9...38
67-1D: to use with CWM32…40
117-1D: to use with CWM95…105
117-2D: to use with CWM112…150
317-1D: to use with CWM112…300
407-1D: to use with CWM400…800

**Overload Setting Current**

| | |
|---|---|
| RW17 | RW117 |
| D004: 0,28…0,40A | U080: 63…80A |
| U032: 11…32A | U112: 90…112A |
| RW27 | RW317 |
| DOO4: 0,28…0,40A | U150: 100…150A |
| U032: 11…32A | U420: 275…420A |
| RW67 | RW407 |
| U040: 25…40A | U600: 400…600A |
| U080: 63…80A | U840: 560…840A |

*For more details refer to selection table*

*Chart intended for reference only and not to create part numbers.*





Data is subject to change without notice.

### Multifunction Reset / Test Button

The thermal overload relay has a multifunction ***RESET / TEST*** button that can be set in four different positions:
***A*** - Automatic ***RESET*** only;
***AUTO*** - Automatic ***RESET / TEST***;
***HAND*** - Manual ***RESET / TEST***;
***H*** - Manual ***RESET*** only.
In ***HAND*** and **AUTO** positions, when ***RESET*** button is pressed, both NO (97-98) and NC (95-96) contacts change states.




### Operation description:

In H (manual RESET only) or A (automatic RESET only) position, the test function is blocked. However in the positions HAND (manual RESET / TEST) or AUTO (automatic RESET / TEST) it is possible to simulate the test and the trip functions by pressing the RESET button.
When set in the H or HAND position the RESET button must be pressed manually to reset the overload relay after a tripping event. On the other hand, when set in A or AUTO position, the overload relay will reset automatically after a tripping event.
The H, HAND, AUTO and A function setting is carried out by rotating without pressing the red button and placing it on the desired position of the RESET button.
When changing from HAND to AUTO, the RESET button must be slightly pressed while the red button is rotated.

| Functions | H | HAND | AUTO | A |
|---|---|---|---|---|
| Relay reset | Manual1) | Manual1) | Automatic | Automatic |
| Auxiliary contact trip test 95-96 (NC) | Function is disabled | Test is allowed | Test is allowed | Function is disabled |
| Auxiliary contact trip test 97-98 (NO) | Function is disabled | Test is allowed | Test is allowed | Function is disabled |

*Note: 1) A recovery time of a few minutes is necessary before resetting the thermal overload relay.*

### Recovery Time

The RW thermal overload relays have thermal memory.
After tripping due to an overload, the relay requires a certain period of time for the bimetal strips to cool down. This period of time is so-called recovery time. The relay can only be reset once it has cooled down. The recovery time depends on the characteristic tripping curves and the level of the tripping current. After tripping due to overload, the recovery time allows the load to cool down.

### Operation in the Output Side of Frequency Inverters

The RW27-2D thermal overload relays are designed for operation on 50/60 Hz up to 400 Hz and the tripping values are related to the heating by currents within this frequency range. Depending on the design of the frequency inverter, the switching frequency can reach several kHz and generate harmonic currents at the output that result in additional temperature rise in the bimetal strips. In such applications, the temperature rise not only depends on the rms value of the current, but on the induction effects of the higher frequency currents in the metal parts of the device (skin effect caused by eddy currents).
Due to these effects, the current settings on the overload relay should be higher than the motor rated current.

### Dial FLA Setting

The trip-current is set via an infinitely adjustable dial designed with the motor‘s full load current (FLA) in mind.

### Temperature Compensation

Because RW overload relays include a forth bimetallic strip in addition to the three that are directly heated by the motor current, ambient temperature variations in the range of -4°F to +140°F are no obstacle for accurate protection of your motors even in the toughest conditions.

### Phase Failure Sensitivity

WEG overload relays include phase failure sensitivity protection as a standard. This feature ensures fast tripping in case of phase loss, protecting your motor and avoiding expensive repairs/corrective maintenance.

# Overloads

RW Series - Bi-Metallic

## For use with CWC and CWM Contactors

## Three-pole Thermal Overload Relay Class 10

- Adjustable tripping current
- Phase-loss sensitivity
- Tripping class 10
- Auxiliary contacts 1NO + 1NC
- Temperature compensation from -40F to +140F
- Hand/Auto/Reset button

| Matching Contactor | Setting Range [A] | | Max. Fuse [A] | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|---|
| | Min. | Max. | | | | |
| CWC07…CWC016<br>CWCA0<br>(Mini-contactor) | 0.28 | 0.40 | 15 | RW17-1D3-D004 | $46 | |
| | 0.40 | 0.63 | 15 | RW17-1D3-C063 | $46 | |
| | 0.56 | 0.80 | 15 | RW17-1D3-D008 | $46 | |
| | 0.80 | 1.20 | 15 | RW17-1D3-D012 | $46 | |
| | 1.20 | 1.80 | 15 | RW17-1D3-D018 | $46 | |
| | 1.80 | 2.80 | 15 | RW17-1D3-D028 | $46 | |
| | 2.80 | 4.00 | 15 | RW17-1D3-U004 | $46 | |
| | 4.00 | 6.30 | 25 | RW17-1D3-D063 | $46 | |
| | 5.60 | 8.00 | 30 | RW17-1D3-U008 | $46 | |
| | 7.00 | 10.0 | 40 | RW17-1D3-U010 | $46 | |
| | 8.00 | 12.5 | 50 | RW17-1D3-D125 | $46 | |
| | 10.0 | 15.0 | 60 | RW17-1D3-U015 | $46 | |
| | 11.0 | 17.0 | 60 | RW17-1D3-U017 | $46 | |
| CWC025 (Mini-contactor) | 15.0 | 23.0 | 90 | RW17-2D3-U023 | $46 | |
| | 22.0 | 32.0 | 100 | RW17-2D3-U032 | $46 | |
| CWM9...CWM40<br>CWM9N...CWM32N | 0.28 | 0.40 | 15 | RW27-1D3-D004 | $50 | Z2 |
| | 0.40 | 0.63 | 15 | RW27-1D3-C063 | $50 | |
| | 0.56 | 0.80 | 15 | RW27-1D3-D008 | $50 | |
| | 0.80 | 1.20 | 15 | RW27-1D3-D012 | $50 | |
| | 1.20 | 1.80 | 15 | RW27-1D3-D018 | $50 | |
| | 1.80 | 2.80 | 15 | RW27-1D3-D028 | $50 | |
| | 2.80 | 4.00 | 15 | RW27-1D3-U004 | $50 | |
| | 4.00 | 6.30 | 25 | RW27-1D3-D063 | $50 | |
| | 5.60 | 8.00 | 30 | RW27-1D3-U008 | $50 | |
| | 7.00 | 10.0 | 40 | RW27-1D3-U010 | $50 | |
| | 8.00 | 12.5 | 50 | RW27-1D3-D125 | $50 | |
| | 10.0 | 15.0 | 60 | RW27-1D3-U015 | $50 | |
| | 11.0 | 17.0 | 60 | RW27-1D3-U017 | $50 | |
| | 15.0 | 23.0 | 90 | RW27-1D3-U023 | $50 | |
| | 22.0 | 32.0 | 90 | RW27-1D3-U032 | $50 | |
| CWM32...CWM40<br>CWM32N | 25.0 | 40.0 | 90 | RW67-1D3-U040 | $87 | |
| | 32.0 | 50.0 | 125 | RW67-1D3-U050 | $94 | |
| CWM50...CWM80<br>CWM50N | 25.0 | 40.0 | 90 | RW67-2D3-U040 | $95 | |
| | 32.0 | 50.0 | 125 | RW67-2D3-U050 | $95 | |
| | 40.0 | 57.0 | 150 | RW67-2D3-U057 | $95 | |
| | 50.0 | 63.0 | 150 | RW67-2D3-U063 | $95 | |
| | 57.0 | 70.0 | 175 | RW67-2D3-U070 | $112 | |
| | 63.0 | 80.0 | 175 | RW67-2D3-U080 | $112 | |
| CWM95...CWM105<br>CWM95N | 63.0 | 80.0 | 200 | RW117-1D3-U080 | $150 | |
| | 75.0 | 97.0 | 225 | RW117-1D3-U097 | $192 | |
| | 90.0 | 112 | 250 | RW117-1D3-U112 | $192 | |
| CWM112...CWM150<br>CWM150N | 75.0 | 97 | 225 | RW117-2D3-U097 | $232 | |
| | 90.0 | 112 | 250 | RW117-2D3-U112 | $232 | |
| CWM112…CWM300<br>CWM300N | 100 | 150 | 300 | RW317-1D3-U150 | $285 | |
| | 140 | 215 | 350 | RW317-1D3-U215 | $285 | |
| | 200 | 310 | 500 | RW317-1D3-U310 | $320 | |
| CWM400...CWM800 | 275 | 420 | 700 | RW317-1D3-U420 | $320 | |
| | 400 | 600 | 1000 | RW407-1D3-U600 | $690 | |
| | 560 | 840 | 1250 | RW407-1D3-U840 | $690 | |

*Note: RW117-2D, RW317-1D and RW407-1D are for separate mounting -*
*Connector links for contactors CWM112...CWM300 are available as an accessory on page 212.*



Data is subject to change without notice.

## For use with CWB Contactors

## Three-pole Thermal Overload Relay Class 10

- Adjustable Trip Current
- Phase Loss Sensitivity
- Trip Class 10
- Built-In Auxiliary Contacts: 1NO + 1NC
- Ambient Temperature Compensation: -4°F to +140°F
- Multi-Function Button: Hand/Auto/Reset

| Matching Contactor | Setting Range [A] | | Max. Fuse [A] | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|---|
| | Min. | Max. | | | | |
| CWB9 - CWB38 | 0.28 | 0.40 | 15 | RW27-2D3-D004 | $50 | Z2 |
| | 0.40 | 0.63 | 15 | RW27-2D3-C063 | $50 | |
| | 0.56 | 0.80 | 15 | RW27-2D3-D008 | $50 | |
| | 0.80 | 1.20 | 15 | RW27-2D3-D012 | $50 | |
| | 1.20 | 1.80 | 15 | RW27-2D3-D018 | $50 | |
| | 1.80 | 2.80 | 15 | RW27-2D3-D028 | $50 | |
| | 2.80 | 4.00 | 15 | RW27-2D3-U004 | $50 | |
| | 4.00 | 6.30 | 25 | RW27-2D3-D063 | $50 | |
| | 5.60 | 8.00 | 30 | RW27-2D3-U008 | $50 | |
| | 7.00 | 10.0 | 40 | RW27-2D3-U010 | $50 | |
| | 8.00 | 12.5 | 50 | RW27-2D3-D125 | $50 | |
| | 10.0 | 15.0 | 60 | RW27-2D3-U015 | $50 | |
| | 11.0 | 17.0 | 60 | RW27-2D3-U017 | $50 | |
| | 15.0 | 23.0 | 90 | RW27-2D3-U023 | $50 | |
| | 22.0 | 32.0 | 90 | RW27-2D3-U032 | $50 | |
| | 32.0 | 40.0 | 90 | RW27-2D3-U040 | $60 | |
| CWB40-CWB80 | 25.0 | 40.0 | 90 | RW67-5D3-U040 | $95 | Z2 |
| | 32.0 | 50.0 | 125 | RW67-5D3-U050 | $95 | |
| | 40.0 | 57.0 | 150 | RW67-5D3-U057 | $95 | |
| | 50.0 | 63.0 | 150 | RW67-5D3-U063 | $95 | |
| | 57.0 | 70.0 | 175 | RW67-5D3-U070 | $112 | |
| | 63.0 | 80.0 | 200 | RW67-5D3-U080 | $112 | |

# Overloads

RW Series - Bi-Metallic

## For use with CWC and CWM Contactors

## Two-pole Thermal Overload Relays Class 10 (used for single phase applications)

- Adjustable tripping current
- Phase-loss sensitivity
- Tripping class 10
- Auxiliary contacts 1NO + 1NC
- Temperature compensation from -40°F to +140°F
- Hand/Auto/Reset button

| Matching Contactor | Setting Range [A] | | Max. Fuse [A] | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|---|
| | Min. | Max. | | | | |
| CWM9...CWM40 | 0.28 | 0.40 | 15 | RW27-1D2-D004 | $40 | Z2 |
| | 0.40 | 0.63 | 15 | RW27-1D2-C063 | $40 | |
| | 0.56 | 0.80 | 15 | RW27-1D2-D008 | $40 | |
| | 0.80 | 1.20 | 15 | RW27-1D2-D012 | $40 | |
| | 1.20 | 1.80 | 15 | RW27-1D2-D018 | $40 | |
| | 1.80 | 2.80 | 15 | RW27-1D2-D028 | $40 | |
| | 2.80 | 4.00 | 15 | RW27-1D2-U004 | $40 | |
| | 4.00 | 6.30 | 25 | RW27-1D2-D063 | $40 | |
| | 5.60 | 8.00 | 30 | RW27-1D2-U008 | $50 | |
| | 7.00 | 10.0 | 40 | RW27-1D2-U010 | $50 | |
| | 8.00 | 12.5 | 50 | RW27-1D2-D125 | $50 | |
| | 10.0 | 15.0 | 60 | RW27-1D2-U015 | $50 | |
| | 11.0 | 17.0 | 60 | RW27-1D2-U017 | $50 | |
| | 15.0 | 23.0 | 90 | RW27-1D2-U023 | $50 | |
| | 22.0 | 32.0 | 90 | RW27-1D2-U032 | $50 | |
| CWM32...CWM40 | 25.0 | 40.0 | 90 | RW67-1D2-U040 | $81 | |
| | 32.0 | 50.0 | 125 | RW67-1D2-U050 | $88 | |
| CWM50...CWM80 | 25.0 | 40.0 | 90 | RW67-2D2-U040 | $95 | |
| | 32.0 | 50.0 | 125 | RW67-2D2-U050 | $95 | |
| | 40.0 | 57.0 | 150 | RW67-2D2-U057 | $95 | |
| | 50.0 | 63.0 | 150 | RW67-2D2-U063 | $95 | |
| | 57.0 | 70.0 | 175 | RW67-2D2-U070 | $105 | |
| | 63.0 | 80.0 | 175 | RW67-2D2-U080 | $105 | |

*Note: 1 Availability upon request.*



Data is subject to change without notice.

## For use with CWB Contactors

## Two-pole Thermal Overload Relays Class 10 (used for single phase applications)

- Adjustable tripping current
- Phase-loss sensitivity
- Tripping class 10
- Auxiliary contacts 1NO + 1NC
- Temperature compensation from -40F to +1400F
- Hand/Auto/Reset button

### 2 POLE THERMAL OVERLOAD RELAYS - CLASS 10

| Matching Contactor | Setting Range [A] | | Max. Fuse [A] | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|---|
| | Min. | Max. | | | | |
| CWB9 - CWB38 | 0.28 | 0.40 | 15 | RW27-2D2-D004 | $50 | Z2 |
| | 0.40 | 0.63 | 15 | RW27-2D2-C063 | $50 | |
| | 0.56 | 0.80 | 15 | RW27-2D2-D008 | $50 | |
| | 0.80 | 1.20 | 15 | RW27-2D2-D012 | $50 | |
| | 1.20 | 1.80 | 15 | RW27-2D2-D018 | $50 | |
| | 1.80 | 2.80 | 15 | RW27-2D2-D028 | $50 | |
| | 2.80 | 4 | 15 | RW27-2D2-U004 | $50 | |
| | 4 | 6.30 | 25 | RW27-2D2-D063 | $50 | |
| | 5.60 | 8.00 | 30 | RW27-2D2-U008 | $50 | |
| | 7.00 | 10.0 | 40 | RW27-2D2-U010 | $50 | |
| | 8.00 | 12.5 | 50 | RW27-2D2-D125 | $50 | |
| | 10.0 | 15.0 | 60 | RW27-2D2-U015 | $50 | |
| | 11.0 | 17.0 | 60 | RW27-2D2-U017 | $50 | |
| | 15.0 | 23.0 | 90 | RW27-2D2-U023 | $50 | |
| | 22.0 | 32.0 | 90 | RW27-2D2-U032 | $50 | |
| | 32.0 | 40.0 | 90 | RW27-2D2-U040 | $50 | |
| CWB40-CWB80 | 25.0 | 40.0 | 90 | RW67-1D2-U040 | $81 | Z2 |
| | 32.0 | 50.0 | 125 | RW67-1D2-U050 | $88 | |
| | 25.0 | 40.0 | 90 | RW67-2D2-U040 | $95 | |
| | 32.0 | 50.0 | 125 | RW67-2D2-U050 | $95 | |
| | 40.0 | 57.0 | 150 | RW67-2D2-U057 | $95 | |
| | 50.0 | 63.0 | 150 | RW67-2D2-U063 | $95 | |
| | 57.0 | 70.0 | 175 | RW67-2D2-U070 | $105 | |
| | 63.0 | 80.0 | 200 | RW67-2D2-U080 | $105 | |

# Overloads

RW Series - Bi-Metallic

## Separate Mounting Bracket



| Description | Mounting on Overload Relays (2 or 3 pole) | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|
| Enables overload relay to be directly mounted to a back panel via screws or DIN rail | RW27-1D | BF27D | $14 | Z2 |
| | RW27-2D | BF27-2D | $14 | |
| | RW67-1D and RW67-2D | BF67.1D | $23 | |
| | RW117-1D | BF117D | $30 | |

## External Reset Button



| Description | Mounting in Cover of Control Panel | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|
| Enables overload relay to be Reset from control panel, without opening the cover | 22 MM Flush Reset PB Blue 'R' | CSW-RSBF4R | $20 | Z5 |
| | 30 MM Flush Reset PB Black 'Reset' | CSW30-RSBW | $22 | |

## Connector links (3 per package)



| Description | Contactor | Overload Relay | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|
| Link connectors for easier CWM contactors and RW overload relays assembly | CWM112 | RW117-2D3 | GA117D | $41 | Z2 |
| | CWM150 | RW317-1D3 | GA317-1D | $68 | |
| | CWM180 | RW317-1D3 | GA317-2D | $70 | |
| | CWM250 / CWM300 | RW317-1D3 | GA317-3D | $118 | |
| | CWM400 | RW317-1D3 | GA317-10D | $118 | |

**Lugs for RW Series (Overload Relay) (3 units per package)**



| Description / Wire Range | Mounting on Overloads | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|
| (2) 600 MCM...2AWG | RW407-2D (400A-840A) | LW1-2S600-B | $230 | Z2 |
| 600 MCM…4AWG | RW317-1D (200A-420A) | LW2-S600 | $75 | |
| 300 MCM...6AWG | RW317-1D (100A-215A) | LW3-S300 | $35 | |



Data is subject to change without notice.

## General Data and Main Contacts

| Catalog Number | | | RW17 | RW27 | RW67 | RW117 | RW317 | RW407 |
|---|---|---|---|---|---|---|---|---|
| Standards | | Units | IEC 60947 / UL 508 | | | | | |
| Setting current | | (A) | 0.28...17 | 0.28...32 | 25...80 | 75...112 | 100...420 | 400...840 |
| Tripping class | | | 10 | | | | | |
| Temperature compensation | | | Continuous | | | | | |
| Rated insulation voltage Ui (pollution degree 3) | IEC 60947 | (V) | 690 | | | | 1,000 | |
| | UL/CSA | (V) | 600 | | | | | |
| Rated impulse withstand voltage Uimp | | (kV) | 6 | | | | 8 | |
| Rated operational frequency | | (Hz) | 0...400 | | | | | |
| Degree of protection<br>Protection against direct contact from the front when actuated by a perpendicular test finger (IEC 536) | | | IP 20<br>Finger and back-of-hand proof | | | | | |
| Ambient temperature<br>Operating temperature<br>Storage temperature | | | -25 oC to +60 oC<br>-40 oC to +70 oC | | | | | |
| Climating proof<br>IEC 60 068-2-3<br>IEC 60 068-2-30 | | | Damp heat. constant<br>Damp heat. constant | | | | | |
| **Current heat loss**<br>Lower value of setting range<br>Higher value of setting range | | (W)<br>(W) | 0.9<br>1.4 | 0.9<br>1.7 | 1.5<br>4.7 | 2.3<br>4.7 | 1<br>1.9 | |

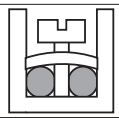
## Auxiliary Contacts

| Models | | | RW17 | RW27 | RW67 | RW117 | RW317 | RW407 |
|---|---|---|---|---|---|---|---|---|
| Standards | | | IEC 60 947-4-1 and UL 508 | | | | | |
| Rated insulation voltage Ui (pollution degree 3) | IEC | (V) | 690 | | | | | |
| | UL, CSA | (V) | 600 | | | | | |
| Rated operational voltage Ue | IEC | (V) | 690 | | | | | |
| | UL, CSA | (V) | 600 | | | | | |
| Rated thermal current Ith (**θ** ≤55 ºC) | | (A) | 6 | | | | | |
| **Rated operational current Ie** | | | | | | | | |
| AC-14 / AC-15 (IEC 60947-5-1) | 24 V | (A) | 4 | | | | | |
| | 60 V | (A) | 3.5 | | | | | |
| | 125 V | (A) | 3 | | | | | |
| | 230 V | (A) | 2 | | | | | |
| | 400 V | (A) | 1.5 | | | | | |
| | 500 V | (A) | 0.5 | | | | | |
| | 690 V | (A) | 0.3 | | | | | |
| UL, CSA | | | C600 | | | | | |
| DC-13 / DC-14 (IEC 60947-5-1) | 24 V | (A) | 1 | | | | | |
| | 60 V | (A) | 0.5 | | | | | |
| | 110 V | (A) | 0.25 | | | | | |
| | 220 V | (A) | 0.1 | | | | | |
| UL, CSA | | | R300 | | | | | |
| Short-circuit protection with fuse (gL/gG) | | (A) | 6 | | | | | |
| Minimum voltage / admissible current (IEC 60947-5-4) | | | 17 V / 5 mA | | | | | |

## Terminal Capacity and Tightening Torque - Main Contacts

| Reference | | | RW17 | RW27 | RW67 | RW117 | RW317 | | RW407 |
|---|---|---|---|---|---|---|---|---|---|
| Current setting | | (A) | 0.28...17 | 0.28...32 | 25...80 | 75...112 | 100...215 | 200...420 | 400...840 |
| **Cable size (75 ºC / Cu cable)** | | | | | | | | | |
| Flexible cable | 1 cable | ($mm^2$) | 1,5...10 | | 6,0...35 | 25...35 | 35...120 | 95...150 | - |
| | 2 cables | ($mm^2$) | | | - | - | | | |
| Cable with terminal or rigid cable | 1 cable | ($mm^2$) | 1,5...6,0 | | 6,0...35 | 25...35 | 35...120 | 95...150 | - |
| | 2 cables | ($mm^2$) | | | - | - | | | |
| Busbar | | ($mm^2$) | - | | | | Max 2x (25x5) | | Max 2x (60x10) |
| Tightening torque | | (N.m) | 2,3 | | 4,0 | 6,0 | 16,0 | 26,0 | 26,0 |
| UL cable size (75 ºC - Cu cable) | | AWG | 16...8 | | 10...3 | 6...1/0 | 3–300 kc-mil | 3/0 – 600 kcmil | 2x 600 kcmil<br>2x (1/4"x2") |
| Tightening torque (UL) | | (lb.in) | 20 | | 35 | 53 | 141 | 230 | 230 |

## Terminal Capacity and Tightening Torque - Auxiliary Contacts

| Models | | | RW17 | RW27 | RW67 | RW117 | RW317 | RW407 |
|---|---|---|---|---|---|---|---|---|
| Type of screws | | | M3.5 x 10 Philips | | | | | |
| Cable size (75 ºC / Cu cable) | | | | | | | | |
| Cable with or without terminal | ($mm^2$) |  | 2 x 1...2.5 | | | | | |
| AWG-wire | | | 16...12 | | | | | |
| Tightening torque | (N.m / lb.in) | | 1.5 / 13 | | | | | |

# Overloads

RW Series - Bi-Metallic

## Technical Data

### Main Data

| Models | | | RW27 |
|---|---|---|---|
| Standards | | | IEC 60947-1 and UL 508 |
| Rated insulation voltage Ui (pollution degree 3) | IEC 60947-4-1 | (V) | 690 |
| | UL, CSA | (V) | 600 |
| Rated impulse withstand voltage Uimp (IEC 60947-1) | | (kV) | 6 |
| Rated operational frequency | | (Hz) | 25...400 |
| Use with direct current | | | Yes |
| Maximum operation per hour | | (ops./h) | 15 |
| Protection degree (IEC 60529) | Main contacts | | IP10 |
| | Auxiliary contacts | | IP20 |
| | Frontal | | IP20 |
| Mounting | | | Direct on the contactor |
| Resistance to impact (IEC 60068-2-27 - 1/2 sinusoid) | | (g/ms) | 10/11 |
| Ambient temperature | Transport and storage | | -50 ºC...+80 ºC |
| | Operating | | -20 ºC...+70 ºC |
| | Temperature compensation | | -20 ºC...+60 ºC |
| Altitude | | (m) | 2000 |

### Main Contacts

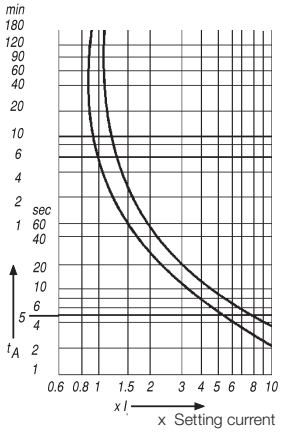
| Models | | | RW27 |
|---|---|---|---|
| Rated operational voltage Ue | IEC 60947-4-1 | (V) | 690 |
| | UL, CSA | (V) | 600 |
| Setting current / max fuse (gL/gG)1) | | (A) | 0.28...0.4 / 2 |
| | | | 0.43...0.63 /2 |
| | | | 0.56...0.8 / 2 |
| | | | 0.8...1.2 / 4 |
| | | | 1.2...1.8 / 6 |
| | | | 1.8...2.8 / 6 |
| | | | 2.8...4 / 10 |
| | | | 4...6.3 / 16 |
| | | | 5.6... 8 / 20 |
| | | | 7...10 / 25 |
| | | | 8...12.5 / 25 |
| | | | 10...15 / 35 |
| | | | 11...17 / 40 |
| | | | 15...23 / 50 |
| | | | 22...32 / 63 |
| | | | 32...40 / 90 |
| Average power dissipation per pole | | (W) | ≤3 |



Data is subject to change without notice.

## RW Tripping Characteristics

These tripping characteristics show the tripping of RW in relation to the current. They show the mean values of the tolerance ranges at on ambient temperature of 68°F (20°C), starting from cold stats. The tripping time of the overload releases at operational temperature is reduced to approximately 25% of the values shown. Under normal operational conditions, all three phases of the RWs should be loaded.




## Altitude & Temperature Derating

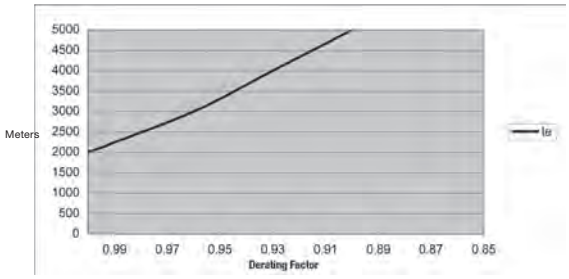
The derating of a RW overload relay has two possible factors:

1) Ambient temperature
   - Temperature compensation considers a factor according to which the rated current must be reduced when ambient temperature is higher than 60°C (140°F).

2) Altitude
   - Altitude compensation involves both, rated current and voltage.
   - Current compensation considers a factor according to the rated current must be reduced.
   - For voltage, altitude limits the higher operating voltage the overload relay can be used.

| Temperature Compensation | | Current Correction ffactor |
|---|---|---|
| 149°F | (65°C) | 0.94 |
| 158°F | (70°C) | 0.87 |
| 167°F | (75°C) | 0.81 |
| 176°F | (80°C) | 0.73 |

| Altitude | Voltage Correction [Ue] |
|---|---|
| Up to 2,000m (6,667ft) | 690 |
| Up to 3,000m (10,000ft) | 550 |
| Up to 4,000m (13,333ft) | 480 |
| Up to 5,000m (16,667ft) | 420 |




The derating of the permissible operating current for installation altitudes above 2,000m (6,667 ft) and ambient temperatures over 60°C (140°F) is calculated according to:

Total derating = Derating altitude x Derating ambient temperature

Example;
Altitude: 3,000 m (10,000 ft)
K1 = 0.96
Ambient temperature: 70°C (158°F)
K2 = 0.87

Total current derating = 0.96 x 0.87 = 0.84 x Ie
In this case, the maximum rated voltage we can connect to our RW overload relay is 550V.

In order to select the proper overload relay, you have to choose a device with a current range that accommodates:
Overload Setting Point = FLA motor / (K1 x K2)

As in the example above, K1 x K2 = 0.84
For a motor with FLA = 20Amps

Overload Setting Point = 20 / 0.84 = 23.8Amps

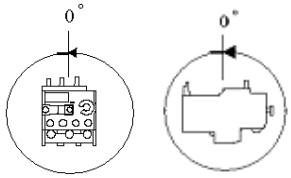
RW Series - Bi-Metallic

## Operating Positions[1]

### RW17D, RW27D, RW67D, RW117D, RW317D, RW407D

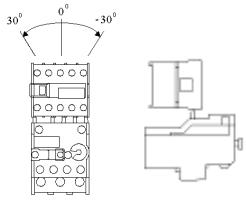
Mounting without contactor

The overload relays can be mounted at any position.



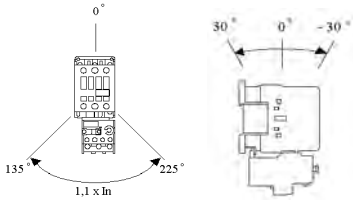

### RW17D with CWC Series

As showed at the left figure below, the inclination can not exceed ± 30° degrees for a perfectly functioning of the contactor. Laterally, as showed at the right figure below, the mounting position is equivalent to 0° degrees - not requiring a correction factor on the dial of the relay. The assembly can work with mounting variations of 0° to 180°




### RW27D, RW67D, RW117D, RW317D, RW407

The mounting position showed at the left figure below is equivalent to 0° degrees - not requiring a correction factor on the dial of the relay. The assembly can work with mounting variations of 0° to 135° for each side, however the mounting with the relay above the contactor, position between 135° and 225°, is required a correction factor of +10% on the dial of the relay. Laterally, as showed at the right figure below, the inclination can not exceed ± 30° for a perfect functioning of the contactor. D with CWM/CWM Series



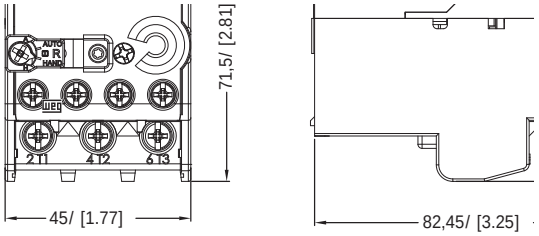

*Note: 1)Please consult WEG for different mounting positions.*



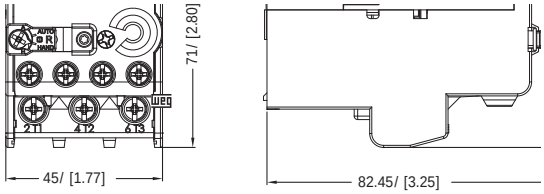


Data is subject to change without notice.

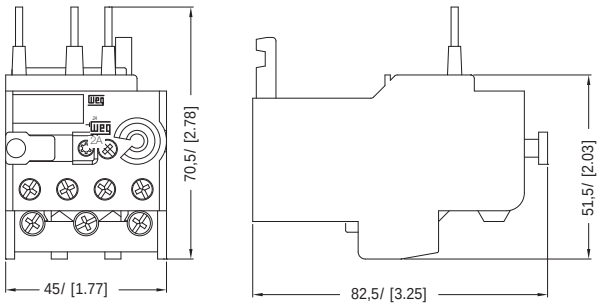
### RW17-1D



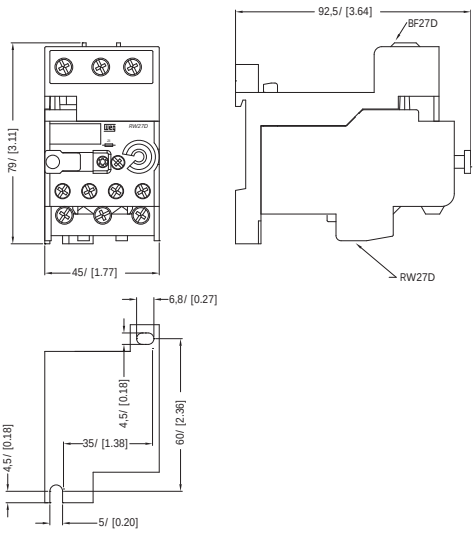

### RW17-2D



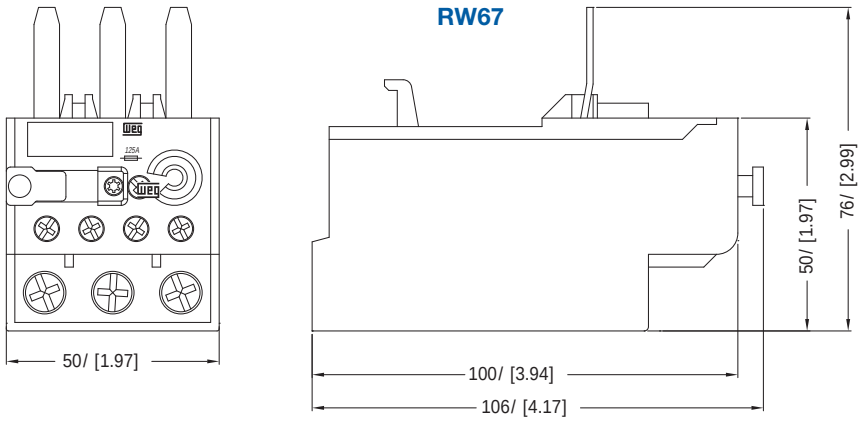

### RW27




### RW27 + BF27



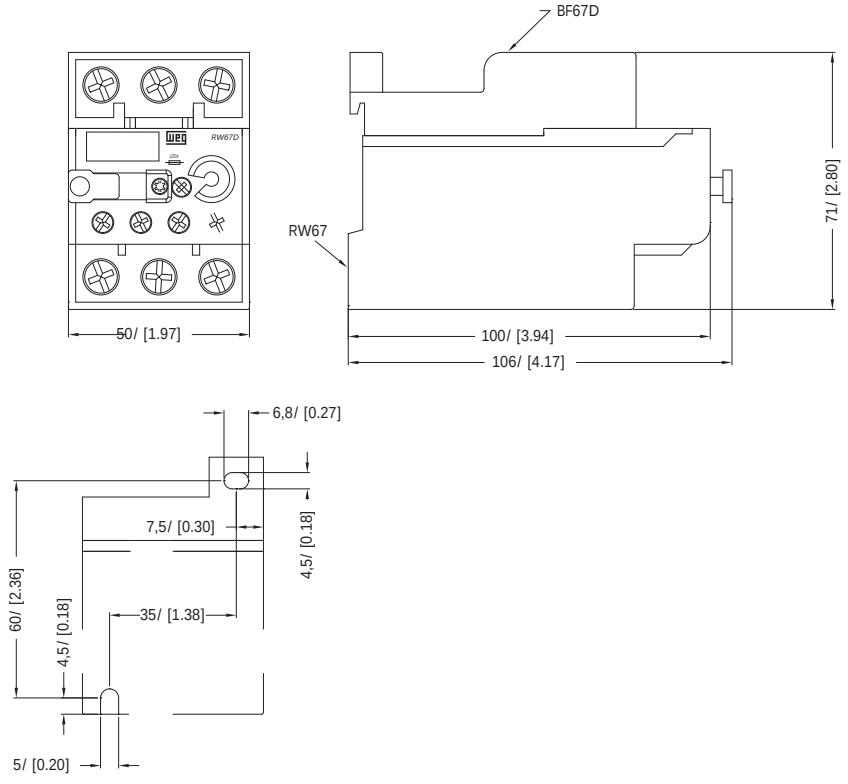

### RW67



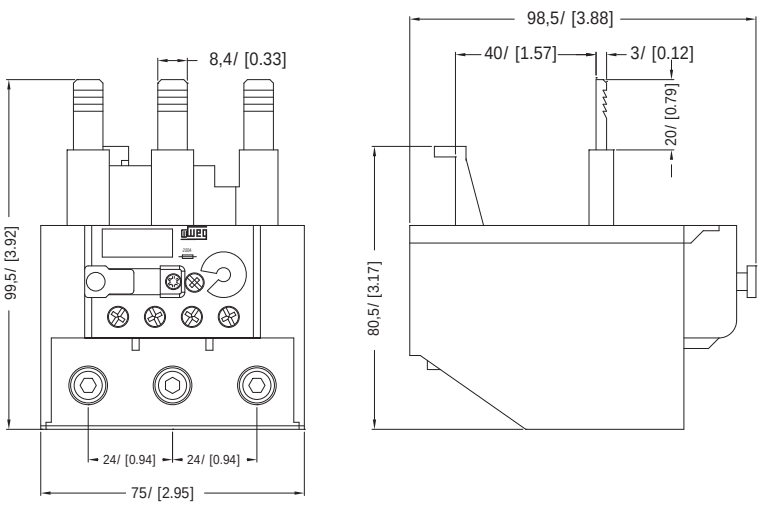
# Overloads

## RW Series - Bi-Metallic

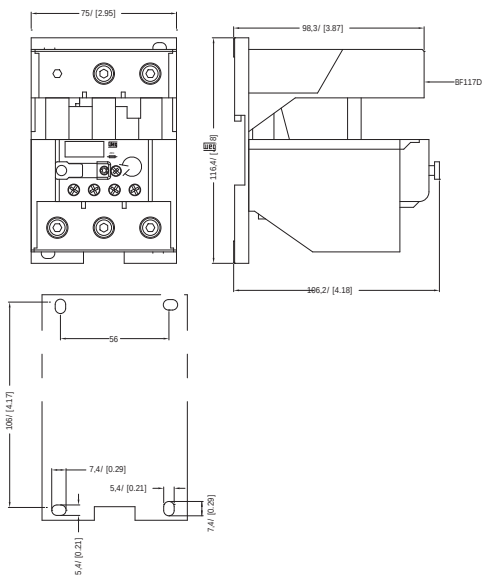
### RW67 + BF67




### RW117-1D



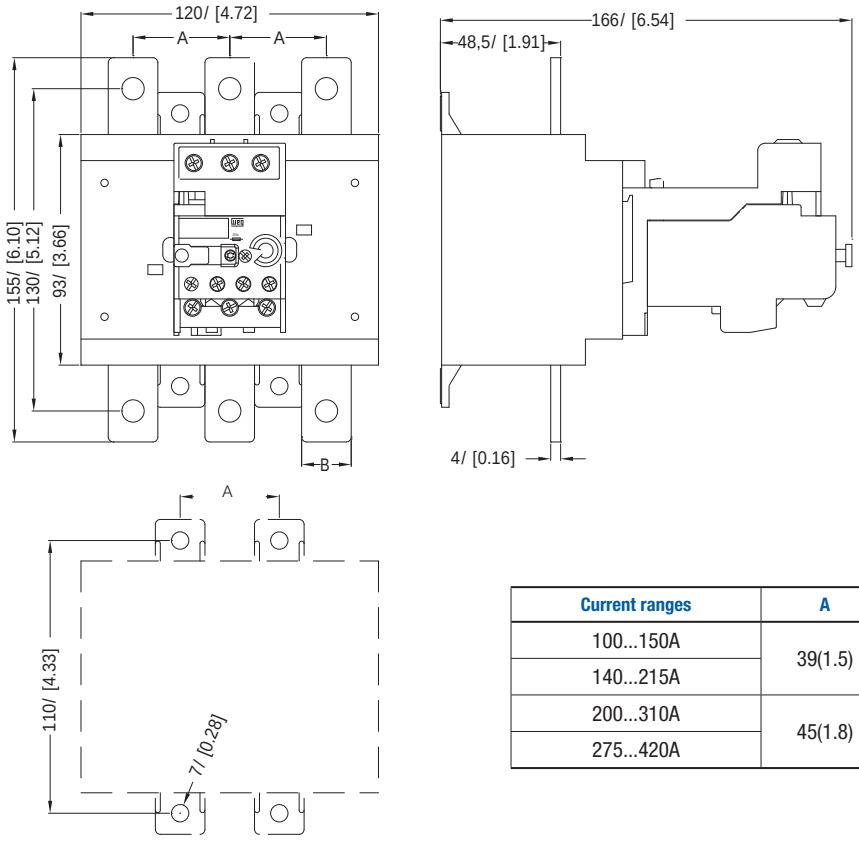

### RW117-2D





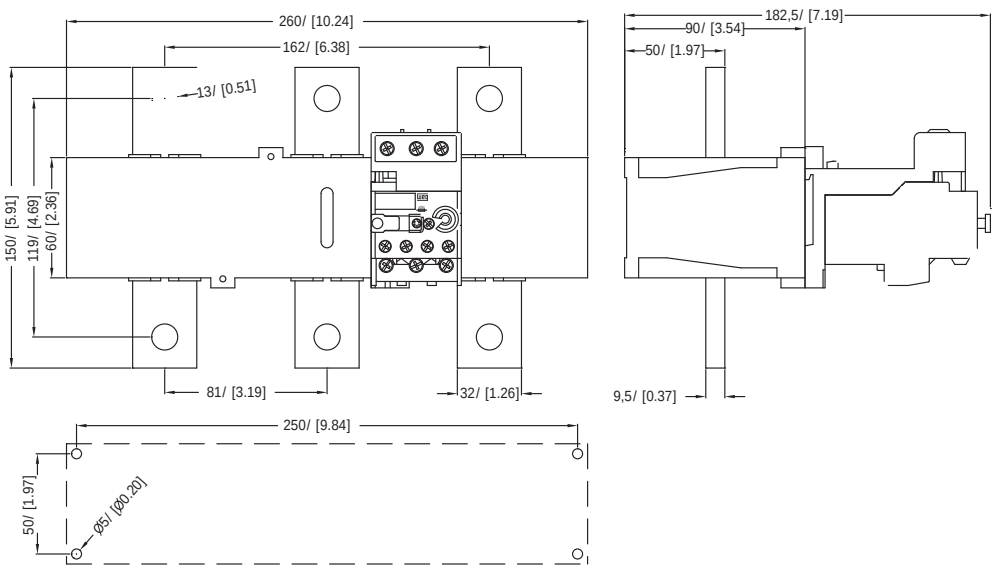

Data is subject to change without notice.

## RW317




| Current ranges | A | B |
|---|---|---|
| 100...150A | 39(1.5) | 20(0.8) |
| 140...215A | | |
| 200...310A | 45(1.8) | 25(1.0) |
| 275...420A | | |

## RW407



# Overloads

Solid-State Overload Relays

## RW-E

The new RW_E Solid State Overload relays are developed with cutting edge technology according to the most demanding standards worldwide. With its wide current/AMP setting; the RW_E OL Relay can be used for protection of electric motors of different power ratings. The benefit is versatility and flexibility for manufacturers due to the possibility of standardization of control panels. This Solid State Overload Relay can be directly mounted on WEG Contactors (CWM and CWB lines) providing very reliable and flexible motor starter units. The RW_E counts on two independent and highly reliable built in auxiliary contacts that assure the motor is switched off when a failure occurs.




UL File No. E189202

### Standard Features:

- 3-pole solid state overload relays with adjustable trip class: 10, 20 and 30
- Self-powered
- Wide adjustment range (5:1)
- Thermal memory
- Phase loss protection (less than 5 seconds)
- Phase unbalance protection (>40% between phases)
- Temperature compensated (-20 °C up to +60 °C)
- Manual or automatic reset modes
- Direct mounting on CWB9...38 and CWM9...105 contactors
- Separate mounting is possible with accessories 1NO + 1NC built in auxiliary contacts

### Solid-State Overload Relay Catalog Number Sequence

| RWB | 40 | E | - | 3 | - | A4U040 |
|---|---|---|---|---|---|---|

**Contactor Series**
RWM - Solid State OL for CWM
RWB - Solid State OL for CWB

**Contactor Frame**
40: 40A Contactor
112: 112A Contactor
420: 420A Contactor
840: 840A Contactor

**OL Relay Type**
E: Electronic OL

**Power Poles**
3: 3-Phase Relay

**Overload Current Settings**
A4U002: 0.4 - 2.0A
A4U008: 1.6 - 8.0A
A4U025: 5 - 25A
A4U040: 8 - 40A
A4U056: 14 - 56A
A4U112: 28 - 112A
A4U250: 50 - 250A
A4U420: 85 - 420A
A4U840: 170 - 840A

*Chart intended as reference only and not to create part numbers.*



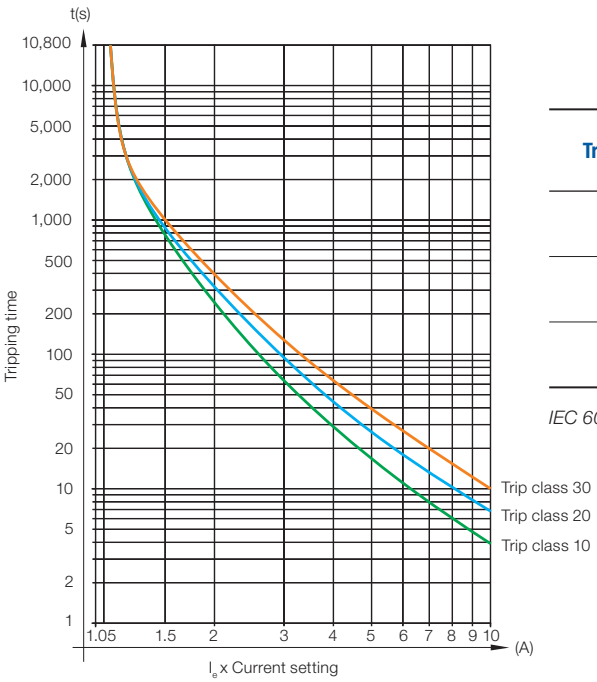
Data is subject to change without notice.

## Suitable for Great Variety of Applications

The solid-state overload relays RW_E are suitable to protect motors in a wide range of industrial applications including those where long starting time is required. This way, motors on low, medium or heavy duty applications can be properly protected just by selecting the proper trip class (10, 20 or 30 according to IEC 60947-4-1) in the DIP-switches.

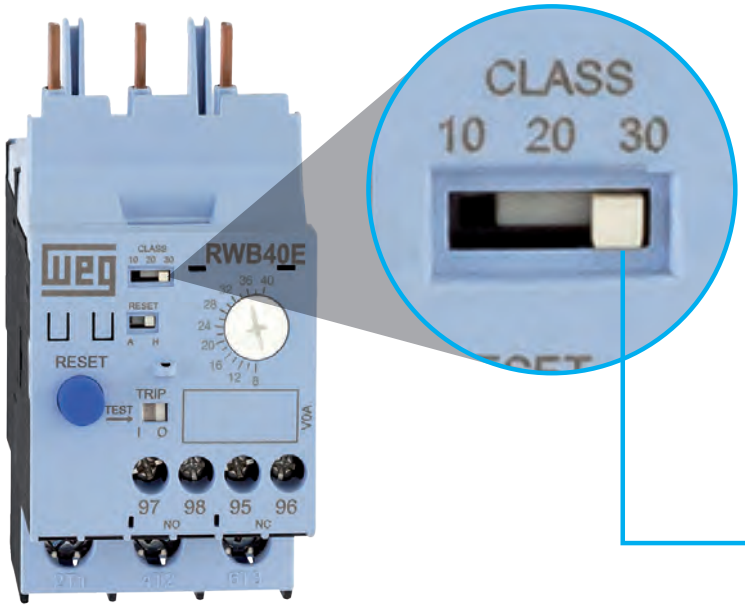
Additionally, the microprocessed electronic circuits of RW_E are temperature compensated according to IEC 60947-4-1, which means that throughout the temperature range of -20 °C up to +60 °C, the tripping point is not affected and it performs consistently without undesirable tripping.

The RW_E also features thermal memory which assures that the heating and cooling effects of motors are modeled and proper protection is guaranteed even after downtime periods.




| Trip class | Multiples of current setting | | | |
|---|---|---|---|---|
| | 1.05 x Ir | 1.2 x Ir | 1.5 x Ir | 7.2 x Ir |
| 10 | - | Tp <2h | Tp <4min | 4 <Tp ≤10s |
| 20 | - | Tp <2h | Tp <8min | 6 <Tp ≤20s |
| 30 | - | Tp <2h | Tp <12min | 9 <Tp ≤30s |

*IEC 60947-4-1*




*Trip class dip-switch*

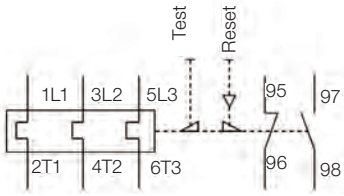
# Overloads

## Solid-State Overload Relays

### RW_E Solid-State Overload Relays from 0.4 up to 840 A





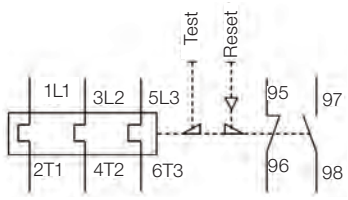
| For direct mounting on contactors | Current range A | Diagram | Max fuse (gL/gG) A | Catalog Number | Weight kg | List Price | Multiplier |
|---|---|---|---|---|---|---|---|
| CWB9...38 | 0.4...2 |  | 16 | RWB40E-3-A4U002 | 0.250 | $92 | Z2 |
| CWB9...38 | 1.6...8 | | 32 | RWB40E-3-A4U008 | | | |
| CWB9...38 | 5...25 | | 63 | RWB40E-3-A4U025 | | | |
| CWB9...38 | 8...40 | | 125 | RWB40E-3-A4U040 | 0.250 | $145 | |
| CWM9...40 | 0.4...2 | | 16 | RWM40E-3-A4U002 | 0.250 | $92 | |
| CWM9...40 | 1.6...8 | | 32 | RWM40E-3-A4U008 | | | |
| CWM9...40 | 5..25 | | 63 | RWM40E-3-A4U025 | | | |
| CWM9...40 | 8...40 | | 125 | RWM40E-3-A4U040 | 0.918 | $145 | |
| CWM50...105 | 14...56 | | 160 | RWM112E-3-A4U056 | 0.918 | $225 | |
| CWM50...105 | 28...112 | | 250 | RWM112E-3-A4U112 | 0.918 | $240 | |



*Note: Not to be used in single-phase applications.*





| For separate mounting or by connector links[1] | Current range A | Diagram | Max fuse (gL/gG) A | Catalog Number | Weight kg | List Price | Multiplier |
|---|---|---|---|---|---|---|---|
| CWM112...500 | 50...250 |  | 500 | RWM420E-3-A4U250 | 2,520 | $490 | Z2 |
| | 85...420 | | 710 | RWM420E-3-A4U420 | | $580 | |
| CWM150...800 | 170....840 | | 1,250 | RWM840E-3-A4U840 | 4,150 | $1,300 | |



*Note: Not to be used in single-phase applications.*
*Note: 1) RWM840E model allows two different types of connection to contactor:*
*a) By connecting the contactor cables to relay busbars;*
*b) By removing the relay busbars and using the Ø32 mm window for the passage of the contactor cables.*



Data is subject to change without notice.

# Accessories

## Mounting Kit

| Image | For use with relays | Description | Catalog Number | Weight kg | List Price | Multiplier |
|---|---|---|---|---|---|---|
|  | RWM40E | Enables the overload relay to be mounted directly to a panel via screws or 35 mm DIN rail | BF27D | 0.050 | $14 | Z2 |
| | RWB40E | | BF27D-2D | | | |
|  | RWM112E | | BF112 | 0.230 | $35 | |

## Connector Links for Direct Mounting of Overload Relay on Contactor

| Image | For use with relays | For use with contactors | Catalog Number | Weight kg | List Price | Multiplier |
|---|---|---|---|---|---|---|
|  | RWM112E | CWM112/150 | GA117D | 0.135 | $41 | Z2 |
| | RWM420E | CWM150 | GA317-1D | 0.250 | $68 | |
| | | CWM180 | GA317-2D | 0.270 | $70 | |
| | | CWM250/300 | GA317-3D | 0.630 | $118 | |
| | | CWM400 | GA317-10D | 0.500 | $118 | |

## Phase Barriers

| Image | For use with relays | Description | Catalog Number | Weight kg | List Price | Multiplier |
|---|---|---|---|---|---|---|
|  | RWM420E | Contains 1 set of plastic insulators (top / bottom) and fixing screws to be used where the overload relay power terminals external dimension exceed the busbar external dimension | IBRW317 | 0.044 | $4 | Z2 |

## Reset Pushbutton with Shaft

| Image | For use with relays | Description | Catalog Number | Weight kg | List Price | Multiplier |
|---|---|---|---|---|---|---|
|  | RW_E | Blue Flush pushbutton - Engraved Reset - with shaft. Length: max. 250 mm and min. 22.5 mm | CSW-BHF437 | 0.032 | $12 | Z2 |

# Overloads

## Solid-State Overload Relays

## Technical Data

### General Data

| Product model | | | RWM40E / RWB40E | RWM112E | RWM420E | RWM840E |
|---|---|---|---|---|---|---|
| Standards | | | IEC 60947-4-1, IEC 60947-5-1, IEC 60947-1, UL 60947-1, UL 60947-4-1A and UL 508 | | | |
| Rated insulation voltage $U_i$ (pollution degree 3) | IEC 60947-4-1 | (V) | 690 | | 100 | |
| | UL, CSA | (V) | 600 | | | |
| Rated impulse withstand voltage $U_{imp}$ (IEC 60947-1) | | (kV) | 6 | | 8 | |
| Rated operational frequency (sinusoidal networks) | | (Hz) | 50/60 | | | |
| Suitable for use | Three phase loads | | Yes | | | |
| | Single phase / two phase loads | | No | | | |
| | DC current loads | | No | | | |
| Trip class (IEC 60947-4-1) | | | 10, 20 or 30 - selectable | | | |
| Additional featured protections | Phase loss | | Yes / less than <5s | | | |
| | Phase unbalance | | Yes / >40% | | | |
| Reset | Manual / minimum downtime for reset | | Yes / instantaneous | | | |
| | Automatic / minimum downtime for reset | | Yes / ≥90s | | | |
| Maximum operation per hour | | (ops./h) | 30 | | | |
| Protection degree (IEC 60529) | Main contacts | | IP10 | | IP00 | |
| | Auxiliary contacts | | IP20 | | | |
| Mounting | | | 1) | | 2) | |
| Mechanical shock resistance - 1/2 sinusoid | | | 15 g / 11ms | | | |
| Vibration resistance (IEC 60068-2-6) | | | 6 g / 30...300 Hz | | | |
| Ambient temperature | Transport and storage | | -50 ºC...+80 ºC | | | |
| | Operating | | -20 ºC...+60 ºC | | | |
| | Temperature compensation | | -20 ºC...+60 ºC | | | |
| Altitude | | | 2,000 m | | | |

*Notes: 1) Direct mounting on contactor or directly on the panel via screws or 35 mm DIN rail when using the mounting kit accessory (BF27D and BF112)*
*2) Direct mounting on contactor when using the Connector Link GA117 / GA317 accessory or directly on the panel via screws.*

### Main Contacts

| Product model | | | RWM40E / RWB40E | RWM112E | RWM420E | RWM840E |
|---|---|---|---|---|---|---|
| Rated operational voltage Ue | IEC 60947-4-1 | (V) | 690 | | 100 | |
| | UL, CSA | (V) | 600 | | | |
| Current setting / max fuse (gL/gG) | | (A) | 0.4...2 / 16<br>1.6...8 / 32<br>5...25 / 63<br>8...40 / 125 | 14...56 / 160<br>28....112 / 250 | 50...250 / 500<br>85...420 / 710 | 170...840 / 1,250 |
| Setting current / average power dissipation per pole | | (W) | 0.4...2 / 0.07<br>1.6...8 / 0.06<br>5...25 / 0.38<br>8...40 / 1.5 | 14...56 / 2<br>28....112 / 2.6 | 50...250 / 12<br>85...420 / 12 | 170...840 / 14.5 |

*Notes: 1) Direct mounting on contactor or directly on the panel via screws or 35 mm DIN rail when using the mounting kit accessory (BF27D and BF112);*
*2) Direct mounting on contactor when using the Connector Link GA117 / GA317 accessory or directly on the panel via screws.*

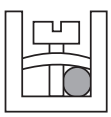
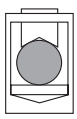
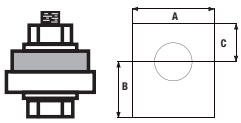

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# Technical Data

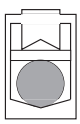
## Auxiliary Contacts

| Product model | | | RWM40...840E / RWB40E |
|---|---|---|---|
| Rated insulation voltage Ui (pollution degree 3) | IEC 60947-4-1 | (V) | 250 |
| | UL, CSA | (V) | 600 |
| Rated impulse withstand voltage Uimp (IEC 60947-1) | | (kV) | 4 |
| Rated operational voltage Ue | IEC 60947-4-1 | (V) | 250 |
| | UL, CSA | (V) | 600 |
| Rated thermal current Ith ≤ 60 °C) | | (A) | 5 |
| Rated operational current Ie | | | |
| AC-14/AC-15 (IEC 60947-5-1) | 24 V | (A) | 3 |
| | 120 V | (A) | 3 |
| | 250 V | (A) | 1.5 |
| DC-13 (IEC 60947-5-1) | 24 V | (A) | 2 |
| | 60 V | (A) | 0.4 |
| | 110 V | (A) | 0.22 |
| | 125 V | (A) | 0.22 |
| | 250 V | (A) | 0.1 |
| NEMA control circuit ratings | UL, CSA | | C300 / R300 |
| Short-circuit protection with fuse | | (A) | 6 |
| Minimum voltage / admissible current (IEC 60947-5-4) | | | 12 V / 10 mA |

## Terminal Capacity and Tightening Torque - Main Contacts

| Product model | | | BF27D | RWM40E / RWB40E | RW112E | BF112 |
|---|---|---|---|---|---|---|
| Type of screw | | | M4<br>Flat / Phillips #2 | M3.5<br>Flat / Phillips #2 | M10<br>Allen #4 | M10<br>Allen #4 |
| Cable size | | | | | | |
| Flexible cable | (mm²) |  | 1.5...10 | - | - | - |
| Cable with terminal / rigid cable | (mm²) | | 1.5...6 | - | - | - |
| AWG wire | | | 16...10 | - | - | - |
| Tightening torque | (Nm) | | 2.3 | - | - | - |
| Flexible cable | (mm²) |  | - | 1...10 | 2.5...35 | 2.5...35 |
| Cable with terminal / rigid cable | (mm²) | | - | 1...10 | 2.5...35 | 2.5...35 |
| AWG wire | | | - | 16...8 | 14...2 | 14...2 |
| Tightening torque | (Nm) | | - | 1.7 | 6 | 6 |
| **Product model** | | | **RWM420E** | | **RWM840E** | |
| Type of screw | |  | M10<br>Hexagon Head | | M12<br>Hexagon Head | |
| Cable with terminal | (mm²) | | 2 x (25...150) | | 2 x (60 x 10) | |
| Busbar (A x B x C) | (mm) | | 25 x 18.5 x 12.5 | | 31.7 x 28.3 x 15 | |
| Tightening torque | (Nm) | | 26 | | 26 | |

## Terminal Capacity and Tightening Torque - Auxiliary Contacts

| Product model | | | RWM40...840E / RWB40E |
|---|---|---|---|
| Type of screw | | | Flat / Phillips<br>#1 |
| Cable size | | | |
| Cable with or without terminal | (mm²) |  | 1 x 1...2.5 |
| AWG wire | | | 16...12 |
| Tightening torque | (Nm) | | 0.8 |

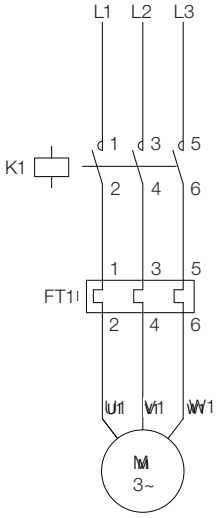
# Overloads

## Solid-State Overload Relays

## Technical Data

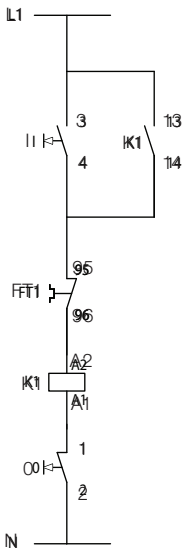
### Motor Protection - Alternating Current

**3-pole**

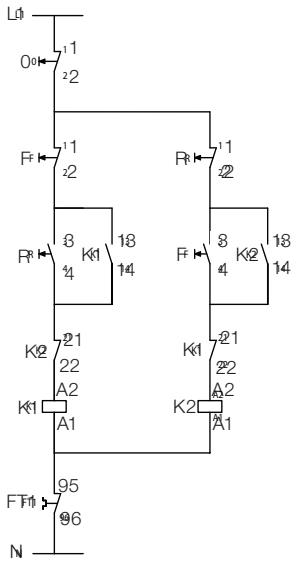



### Typical Connection - Contactor + Overload Relay

**Direct On Line Starter (1 Direction of Rotation)**




**Direct On Line Starter (2 Directions of Rotation)**

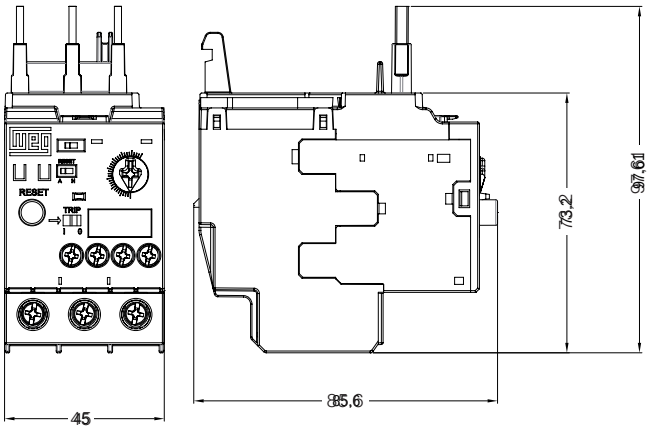




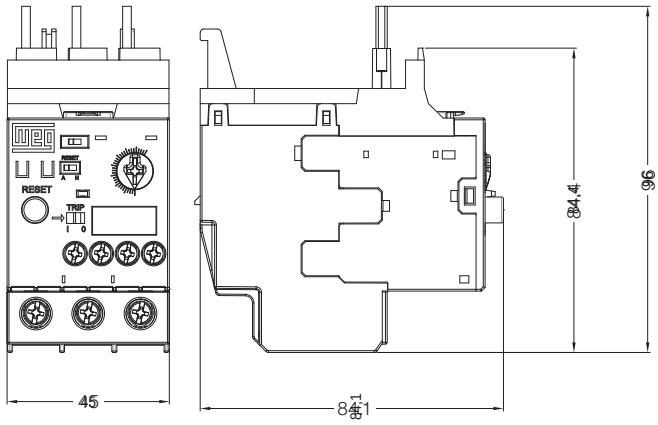

Data is subject to change without notice.

## Dimensions (mm)

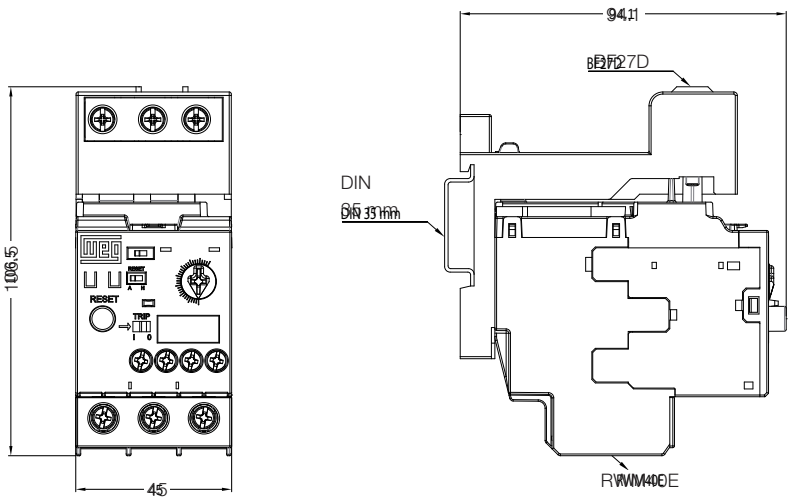
### RWM40E

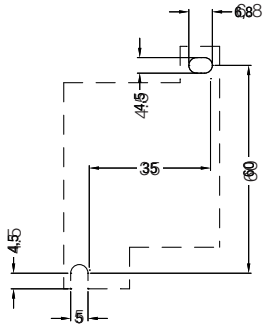



### RWB40E




### RWM40E + BF27



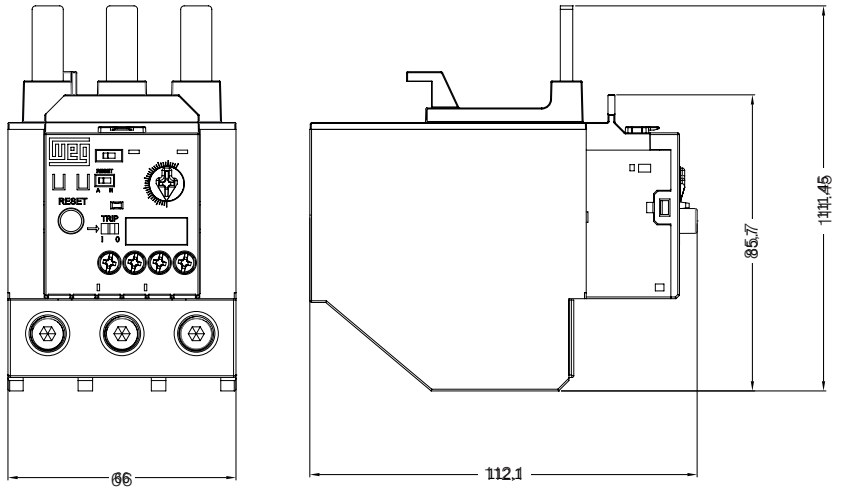



# Overloads

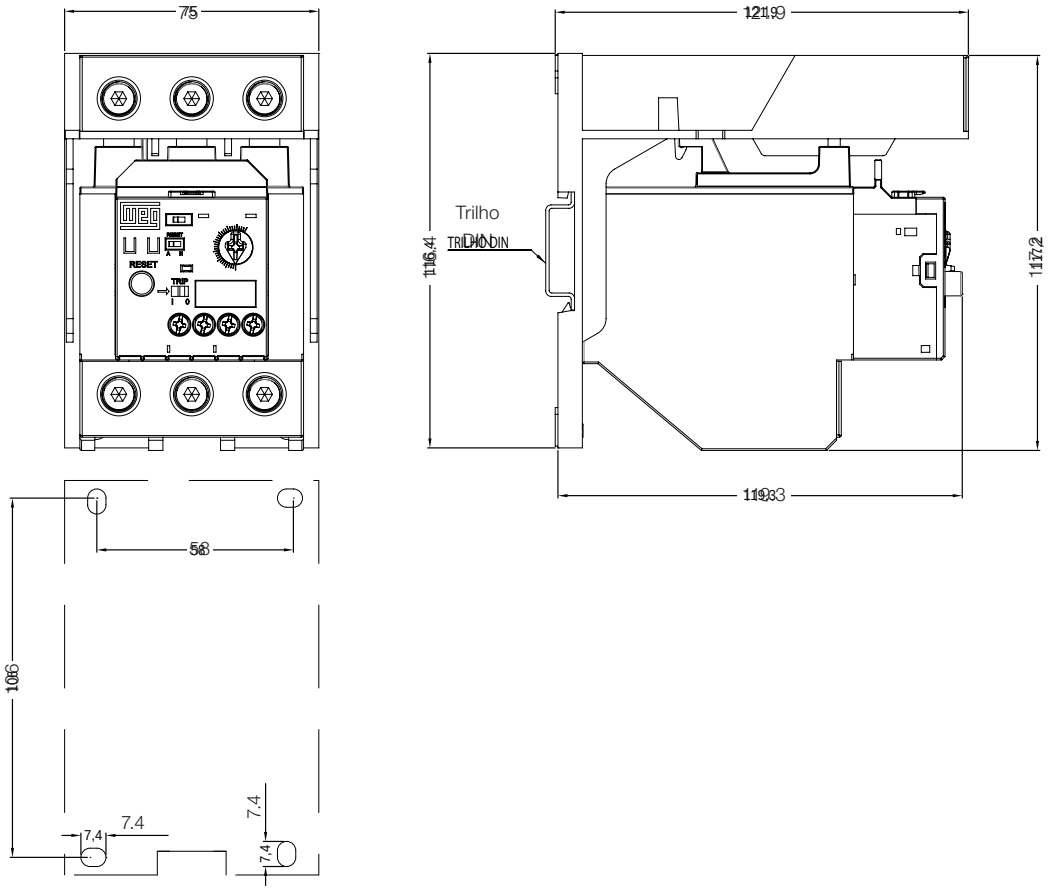
Solid-State Overload Relays

## Dimensions (mm)

### RWM112E




### RWM112E + BF112

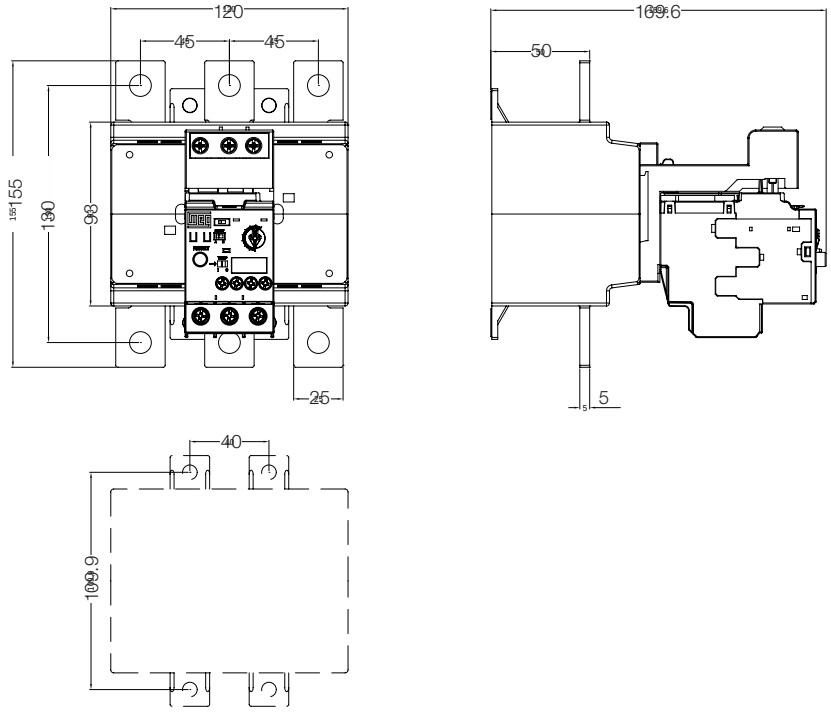




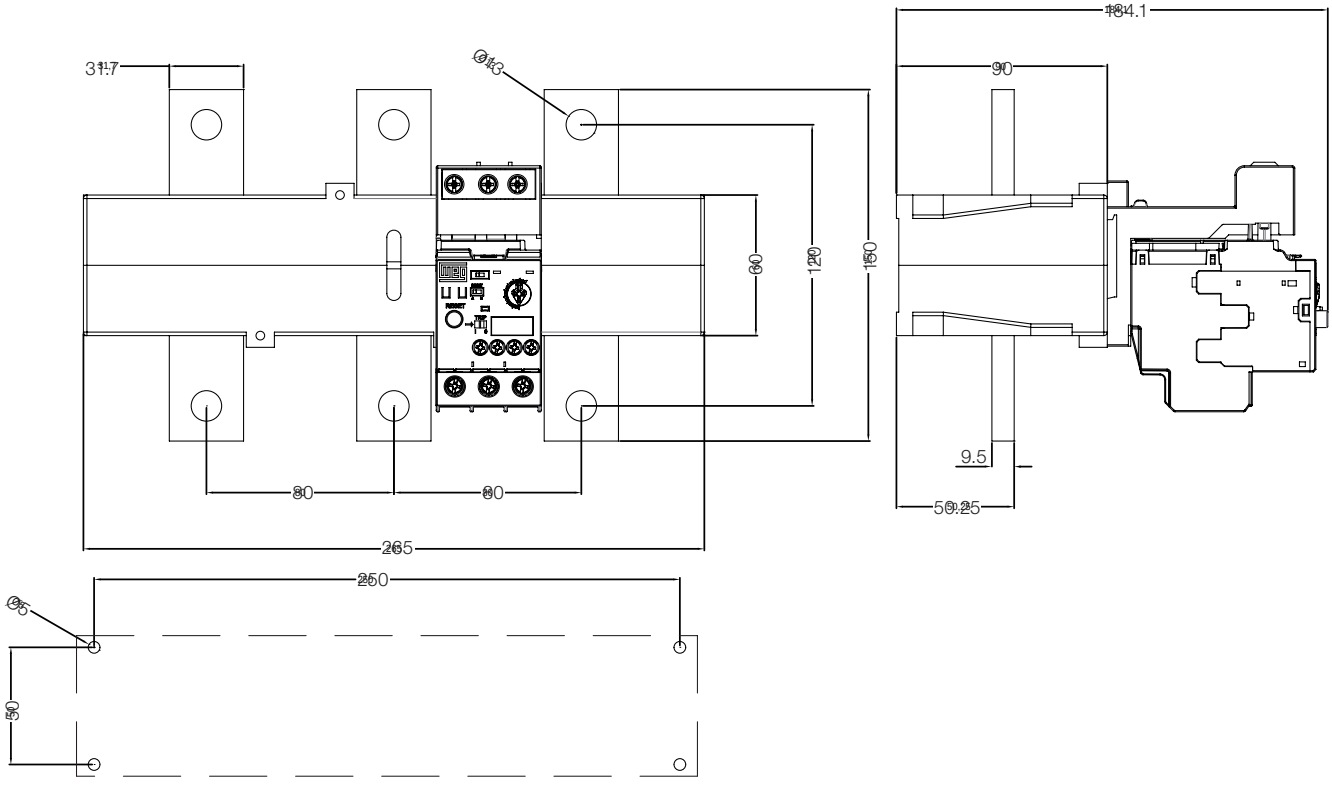

Data is subject to change without notice.

## Dimensions (mm)

### RWM420E




### RWM840E

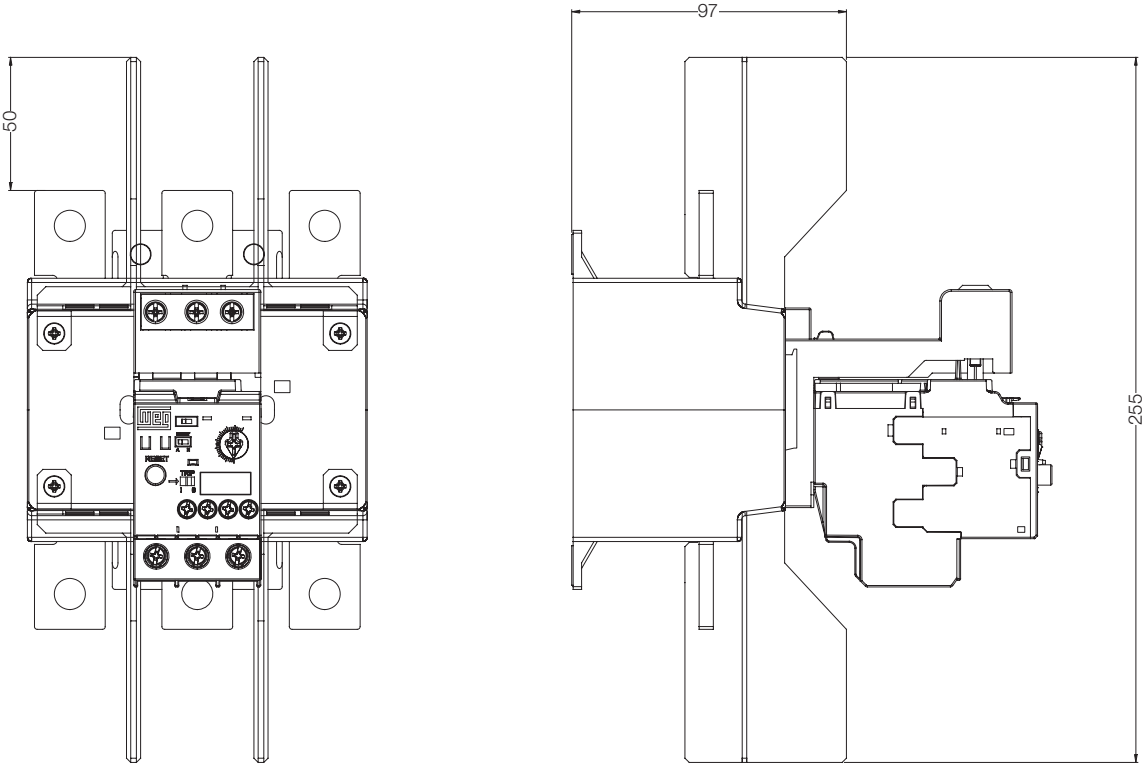


# Overloads

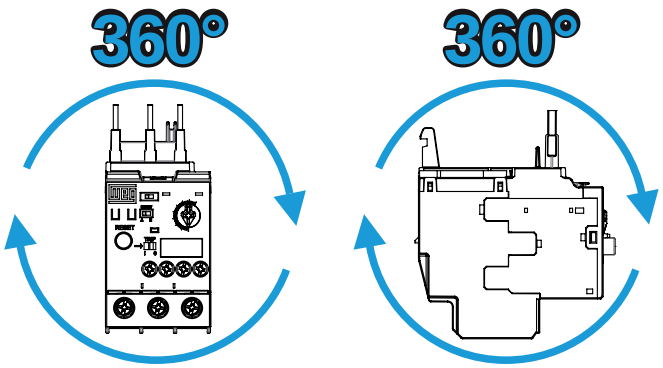
Solid-State Overload Relays

## Dimensions (mm)

### RWM420E + IBRW317




### RWM40...840E / RWB40E



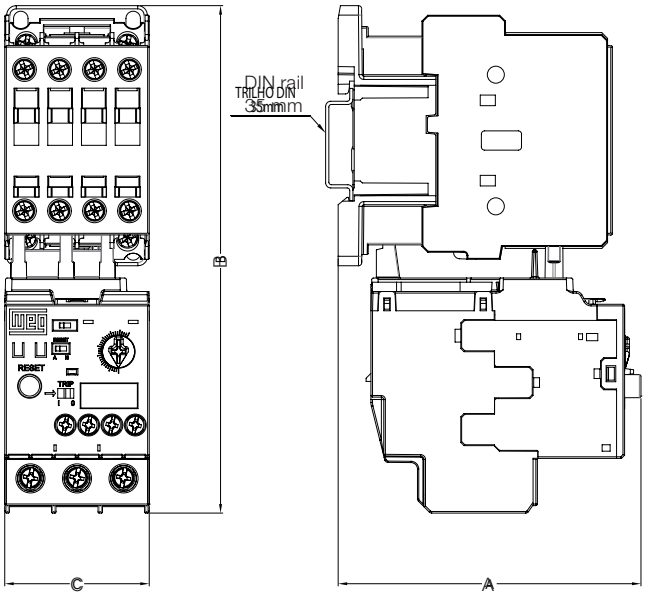

*Mounting Position*



Data is subject to change without notice.

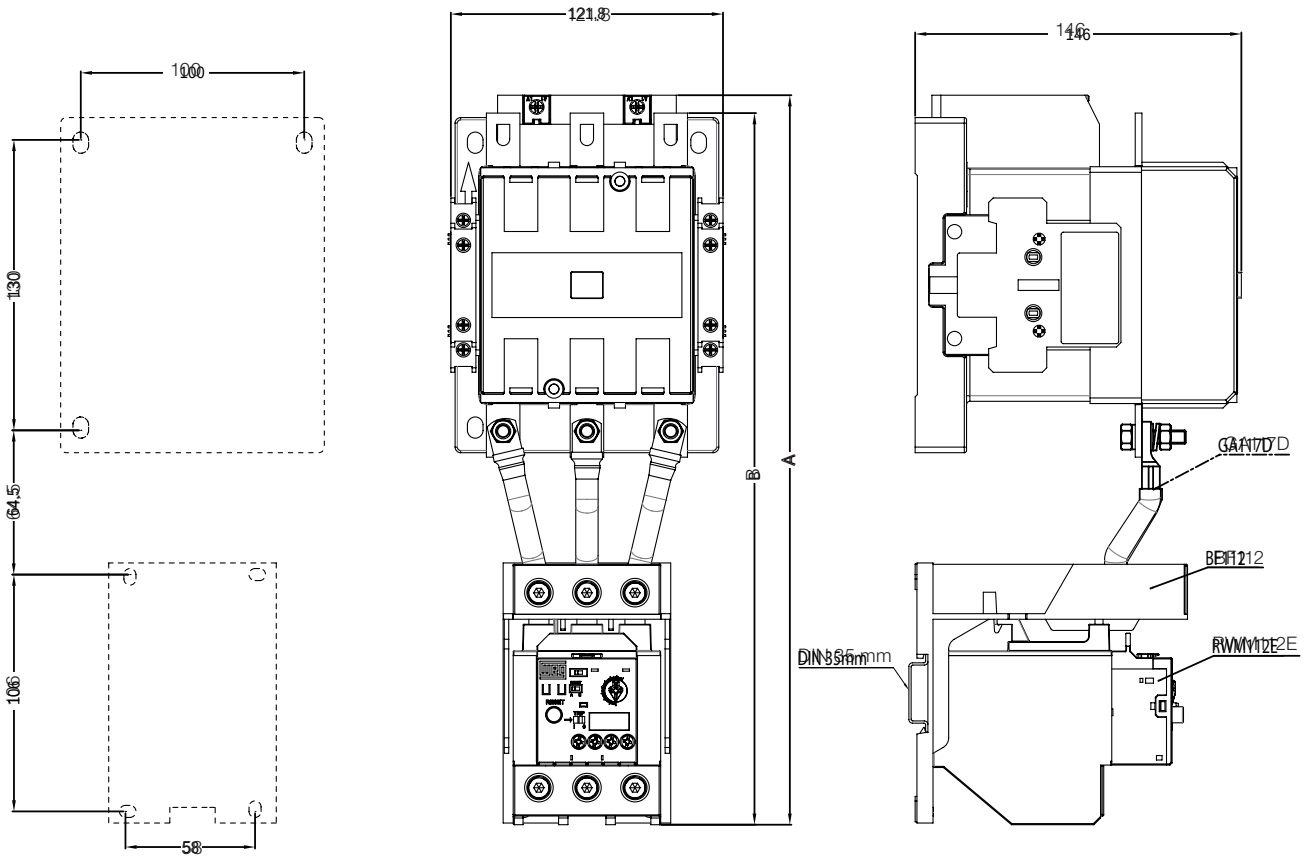
## Dimensions (mm)

### CWM9...105 + RWM40...112E and CWB9...38 + RWB40E




| Contactor | Type of contactor coil | A | B | C |
|---|---|---|---|---|
| CWM9...18 | CA | 94.3 | 158 | 45 |
| | CC | 125.1 | | |
| CWM25 | CA | 94.9 | 159.3 | 45 |
| | CC | 124.8 | | |
| CWM32/40 | CA | 98.6 | 166.5 | 55 |
| | CC | 118.6 | | |
| CWM50...80 | CA | 122.6 | 202.7 | 66 |
| | CC | | | |
| CWM95/105 | CA | 126 | 201.1 | 75.4 |
| | CC | | | |
| CWB9...18 | CA | 89.5 | 163.1 | 45 |
| | CC | 98.7 | | |
| CWB25...38 | CA | 93 | 166.5 | |
| | CC | 102.2 | | |

### CWM112 + RWM112E + BF112



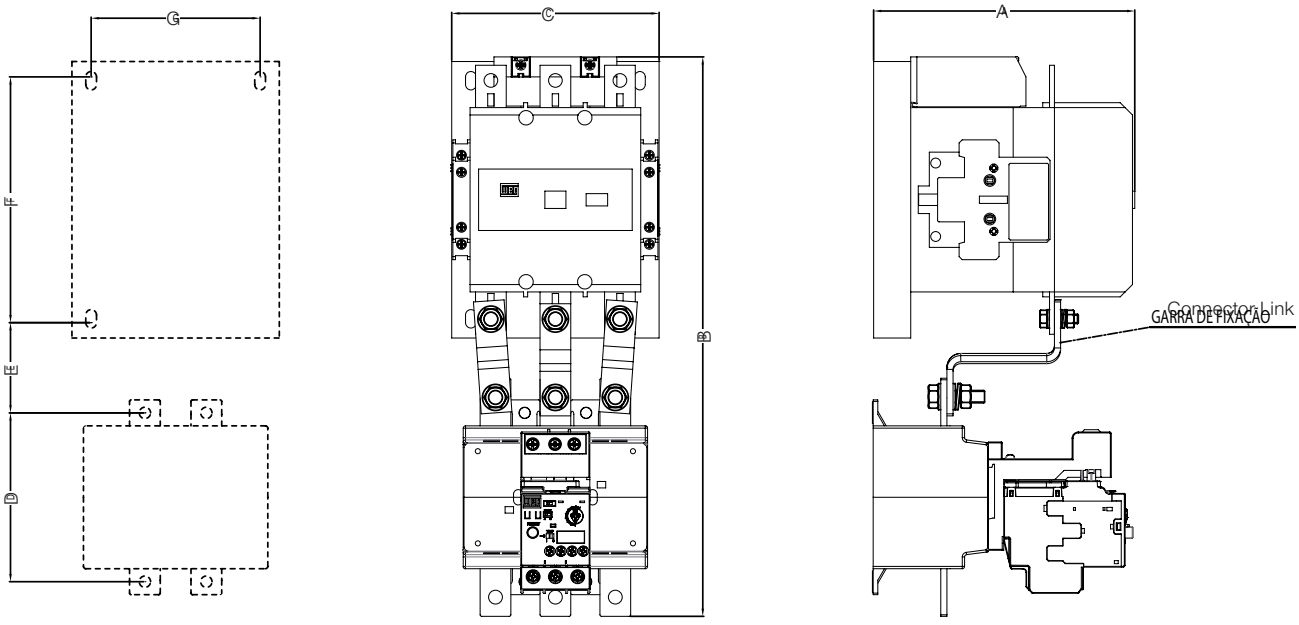

| CWM112 | A | B |
|---|---|---|
| AC conventional coil | - | 318.5 |
| Electronic coil | 326.5 | 318.5 |

# Overloads

## Solid-State Overload Relays

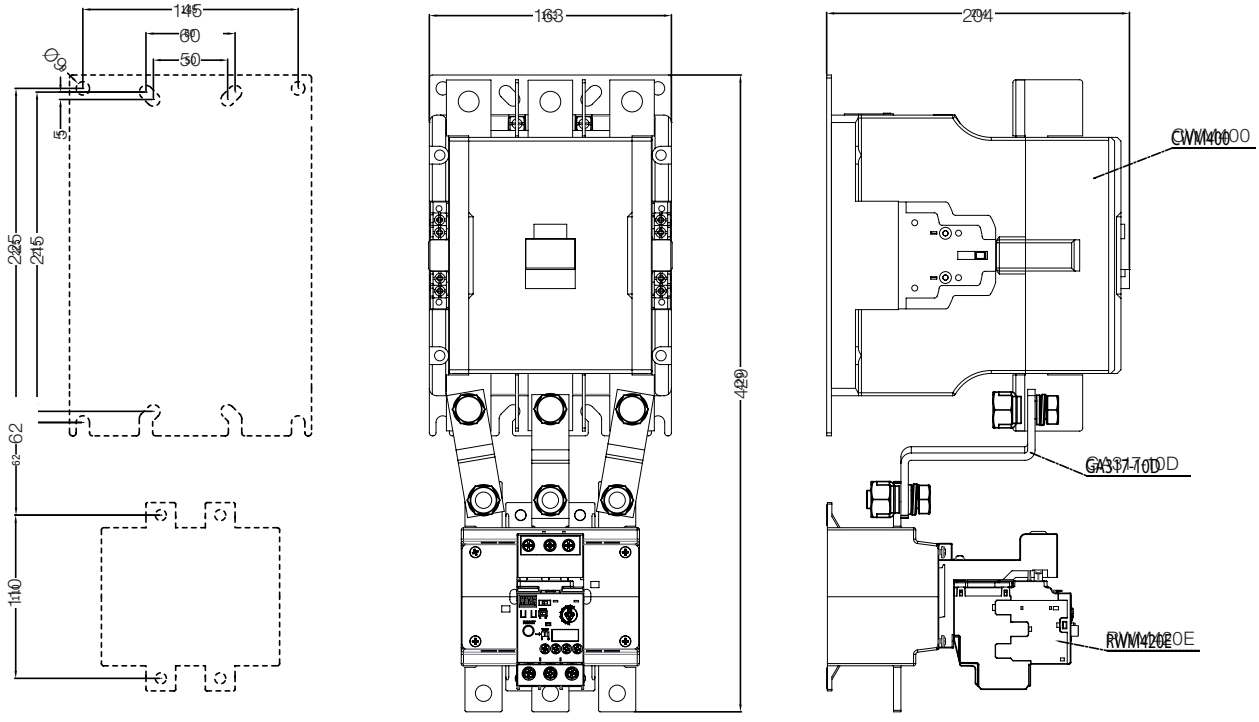
### Dimensions (mm)

#### CWM112...300 + RWM112/420E




| Contactor | Connector links | Overload relay | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|---|---|
| CWM112/150 | GA117D | RWM112E | 147 | 325 | 121.5 | 106 | 64 | 130 | 100 |
| CWM112/150 | GA317-1D | RW420E | 166 | 343 | | 110 | 60.5 | | |
| CWM180 | GA317-2D | RW420E | 172 | 358 | 139 | | 52.5 | 160 | 110 |
| CWM250/300 | GA317-3D | RW420E | 181 | 380 | 148.4 | | 55 | 180 | 120 |

#### CWM400 + RWM420E



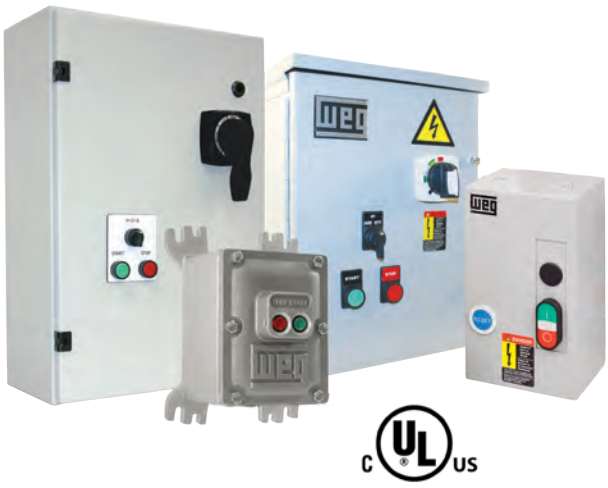



Data is subject to change without notice.

# Enclosed Starters

## Operation and Protection of Motors up to 600Hp at 460Vac (800A)

WEG enclosed starters series were designed to meet the requirements and flexibility frequently demanded in industrial applications. Featuring components that meet IEC design standards and UL horsepower ratings, WEG enclosed starters are UL508A approved and cULus certified. This means your panels will fulfill the rigorous requirements of UL508A and will have the quality and performance as for all WEG products



### Standard or Custom

By having most of the processes in WEG facilities we can manufacture not only the enclosed starters listed on this catalog, but also any other custom panel your application may require. Our Engineers will work together with you to provide the perfect solution for your application.

### Perfect Solution

WEG offers options for both: Full Voltage Non-Reversing Non-Combination Starters and Full Voltage Non-Reversing Combination Starters up to 250Hp at 460Vac.

WEG's UL508A panel shops can manufacture any configuration of Non-Combination or Combination Starters for any low voltage horsepower ratings. Some examples are listed below:

- Enclosed Contactors
- Full Voltage Reversing Starters
- Reduced Voltage Magnetic Starters
  (Part-Winding, Wye-Delta)
- Reduced Voltage Solid-State Starters
- Multi-Speed Starters
- Explosion Proof Starters

Whenever you need a reliable product to control & protect your application, WEG field specialists can help you find the best solution.

### New Concepts

Smaller size components allow selection of smaller enclosures which translates to cost savings. A wide range of ratings and frames allow the components to be more closely matched to your application. Our overload relays provide phase loss sensitivity, ambient temperature compensated for -4F to +140F (eliminating the need for additional heaters), and automatic reset for remote applications.

A wide range of industrial applications are covered: Pumps, Industrial Washing Machines, Compressors, Blowers, Cutting Machines, Conveyors, Lumber Processing and many others.

# Enclosed Starters

## Non-Combination Starters

## Product Line Overview

**NON-COMBINATION STARTERS**

| Type | | ESW | PESW | ESWX-M | ESWX-M | ESWX |
|---|---|---|---|---|---|---|
| | |  |  |  |  |  |
| Maximum Horsepower Rating at 460Vac 60Hz | [Hp] | 75 | 75 | 10 | 75 | 75 |
| Maximum Rated Current Imax (Iu) | [A] | 105 | 105 | 16 | 105 | 105 |
| Rated Operational Voltage | [V] | 600 | 600 | 600 | 600 | 600 |
| Enclosure Type | | Metallic Type 1 | Non-Metallic Type 4X | Cast Aluminum NEMA 7/9 NEMA 4X | Cast Aluminum Type 7/9 | Cast Aluminum Type 7/9 |
| Protections provided | | | | | | |
| Motor Disconnect | | | | ✓ | ✓ | |
| Motor Branch Short Circuit | | | | ✓ | ✓ | |
| Motor Controller | | ✓ | ✓ | ✓ | ✓ | ✓ |
| Motor Overload | | ✓ | ✓ | ✓ | ✓ | ✓ |
| Accessories | | | | | | |
| Pushbuttons | | N/A | N/A | N/A | N/A |  |
| Pilot light | | N/A | N/A | N/A | N/A |  |
| Emergency Stop | | N/A | N/A | N/A | N/A |  |
| Selector Switch | | N/A | N/A | N/A | N/A |  |
| Control Transformer | | N/A | N/A | N/A | N/A | (available as an option) |
| Timing Relays (RTW Series) | | N/A | N/A | N/A | N/A | (available as an option) |
| Protector Relay (RPW Series) | | N/A | N/A | N/A | N/A | (available as an option) |
| Level Relay (RNW Series) | | N/A | N/A | N/A | N/A | (available as an option) |



Data is subject to change without notice.

## Product Line Overview

**COMBINATION STARTERS**

| Type | | ESWC | ESWE | ESWF |
|---|---|---|---|---|
| | |  |  |  |
| Maximum Horsepower Rating at 460Vac 60Hz | [Hp] | 250 | 20 | 75 |
| Maximum Rated Current $I_{max}$ ($I_u$) | [A] | 300 | 32 | 105 |
| Rated Operational Voltage | [V] | 600 | 600 | 600 |
| Enclosure Type | | Metallic<br>Type 1<br>Type 3R<br>Type 4 / 12<br>Non-Metallic<br>Type 4X | Non-Metallic<br>Type 4X | Metallic<br>Type 1<br>Type 3R<br>Type 4 / 12<br>Non-Metallic<br>Type 4X |
| **Protections provided** | | | | |
| Motor Disconnect | | ✓ | ✓ | ✓ |
| Motor Branch Short Circuit | | ✓ | ✓ | ✓ |
| Motor Controller | | ✓ | ✓ | ✓ |
| Motor Overload | | ✓ | ✓ | ✓ |

**Accessories**

| | | |
|---|---|---|
| Pushbuttons |  |  |
| Pilot light |  |  |
| Emergency Stop |  |  |
| Selector Switch |  |  |
| Control Transformer | (available as an option) | (available as an option) |
| Timing Relays (RTW Series) | (available as an option) |  |
| Protector Relay (RPW Series) | (available as an option) |  |
| Level Relay (RNW Series) | (available as an option) |  |

## Enclosed Starter Series Catalog Numbers

| ESW | S | - | 18 | V18 | A | 2 | - | R32 |
|---|---|---|---|---|---|---|---|---|

**Enclosed Starter**

| |
|---|
| ESW |
| PESW |

**Construction Type**

| |
|---|
| Blank: Non-Combination 3-Phase |
| S: Non-Combination 1-Phase |
| C: Combination with Circuit Breaker |
| E: Self-Protected Type E (MPW Series) |
| F: Self-Protected Type F (MPW Series) |
| X: Explosion Proof |

**Non-Combo, Type C, Explosion Proc**

**Contactor Series**

| | |
|---|---|
| 9: 9 Amps | 105: 105 Amps |
| 12: 12 Amps | 112: 112 Amps |
| 18: 18 Amps | 150: 150 Amps |
| 25: 25 Amps | 180: 180 Amps |
| 32: 32 Amps | 250: 250 Amps |
| 40: 40 Amps | 300: 300 Amps |
| 50: 50 Amps | 400: 400 Amps |
| 65: 65 Amps | 630: 630 Amps |
| 80: 80 Amps | 800: 800 Amps |
| 95: 95 Amps | |

**Type E & Type F Starters MPW Series**

| |
|---|
| M18: 18A MPW |
| M40: 40A MPW |
| M65: 65A MPW |
| M100: 100A MPW |

**Control Voltage**

| Without CPT | Enclosed MMP Only |
|---|---|
| V04: 24V AC | Blank: No Control Voltage (Manual Switch) |
| V18: 120V AC | |
| V24: 208-240V AC | |
| V47: 480V AC | |
| V56: 600V AC | |

**With CPT (Prim / sec)**

| | |
|---|---|
| T01: 208V / 120V | TA1: 208V / 120V + 50W |
| T02: 240V / 120V | TA2: 240V / 120V + 50W |
| T03: 277V / 120V | TA3: 277V / 120V + 50W |
| T04: 480V / 120V | TA4: 480V / 120V + 50W |
| T05: 600V / 120V | TA5: 600V / 120V + 50W |
| T06: 208V / 24V | TA6: 208V / 24V + 50W |
| T08: 240V / 24V | TA8: 240V / 24V + 50W |
| T09: 277V / 24V | TA9: 277V / 24V + 50W |
| T0A: 480V / 24V | TAA: 480V / 24V + 50W |
| T0B: 600V / 24V | TAB: 600V / 24V + 50W |

**Control Devices**

| |
|---|
| A: Start + Stop + Reset |
| B: H-O-A Switch + On + Off + Reset |
| C: On-Off Selector Switch + Reset |
| D: Off + Reset |
| E: Reset |
| G: On-Off Selector Switch + On + Off |
| H: H-O-A Selector Switch |
| I: None |
| J: On + Off + Rotary Handle + Pilot Light |
| K: H-O-A Selector Switch + On + Off + Rotary Handle + Pilot Lights |
| L: On-Off Key Switch |
| M: H-O-A Selector Switch + On + Off + Reset |
| N: H-O-A Selector Switch + On + Off + Rotary Handle + Reset |
| P: On + Off + Rotary Handle + Reset |
| R: Rotary Handle |

**Enclosure Type**

| |
|---|
| Blank: Type 1 |
| 3: Type 3R |
| 4: Type 4 |
| 0: Type 4X Stainless |
| 2: Type 12 |
| 79: Type 7&9 |
| X: Type 4X Plastic |

**Overload Protection**

| 3-Phase Starters | | 3-Phase Starters | | 1-Phase Starters | | 1-Phase Starters | | Manual Motor Protector's | |
|---|---|---|---|---|---|---|---|---|---|
| R01[1] | 0.28 -0.4 | R32 | 11 -17 | RM01[1] | 0.28 - 0.4 | RM33 | 15 - 23 | D01 | 0.1 - 0.16 |
| R02[1] | 0.4 -0.63 | R33 | 15 -23 | RM021 | 0.4 - 0.63 | RM34 | 22 - 32 | D02 | 0.16 - 0.25 |
| R03[1] | 0.56 -0.8 | R34 | 22 -32 | RM031 | 0.56 - 0.8 | RM35 | 25 - 40 | D03 | 0.25 - 0.4 |
| R04[1] | 0.8 -1.2 | R35 | 25 -40 | RM041 | 0.8 - 1.2 | RM36 | 25 - 40 | D04 | 0.4 - 0.63 |
| R05[1] | 1.2 -1.8 | R37 | 32 -50 | RM051 | 1.2 - 1.8 | RM38 | 32 - 50 | D05 | 0.63 - 1 |
| R06[1] | 1.8 -2.8 | R38 | 32 -50 | RM061 | 1.8 - 12.8 | RM39 | 40 - 57 | D06 | 1 - 1.6 |
| R07[1] | 2.8 -4 | R39 | 40 -57 | RM071 | 2.8 - 4 | RM40 | 50 - 63 | D07 | 1.6 - 25 |
| R08[1] | 4 -6 | R40 | 50 -63 | RM081 | 4 - 6.3 | RM41 | 57 - 70 | D08 | 2.5 - 4 |
| R09[1] | 5.6 -8 | R41 | 57 -70 | RM091 | 5.6 - 8 | RM42 | 63 - 80 | D09 | 4 - 6.3 |
| R10[1] | 7 -10 | R42 | 63 -80 | RM101 | 7 - 10 | | | D10 | 6.3 - 10 |
| R11[1] | 8 -12 | R43 | 63 -80 | RM111 | 8 - 12 | | | D11 | 10 - 16 |
| R12[1] | 10 -15 | R44 | 75 -97 | RM121 | 10 - 15 | | | D12 | 16 - 20 |
| R13[1] | 11 -17 | R45 | 90 -112 | RM131 | 11 - 17 | | | D13 | 20 - 25 |
| R14[1] | 7 -10 | R46 | 75 -97 | RM141 | 7 - 10 | | | D14 | 25 - 32 |
| R15[1] | 8 -12 | R47 | 90 -112 | RM151 | 8 - 12 | | | D15 | 10 - 16 |
| R16[1] | 10 -15 | R48 | 100 -150 | RM161 | 10 - 15 | | | D16 | 16 - 20 |
| R17[1] | 11 -17 | R49 | 140 -215 | RM171 | 11 - 17 | | | D17 | 20 - 25 |
| R18[1] | 15 -23 | R50 | 200 -310 | RM181 | 15 - 23 | | | D18 | 25 - 32 |
| R19[1] | 22 -32 | R51 | 275 -420 | RM191 | 22 - 32 | | | D19 | 32 - 40 |
| R20 | 0.28 -0.4 | R54 | 400 -600 | RM20 | 0.28 - 0.4 | | | D20 | 40 - 50 |
| R21 | 0.4 -0.63 | R55 | 560 -840 | RM21 | 0.4 - 0.63 | | | D21 | 50 - 65 |
| R22 | 0.56 -0.8 | | | RM22 | 0.56 - 0.8 | | | D22 | 55 - 75 |
| R23 | 0.8 -1.2 | | | RM23 | 0.8 - 1.2 | | | D23 | 70 - 90 |
| R24 | 1.2 -1.8 | | | RM24 | 1.2 - 1.8 | | | D24 | 80 - 100 |
| R25 | 1.8 -2.8 | | | RM25 | 1.8 - 2.8 | | | | |
| R26 | 2.8 -4 | | | RM26 | 2.8 - 4 | | | | |
| R27 | 4 -6.3 | | | RM27 | 4 - 6.3 | | | | |
| R28 | 5.6 -8 | | | RM28 | 5.6 - 8 | | | | |
| R29 | 7 -10 | | | RM29 | 7 - 10 | | | | |
| R30 | 8 -12 | | | RM30 | 8 - 12 | | | | |
| R31 | 10 -15 | | | RM31 | 10 - 15 | | | | |



Data is subject to change without notice.

# ESW/PESW



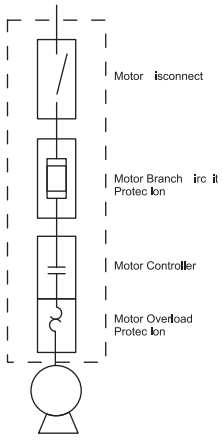


UL File No. E202315

WEG offers non-reversing and non-combination magnetic starters up to 75HP at 460Vac (105A). Featuring components that meet IEC design standards and UL horsepower ratings, incorporating WEG contactors and overload relays, the magnetic starters are ideal to protect and operate motors, ensuring smooth operation year-after year.

Three series are available:
- Metallic Type 1 – ESW Series
- Non-Metallic Type 4X – PESW Series
- Metallic Type NEMA 7/9 - ESWX Series

WEG ESW and PESW starters are pre-wired from the factory and recommended for all single and three phase applications where magnetic starters can be applied.




Types A through D com ina ion starters

## Standard Features

- High horsepower ratings in four compact sizes
- Fast acceleration and high initial torque
- Bimetallic Overload Relays – class 10
- Adjustable trip current
- Ambient temperature compensated
- Phase-loss sensitivity protection
- Selectable Manual or Automatic RESET
- Electrically isolated NO-NC auxiliary contacts
- Easy to install and setup

# Enclosed Starters

## ESW

### NEMA 1 Enclosure – Three Phase



### ESW Series - Non-combination Across The Line Starter
### Three -Phase - Enclosure Type-1

| Max. UL Horsepower | | | | Box | Setting Range | Coil Voltage | RESET only | | START/STOP + RESET | | Multiplier |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 200V | 230V | 460V | 575V | | | | Catalog Number | List Price | Catalog Number | List Price | |
| - | 1/3 | 1/2 | - | M04 | 0.8 - 1.2 | 120 | ESW-B9D15E-R23 | $157 | ESW-B9D15A-R23 | $210 | |
| | | | | | | 208-240 | ESW-B9V24E-R23 | | ESW-B9V24A-R23 | | |
| | | | | | | 480 | ESW-B9D39E-R23 | | ESW-B9D39A-R23 | | |
| - | - | 1 | 1 | M04 | 1.2 - 1.8 | 120 | ESW-B9D15E-R24 | $157 | ESW-B9D15A-R24 | $210 | |
| | | | | | | 208-240 | ESW-B9V24E-R24 | | ESW-B9V24A-R24 | | |
| | | | | | | 480 | ESW-B9D39E-R24 | | ESW-B9D39A-R24 | | |
| 1/2 | 3/4 | 1-1/2 | 2 | M04 | 1.8 - 2.8 | 120 | ESW-B9D15E-R25 | $157 | ESW-B9D15A-R25 | $210 | |
| | | | | | | 208-240 | ESW-B9V24E-R25 | | ESW-B9V24A-R25 | | |
| | | | | | | 480 | ESW-B9D39E-R25 | | ESW-B9D39A-R25 | | |
| 1 | 1 | 2 | 3 | M04 | 2.8 - 4.0 | 120 | ESW-B9D15E-R26 | $157 | ESW-B9D15A-R26 | $210 | |
| | | | | | | 208-240 | ESW-B9V24E-R26 | | ESW-B9V24A-R26 | | |
| | | | | | | 480 | ESW-B9D39-R26 | | ESW-B9D39A-R26 | | |
| 1-1/2 | 1-1/2 | 3 | 5 | M04 | 4.0 -6.3 | 120 | ESW-B9D15E-R27 | $157 | ESW-B9D15A-R27 | $210 | |
| | | | | | | 208-240 | ESW-B9V24E-R27 | | ESW-B9V24A-R27 | | |
| | | | | | | 480 | ESW-B9D39E-R27 | | ESW-B9D39A-R27 | | |
| 2 | 2 | 5 | - | M04 | 5.6 - 8.0 | 120 | ESW-B9D15E-R28 | $157 | ESW-B9D15A-R28 | $210 | |
| | | | | | | 208-240 | ESW-B9V24E-R28 | | ESW-B9V24A-R28 | | |
| | | | | | | 480 | ESW-B9D39E-R28 | | ESW-B9D39A-R28 | | |
| 3 | 3 | - | 7-1/2 | M04 | 7.0 - 10 | 120 | ESW-B9D15E-R29 | $157 | ESW-B9D15A-R29 | $210 | |
| | | | | | | 208-240 | ESW-B9V24E-R29 | | ESW-B9V24A-R29 | | |
| | | | | | | 480 | ESW-B9D39E-R29 | | ESW-B9D39A-R29 | | |
| - | - | 7-1/2 | 10 | M04 | 8.0 - 12.5 | 120 | ESW-B12D15E-R30 | $174 | ESW-B12D15A-R30 | $227 | |
| | | | | | | 208-240 | ESW-B12V24E-R30 | | ESW-B12V24A-R30 | | |
| | | | | | | 480 | ESW-B12D39E-R30 | | ESW-B12D39A-R30 | | |
| 5 | 5 | 10 | 15 | M04 | 11 - 17 | 120 | ESW-B18D15E-R32 | $188 | ESW-B18D15A-R32 | $241 | |
| | | | | | | 208-240 | ESW-B18V24E-R32 | | ESW-B18V24A-R32 | | |
| | | | | | | 480 | ESW-B18D39E-R32 | | ESW-B18D39A-R32 | | |
| 7-1/2 | 7-1/2 | 15 | - | M04 | 15 -23 | 120 | ESW-B25D15E-R33 | $223 | ESW-B25D15A-R33 | $276 | Z3 |
| | | | | | | 208-240 | ESW-B25V24E-R33 | | ESW-B25V24A-R33 | | |
| | | | | | | 480 | ESW-B25D39E-R33 | | ESW-B25D39A-R33 | | |
| 10 | 10 | 20 | 25 | M04 | 22 -32 | 120 | ESW-B32D15E-R34 | $245 | ESW-B32D15A-R34 | $298 | |
| | | | | | | 208-240 | ESW-B32D39E-R34 | | ESW-B32D39A-R34 | | |
| | | | | | | 480 | ESW-B32D39E-R34 | | ESW-B32V47A-R34 | | |
| 10 | 10 | 25 | 25 | M04 | 32-40 | 120 | ESW-B38D15E-R35 | $292 | ESW-B38D15A-R35 | $345 | |
| | | | | | | 208-240 | ESW-B38V24E-R35 | | ESW-B38V24A-R35 | | |
| | | | | | | 480 | ESW-B38D39E-R35 | | ESW-B38D39A-R35 | | |
| 10 | 15 | 30 | - | M06 | 32-40 | 120 | ESW-40V18E-R35 | $292 | ESW-40V18A-R35 | $345 | |
| | | | | | | 208-240 | ESW-40V24E-R35 | | ESW-40V24A-R35 | | |
| | | | | | | 480 | ESW-40V47E-R35 | | ESW-40V47A-R35 | | |
| 15 | 15 | 30 | 40 | M06 | 32 - 50 | 120 | ESW-50V18E-R38 | $350 | ESW-50V18A-R38 | $403 | |
| | | | | | | 208-240 | ESW-50V24E-R38 | | ESW-50V24A-R38 | | |
| | | | | | | 480 | ESW-50V47E-R38 | | ESW-50V47A-R38 | | |
| 20 | 20 | 40 | 50 | M06 | 40 - 57 | 120 | ESW-65V18E-R39 | $375 | ESW-65V18A-R39 | $428 | |
| | | | | | | 208-240 | ESW-65V24E-R39 | | ESW-65V24A-R39 | | |
| | | | | | | 480 | ESW-65V47E-R39 | | ESW-65V47A-R39 | | |
| - | 25 | 50 | 60 | M06 | 57 - 70 | 120 | ESW-80V18E-R41 | $421 | ESW-80V18A-R41 | $474 | |
| | | | | | | 208-240 | ESW-80V24E-R41 | | ESW-80V24A-R41 | | |
| | | | | | | 480 | ESW-80V47E-R41 | | ESW-80V47A-R41 | | |
| 25 | 30 | 60 | 75 | M08 | 63 - 80 | 120 | ESW-95V18E-R43 | $876 | ESW-95V18A-R43 | $929 | |
| | | | | | | 208-240 | ESW-95V24E-R43 | | ESW-95V24A-R43 | | |
| | | | | | | 480 | ESW-95V47E-R43 | | ESW-95V47A-R43 | | |
| 30 | - | 75 | - | M08 | 75 - 97 | 120 | ESW-105V18E-R44 | $975 | ESW-105V18A-R44 | $1,028 | |
| | | | | | | 208-240 | ESW-105V24E-R44 | | ESW-105V24A-R44 | | |
| | | | | | | 480 | ESW-105V47E-R44 | | ESW-105V47A-R44 | | |
| - | 40 | - | - | M08 | 90 - 112 | 120 | ESW-105V18E-R45 | $975 | ESW-105V18A-R45 | $1,028 | |
| | | | | | | 208-240 | ESW-105V24E-R45 | | ESW-105V24A-R45 | | |
| | | | | | | 480 | ESW-105V47E-R45 | | ESW-105V47A-R45 | | |

*Notes:*
*1) Please contact your local WEG representative for starters with other control voltage.*
*2) 3-phase starters can be wired for single-phase applications (see page 241 for single phase conversion diagram)*



Data is subject to change without notice.

## NEMA 1 Enclosure – Single Phase



### ESW Series - Non-combination Across The Line Starter - Non Reversing
### Single Phase - Enclosure Type-1

| Max. UL Horsepower | | Box | Setting Range | Coil Voltage | RESET only | | Start Stop Reset | | Multiplier All Models |
|---|---|---|---|---|---|---|---|---|---|
| 115V | 230V | | | | Catalog Number | List Price | Catalog Number | List Price | |
| _ | _ | M04 | 0.8-1.2 | 120 | ESWS-B9D15E-RM23 | $135 | ESWS-B9D15A-RM23 | $188 | |
| | | | | 208-240 | ESWS-B9V24E-RM23 | | ESWS-B9V24A-RM23 | | |
| _ | 1/10 | M04 | 1.2-1.8 | 120 | ESWS-B9D15E-RM24 | $135 | ESWS-B9D15A-RM24 | $188 | |
| | | | | 208-240 | ESWS-B9V24E-RM24 | | ESWS-B9V24A-RM24 | | |
| _ | 1/6 | M04 | 1.8-2.8 | 120 | ESWS-B9D15E-RM25 | $135 | ESWS-B9D15A-RM25 | $188 | |
| | | | | 208-240 | ESWS-B9V24E-RM25 | | ESWS-B9V24A-RM25 | | |
| 1/8 | 1/3 | M04 | 2.8 - 4.0 | 120 | ESWS-B9D15E-RM26 | $135 | ESWS-B9D15A-RM26 | $188 | |
| | | | | 208-240 | ESWS-B9V24E-RM26 | | ESWS-B9V24A-RM26 | | |
| 1/4 | 1/2 | M04 | 4.0 - 6.3 | 120 | ESWS-B9D15E-RM27 | $135 | ESWS-B9D15A-RM27 | $188 | |
| | | | | 208-240 | ESWS-B9V24E-RM27 | | ESWS-B9V24A-RM27 | | |
| 1/3 | 1 | M04 | 5.6 - 8.0 | 120 | ESWS-B9D15E-RM28 | $135 | ESWS-B9D15A-RM28 | $188 | |
| | | | | 208-240 | ESWS-B9V24E-RM28 | | ESWS-B9V24A-RM28 | | |
| 1/2 | 1-1/2 | M04 | 7.0 - 10 | 120 | ESWS-B9D15E-RM29 | $135 | ESWS-B9D15A-RM29 | $188 | |
| | | | | 208-240 | ESWS-B9V24E-RM29 | | ESWS-B9V24A-RM29 | | |
| 1/2 | 2 | M04 | 8.0 - 12.5 | 120 | ESWS-B12D15E-RM30 | $135 | ESWS-B12D15A-RM30 | $227 | Z3 |
| | | | | 208-240 | ESWS-B12V24E-RM30 | | ESWS-B12V24A-RM30 | | |
| 3/4 | 2 | M04 | 10-15 | 120 | ESWS-B18D15E-RM31 | $161 | ESWS-B18D15A-RM31 | $241 | |
| | | | | 208-240 | ESWS-B18V24E-RM31 | | ESWS-B18V24A-RM31 | | |
| 1 | 3 | M04 | 11 - 17 | 120 | ESWS-B18D15E-RM32 | $170 | ESWS-B18D15A-RM32 | $241 | |
| | | | | 208-240 | ESWS-B18V24E-RM32 | | ESWS-B18V24A-RM32 | | |
| 1-1/2 | 3 | M04 | 15 -23 | 120 | ESWS-B25D15E-RM33 | $180 | ESWS-B25D15A-RM33 | $276 | |
| | | | | 208-240 | ESWS-B25V24E-RM33 | | ESWS-B25V24A-RM33 | | |
| 2 | 5 | M04 | 22 -32 | 120 | ESWS-B32V18E-RM34 | $180 | ESWS-B32V18A-RM34 | $276 | |
| | | | | 208-240 | ESWS-B32V24E-RM34 | | ESWS-B32V24A-RM34 | | |
| 3 | 7-1/2 | M04 | 32-40 | 120 | ESWS-B38D15E-RM35 | $274 | ESWS-B38D15A-RM35 | $327 | |
| | | | | 208-240 | ESWS-B38V24E-RM35 | | ESWS-B38V24A-RM35 | | |
| 3 | 7-1/2 | M06 | 25 - 40 | 120 | ESWS-40V18E-RM35 | $274 | ESWS-40V18E-RM35 | $351 | |
| | | | | 208-240 | ESWS-40V24E-RM35 | | ESWS-40V24E-RM35 | | |
| 3 | 10 | M06 | 32 - 50 | 120 | ESWS-50V18E-RM38 | $330 | ESWS-50V18E-RM38 | $423 | |
| | | | | 208-240 | ESWS-50V24E-RM38 | | ESWS-50V24E-RM38 | | |

*Notes: 1) OLR must be set a5 115% of motor FLA*
*ESWS - Single-phase version - assembled with 2 pole contactor and 2 pole overload relays*

# Enclosed Starters

## ESWS

### Field Mod Kits for ESW/ESWS Series

| Accessories | | | | | |
|---|---|---|---|---|---|
| Description | Structure | | Catalog Number | List Price | Multiplier |
| | Top | Bottom | | | |
| No Pilot Device Metal Brackets - 2 x 22mm holes w/ plugs | PLUG | PLUG | KESWPP | $25 | Z3 |
| Start / Stop Pushbutton | PLUG | START - STOP | KESWPS | $80 | |
| Hand-Off-Auto Selector Switch | HAND - OFF - AUTO | PLUG | KESWHP | $80 | |
| Off-On Selector Switch | OFF - ON | PLUG | KESWFP | $80 | |
| Hand-Off-Auto Selector Switch and Start / Stop Pushbuttons | HAND - OFF - AUTO | START - STOP | KESWHS | $130 | |
| E-stop | PLUG | E-STOP | KESWPE | $80 | |


KESWPP


KESWPS


KESWHP


KESWFP

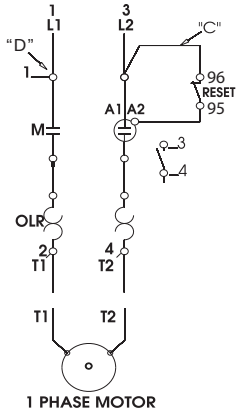

KESWHS



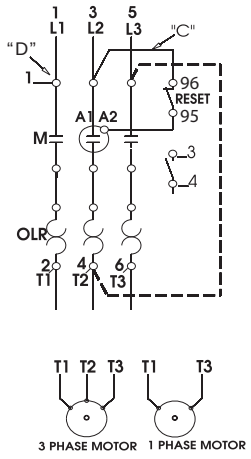
Data is subject to change without notice.

## WIRING DIAGRAM

### Single-phase Starter




### Three-phase Starter



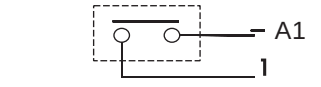

Conversion to single-phase, add jumper wire from L3 to T2 (follow dotted line connection above)

## Separate Control

FOR SEPARATE CONTROL, REMOVE WIRES "C" AND "D" IF SUPPLIED AND CONNECT SEPARATE CONTROL LINES TO TERMINAL Nº 96 ON THE OVERLOAD RELAY AND TO TERMINAL Nº _3 ON THE AUX. CONTACT BLOCK (FOR 3 WIRE CONTROL) OR TO THE CONTACTOR COIL Nº A1 (FOR 2 WIRE CONTROL).

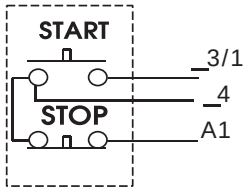
## Pilot Devices

### 2 Wire Control

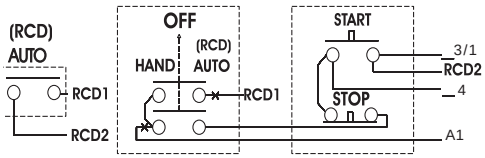



NOT FOR USE WITH AUTO RESET OL RELAYS.

### 3 Wire Control




### Hand-Off Auto Wire Control (For ESW Series Only)




## DIMENSIONS

| Provision for cable gland fitting | Standard | | | |
|---|---|---|---|---|
| | Top | Bottom | Side | Back |
| Box M04 | 2x (½" or ¾") | 2x (½" or ¾") | 4x (½" or ¾") | 2x (½" or ¾") |
| | 1x (¾" or 1") | 1x (¾" or 1") | - | - |
| Box M06 | 1x (½" or ¾") | 1x (½" or ¾") | 3x (½" or ¾") | - |
| | 2x (1" or 1-1/4" ) | 2x (1" or 1-1/4" ) | 4x (1" or 1-1/4" ) | - |
| Box M08 | 1x (1") | 1x (1") | 1x (1") | 1x (1") |
| | 1x (1-1/2") | 1x (1-1/2") | 4x (¾") | - |

| Dimensions (approx. inches) | | | | |
|---|---|---|---|---|
| Enclosed Starters | Enclosure Size | | | |
| | BOX | H | W | D |
| ESW(S) 9, 12, 18, 25, 32 | M04 | 9.5 | 5.5 | 5.0 |
| ESW(S) 40, 50, 65, 80 | M06 | 13.0 | 7.5 | 5.6 |
| ESW 95, 105 | M08 | 17.8 | 9.5 | 6.7 |



# Enclosed Starters

## PESW

### PESW Series - Non-combination Across the line starter
### Three-Phase Enclosure Type - 4X



| Max. UL Horsepower | | | | Box | Setting Range | Coil Voltage | RESET only | | START/STOP + RESET | | Multiplier |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 200V | 230V | 460V | 575V | | | | Catalog Number | List Price | Catalog Number | List Price | |
| - | 1/3 | 1/2 | - | 04 | 0.8 - 1.2 | 120 | PESW-B9D15EX-R57 | $157 | PESW-B9D15AX-R57 | $210 | Z3 |
| | | | | | | 208-240 | PESW-B9V24EX-R57 | | PESW-B9V24AX-R57 | | |
| | | | | | | 480 | PESW-B9D39EX-R57 | | PESW-B9D39AX-R57 | | |
| - | - | 1 | 1 | 04 | 1.2 - 1.8 | 120 | PESW-B9D15EX-R58 | $157 | PESW-B9D15AX-R58 | $210 | |
| | | | | | | 208-240 | PESW-B9V24EX-R58 | | PESW-B9V24AX-R58 | | |
| | | | | | | 480 | PESW-B9D39EX-R58 | | PESW-B9D39AX-R58 | | |
| 1/2 | 3/4 | 1-1/2 | 2 | 04 | 1.8 - 2.8 | 120 | PESW-B9D15EX-R59 | $157 | PESW-B9V18AX-R59 | $210 | |
| | | | | | | 208-240 | PESW-B9V24EX-R59 | | PESW-B9V24AX-R59 | | |
| | | | | | | 480 | PESW-B9D39EX-R59 | | PESW-B9D39AX-R59 | | |
| 1 | 1 | 2 | 3 | 04 | 2.8 - 4.0 | 120 | PESW-B9D15EX-R60 | $157 | PESW-B9D15AX-R60 | $210 | |
| | | | | | | 208-240 | PESW-B9V24EX-R60 | | PESW-B9V24AX-R60 | | |
| | | | | | | 480 | PESW-B9D39EX-R60 | | PESW-B9D39AX-R60 | | |
| 1-1/2 | 1-1/2 | 3 | 5 | 04 | 4.0 - 6.3 | 120 | PESW-B9D15EX-R27 | $157 | PESW-B9D15AX-R61 | $210 | |
| | | | | | | 208-240 | PESW-B9V24EX-R61 | | PESW-B9V24AX-R61 | | |
| | | | | | | 480 | PESW-B9D39EX-R61 | | PESW-B9D39AX-R61 | | |
| 2 | 2 | 5 | - | 04 | 5.6 - 8.0 | 120 | PESW-B9D15EX-R62 | $157 | PESW-B9D15AX-R62 | $210 | |
| | | | | | | 208-240 | PESW-B9V24EX-R62 | | PESW-B9V24AX-R62 | | |
| | | | | | | 480 | PESW-B9D39EX-R62 | | PESW-B9D39AX-R62 | | |
| 3 | 3 | - | 7-1/2 | 04 | 7.0 - 10 | 120 | PESW-B9D15EX-R63 | $157 | PESW-B9D15AX-R63 | $210 | |
| | | | | | | 208-240 | PESW-B9V24EX-R63 | | PESW-B9V24AX-R63 | | |
| | | | | | | 480 | PESW-B9D39EX-R63 | | PESW-B9D39AX-R63 | | |
| - | - | 7-1/2 | 10 | 04 | 8.0 - 12.5 | 120 | PESW-B12D15EX-R64 | $174 | PESW-B12D15AX-R64 | $227 | |
| | | | | | | 208-240 | PESW-B12V24EX-R64 | | PESW-B12V24EX-R64 | | |
| | | | | | | 480 | PESW-B12D39EX-R64 | | PESW-B12D39AX-R64 | | |
| 5 | 5 | 10 | 15 | 04 | 11 - 17 | 120 | PESW-B18D15EX-R66 | $188 | PESW-B18D15AX-R66 | $241 | |
| | | | | | | 208-240 | PESW-B18V24EX-R66 | | PESW-B18V24AX-R66 | | |
| | | | | | | 480 | PESW-B18D39EX-R66 | | PESW-B18D39AX-R66 | | |
| 7-1/2 | 7-1/2 | 15 | - | 04 | 15 - 23 | 120 | PESW-B25D15EX-R67 | $223 | PESW-B25D15AX-R67 | $276 | |
| | | | | | | 208-240 | PESW-B25V24EX-R67 | | PESW-B25V24AX-R67 | | |
| | | | | | | 480 | PESW-B25D39EX-R67 | | PESW-B25D39AX-R67 | | |
| 10 | 10 | 20 | 25 | 06 | 22 - 32 | 120 | PESW-B32D15EX-R68 | $262 | PESW-B32D15AX-R68 | $298 | |
| | | | | | | 208-240 | PESW-B32V24EX-R68 | | PESW-B32V24AX-R68 | | |
| | | | | | | 480 | PESW-B38D39EX-R68 | | PESW-B32D39AX-R68 | | |
| 10 | 10 | 25 | 25 | 06 | 25-40 | 120 | PESW-B38D15EX-R69 | $321 | PESW-B38D15AX-R69 | $345 | |
| | | | | | | 208-240 | PESW-B38V24EX-R69 | | PESW-B38V24AX-R69 | | |
| | | | | | | 480 | PESW-B38D39EXR69 | | PESW-B38D39AX-R69 | | |

*continued on next page*



Data is subject to change without notice.

## PESW Series - Non-combination Across the line starter - continued

### Three-Phase Enclosure Type - 4X

| Max. UL Horsepower | | | | Box | Setting Range | Coil Voltage | RESET only | | START/STOP + RESET | | Multiplier |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 200V | 230V | 460V | 575V | | | | Catalog Number | List Price | Catalog Number | List Price | |
| 10 | 15 | 30 | - | 06 | 25 - 40 | 120 | PESW-40V18EX-R35 | $321 | PESW-40V18AX-R35 | $345 | Z3 |
| | | | | | | 208-240 | PESW-40V24EX-R35 | | PESW-40V24AX-R35 | | |
| | | | | | | 480 | PESW-40V47EX-R35 | | PESW-40V47AX-R35 | | |
| 15 | 15 | 30 | 40 | 08 | 32 - 50 | 120 | PESW-50V18EX-R38 | $564 | PESW-50V18AX-R38 | $579 | |
| | | | | | | 208-240 | PESW-50V24EX-R38 | | PESW-50V24AX-R38 | | |
| | | | | | | 480 | PESW-50V47EX-R38 | | PESW-50V47AX-R38 | | |
| 20 | 20 | 40 | 50 | 08 | 40 - 57 | 120 | PESW-65V18EX-R39 | $589 | PESW-65V18AX-R39 | $604 | |
| | | | | | | 208-240 | PESW-65V24EX-R39 | | PESW-65V24AX-R39 | | |
| | | | | | | 480 | PESW-65V47EX-R39 | | PESW-65V47AX-R39 | | |
| - | 25 | 50 | 60 | 08 | 57 -70 | 120 | PESW-80V18EX-R41 | $635 | PESW-80V18AX-R41 | $650 | |
| | | | | | | 208-240 | PESW-80V24EX-R41 | | PESW-80V24AX-R41 | | |
| | | | | | | 480 | PESW-80V47EX-R41 | | PESW-80V47AX-R41 | | |
| 25 | 30 | 60 | 75 | 10 | 63 - 80 | 120 | PESW-95V18EX-R43 | $1,085 | PESW-95V18AX-R43 | $1,100 | |
| | | | | | | 208-240 | PESW-95V24EX-R43 | | PESW-95V24AX-R43 | | |
| | | | | | | 480 | PESW-95V47EX-R43 | | PESW-95V47AX-R43 | | |
| 30 | - | 75 | - | 10 | 75 - 97 | 120 | PESW-105V18EX-R44 | $1,184 | PESW-105V18AX-R44 | $1,199 | |
| | | | | | | 480 | PESW-105V47EX-R44 | | PESW-105V47AX-R44 | | |
| - | 40 | - | - | 10 | 90 -112 | 120 | PESW-105V18EX-R45 | $1,184 | PESW-105V18AX-R45 | $1,199 | |
| | | | | | | 208-240 | PESW-105V24EX-R45 | | PESW-105V24AX-R45 | | |

*Notes:*
*1) OLR must be set @115% of FLA*
*2) 3-phase starters with 120V coil are wired for separate control*
*3) 3-phase starters can be wired for single-phase applications (see diagram)*

# Enclosed Starters

## PESW

**PESW Series - Non-combination Across the line starter**

**Single Phase- Enclosure Type-4X**



| Max. UL Horsepower | | Box | Setting Range | Coil Voltage | RESET only | | START/STOP + RESET | | Multiplier |
|---|---|---|---|---|---|---|---|---|---|
| 115V | 230V | | | | Catalog Number | List Price | Catalog Number | List Price | |
| - | 1/2 | 04 | 2.8 - 4.0 | 120 | PESWS-B9D15EX-RM60 | $140 | PESWS-B9D15AX-RM60 | | |
| | | | | 208-240 | PESWS-B9V24EX-RM60 | | PESWS-B9V24AX-RM60 | $155 | |
| - | 3/4 | 04 | 4.0 - 6.3 | 120 | PESWS-B9D15EX-RM61 | $140 | PESWS-B9D15AX-RM61 | $155 | |
| | | | | 208-240 | PESWS-B9V24EX-RM61 | | PESWS-B9V24AX-RM61 | | |
| 1/3 | 1 | 04 | 5.6 - 8.0 | 120 | PESWS-B9D15EX-RM62 | $140 | PESWS-B9D15AX-RM62 | $155 | |
| | | | | 208-240 | PESWS-B9V24EX-RM62 | | PESWS-B9V24AX-RM62 | | |
| 1/2 | - | 04 | 7.0 - 10 | 120 | PESWS-B9D15EX-RM63 | $140 | PESWS-B9D15AX-RM63 | $155 | |
| | | | | 208-240 | PESWS-B9V24EX-RM63 | | PESWS-B9V24AX-RM63 | | |
| - | 1-1/2 | 04 | 8.0 - 12.5 | 120 | PESWS-B9D15EX-RM64 | $140 | PESWS-B9D15AX-RM64 | $155 | |
| | | | | 208-240 | PESWS-B9V24EX-RM64 | | PESWS-B9V24AX-RM64 | | |
| 3/4 | 2 | 04 | 10 - 15 | 120 | PESWS-B12D15EX-RM65 | $161 | PESWS-B12D15AX-RM65 | $170 | |
| | | | | 208-240 | PESWS-B12V24EX-RM65 | | PESWS-B12V24AX-RM65 | | |
| 1 | 3 | 04 | 11 - 17 | 120 | PESWS-B18D15EX-RM66 | $170 | PESWS-B18D15AX-RM66 | $182 | Z3 |
| | | | | 208-240 | PESWS-B18V24EX-RM66 | | PESWS-B18V24AX-RM66 | | |
| 1-1/2 | 5 | 04 | 15 - 23 | 120 | PESWS-B25D15EX-RM67 | $180 | PESWS-B25D15AX-RM67 | $195 | |
| | | | | 208-240 | PESWS-B25V24EX-RM67 | | PESWS-B25V24AX-RM67 | | |
| 2 | 5 | 04 | 22 - 32 | 120 | PESWS-B32D15EX-RM68 | $180 | PESWS-B32D15AX-RM68 | $195 | |
| | | | | 208-240 | PESWS-B32V24EX-RM68 | | PESWS-B32V24AX-RM68 | | |
| 3 | 7-1/2 | 04 | 32-40 | 120 | PESWS-B38D15EX-RM69 | $274 | PESWS-B38D15AX-RM69 | $300 | |
| | | | | 208-240 | PESWS-B38V24EX-RM69 | | PESWS-B38V24AX-RM69 | | |
| 3 | 7-1/2 | 06 | 25 - 40 | 120 | PESWS-40V18EX-RM35 | $274 | PESWS-40V18AX-RM35 | $300 | |
| | | | | 208-240 | PESWS-40V24EX-RM35 | | PESWS-40V24AX-RM35 | | |
| 3 | 10 | 08 | 32 - 50 | 120 | PESWS-50V18EX-RM38 | $430 | PESWS-50V18AX-RM38 | $440 | |
| | | | | 208-240 | PESWS-50V24EX-RM38 | | PESWS-50V24AX-RM38 | | |

*Note: OLR must be set at 115% of motor FLA*

## Accessories - Mounting in Control Stations

### Contact Block[2)]

Replacement Base Mount Contact Blocks for PESWS(B) 9-38



0.015 kg[3)]

| Description | Contacts | Diagram | Standard packing | Catalog Number | Price | Multiplier |
|---|---|---|---|---|---|---|
| Single contact blocks to mounting in control stations or DIN rail 35 mm | 1NO |  | 1 piece | BC10B-CSW | $5.00 | Z5 |
| | 1NC |  | 1 piece | BC01B-CSW | $5.00 | |

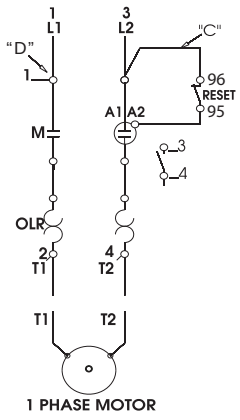
*Notes: 1) Compatible with all single of the CSW line pushbuttons, selector switches and pilot lights. To avoid interferences and ensure the performance when use a mushroom pushbutton beside another pushbutton, WEG recommend maintaining an empty hole between the pushbuttons. To close the hole use the ATR accessory;*
*2) Blocks specific for mounting in base or PBW plastic control stations or DIN rail 35mm;*
*3) Unitary weight.*



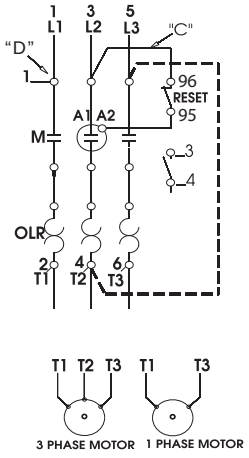
Data is subject to change without notice.

## WIRING DIAGRAM

### Single-phase Starter




### Three-phase Starter



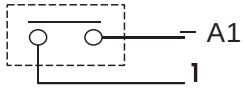

Conversion to single-phase, add jumper wire from L3 to T2 (follow dotted line connection above)

### Separate Control

FOR SEPARATE CONTROL, REMOVE WIRES "C" AND "D" IF SUPPLIED AND CONNECT SEPARATE CONTROL LINES TO TERMINAL Nº 96 ON THE OVERLOAD RELAY AND TO TERMINAL Nº _3 ON THE AUX. CONTACT BLOCK (FOR 3 WIRE CONTROL) OR TO THE CONTACTOR COIL Nº A1 (FOR 2 WIRE CONTROL).

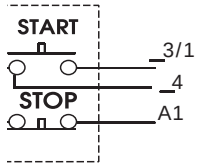
### Pilot Devices

#### 2 Wire Control




NOT FOR USE WITH AUTO RESET OL RELAYS.

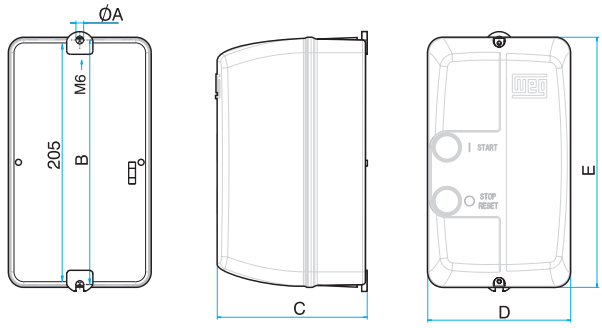
#### 3 Wire Control




## DIMENSIONS

| SIZE 04 mm(in) | SIZE 06 mm (in) | SIZE 08 mm (in) | SIZE 10 mm (in) |
|---|---|---|---|
| øA = 5.5 (0.2165) | øA = 6.5 (0.3) | øA = 6.0 (0.2) | øA = 7.0 (0.3) |
| B = 219.0 (8.622) | B = 205 (8.1) | B = 275 (10.8) | B = 355 (14.0) |
| C = 112 (4.4331) | C = 126 (5.0) | C = 143 (5.6) | C = 167 (6.6) |
| D = 114.0 (4.4882) | D = 120 (4.7) | D = 180 (7.1) | D = 250 (9.9) |
| E = 229.5 ( 9.0354) | E = 210 (8.3) | E = 280 (11.0) | E = 360 (14.2) |

| Provision for cable gland fitting | Standard | | |
|---|---|---|---|
| | Top | Bottom | Back |
| Size 04 | 2 x 1/2" - 3/4" PG13.5 | 2 x 1/2" - 3/4" PG13.5 | 4 X 1/2" PG13.5 |
| Size 06 | | 2 x 1/2" and 3/4" | ø22mm (0.9in) |
| Size 08 | 2 x 3/4" and 1" | 2 x 3/4" and 1" | - |
| Size 10 | 2 x 3/4" and 1" | 2 x 3/4" and 1" | - |
| | 1 x 1" and 1 1/4" | 1 x 1" and 1 1/4" | - |




For wall mounting on starters size 08 and 10, four screws with the following characteristics should be used:
- Pan, dome or rounded shaped head;
- Starter size 08:
  - Screws size 1/4 (or M6 – ISO Standard);
  - Dimensions: diameter thread shall be maximum 1/4 in and diameter head shall be maximum 15/64 in.
- Starter size 10:
  - Screws size 12 (or M5 – ISO Standard);
  - Dimensions: diameter thread shall be maximum 0.236 in and diameter head shall be maximum 0.394 in.

# Enclosed Starters

## Combination Starters







WEG's full voltage non-reversing combination starters represent a competitive alternative to the traditional NEMA starters by offering:

- reduced overall dimensions, yet providing reasonable internal wiring space
- rotary through-the-door disconnect instead of the traditional flange operator
- UL/CSA approved performance in more compact components.

Two series are available off the shelf:

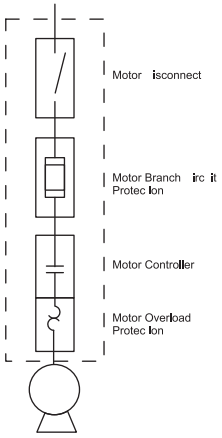
- MCCB disconnect – ESWC Series
- Motor protector – ESWE & ESWF Series

## Combination Starter Basics

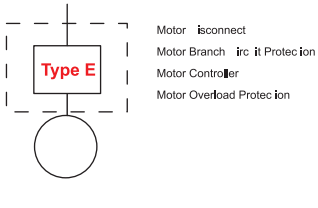
Combination starters are the most common type of packaged motor controllers. They are called combination because of their construction and combined functions required by the US National Electric Code (NEC): Motor Disconnect, Motor Branch Circuit Protection, Motor Controller and Motor Overload Protection. UL & CSA currently recognizes six different constructions of combination starters that meet the requirements of a motor branch circuit.

Constructions Types A through D are traditional starters that use either a listed disconnect switch and fuses or a listed circuit breaker as the disconnect means and for short circuit protection. Each type uses a separate UL508 listed motor controller and overload relay. Recently revisions on UL508 introduced the Type E and Type F starters.

| UL Combination Starter Type | Device Used for Component Function | | | |
|---|---|---|---|---|
| | Disconnected | Branch Circuit Protection | Motor Controller | Motor OL Relay |
| A | UL 98 Manual Disconnect | UL 248 Fuses | UL 508 Magnetic or Solid State Controller | UL 508 Motor Overload Relay |
| B | | UL 508 Motor Short Circuit Protector | | |
| C | UL 489 Inverse Time Circuit Breaker | | | |
| D | UL 489 Instantaneous Trip Circuit Breaker | | | |
| E | UL 508 Self-Protected Combination Controller | | | |
| F | UL 508 Manual Self-Protected Combination Controller | | UL 508 Magnetic or Solid State Controller | UL 508 Manual Self-Protected Combination Controller |




Types A through D com ina ion starters




Type E and F com ina ion starters

Type E starter is a self-protected combination motor controller that combines in a single device all the required functions of a combination starter eliminating any additional requirements for upstream fuses or circuit breaker. Type F starter consists of a listed manual Type E combined with a UL508 listed contactor.



Data is subject to change without notice.

## Combination Type-C Across The Line Starter

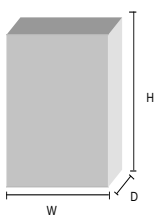
**THREE-PHASE without Control Power Transformer**

- Branch Disconnect: Rotary through-the-door Handle
- Short-Circuit Protection: Molded Case Circuit Breaker
- Motor Control: Magnetic Contactor
- Overload Protection: Thermal Overload Relay
- Control Devices: Hand-Off-Auto switch, Start- Stop and reset pushbutton
- Other enclosure options available on request

### ESWC Series - Combination Type-C Across The Line Starter with no CPT

| Max. 3-ph Hp Motors | | | | Overload Setting Range (A) | Control Voltage (1) (Vac) | Metallic Enclosure Type 4/12 | | | Multiplier |
|---|---|---|---|---|---|---|---|---|---|
| 200V | 230V | 460V | 575V | | | Catalog Number | List Price | Box Size | |
| 1-1/2 | 1 1/2 | 3 | 5 | 4 - 6.3 | 120 | ESWC-25V18N4-R27 | $1,635 | C-1 | |
| | | | | | 208-240 | ESWC-25V24N4-R27 | | | |
| | | | | | 480 | ESWC-25V47N4-R27 | | | |
| 2 | 2 | 5 | 5 | 5.6 - 8 | 120 | ESWC-25V18N4-R28 | $1,635 | C-1 | |
| | | | | | 208-240 | ESWC-25V24N4-R28 | | | |
| | | | | | 480 | ESWC-25V47N4-R28 | | | |
| 3 | 3 | 7 1/2 | 7.5 | 8 - 12.5 | 120 | ESWC-25V18N4-R30 | $1,635 | C-1 | |
| | | | | | 208-240 | ESWC-25V24N4-R30 | | | |
| | | | | | 480 | ESWC-25V47N4-R30 | | | |
| 5 | 5 | 10 | 10 | 11 - 17 | 120 | ESWC-25V18N4-R32 | $1,680 | C-1 | |
| | | | | | 208-240 | ESWC-25V24N4-R32 | | | |
| | | | | | 480 | ESWC-25V47N4-R32 | | | |
| 71/2 | 7 1/2 | 15 | 15 | 15 - 23 | 120 | ESWC-25V18N4-R33 | $1,680 | C-1 | |
| | | | | | 208-240 | ESWC-25V24N4-R33 | | | |
| | | | | | 480 | ESWC-25V47N4-R33 | | | |
| 10 | 10 | 20 | 25 | 22 - 32 | 120 | ESWC-40V18N4-R34 | $1,765 | C-1 | |
| | | | | | 208-240 | ESWC-40V24N4-R34 | | | |
| | | | | | 480 | ESWC-40V47N4-R34 | | | |
| 10 | 15 | 25 | 25 | 25 - 40 | 120 | ESWC-40V18N4-R35 | $1,850 | C-1 | |
| | | | | | 208-240 | ESWC-40V24N4-R35 | | | |
| | | | | | 480 | ESWC-40V47N4-R35 | | | |
| 10 | 15 | 30 | - | 32 - 50 | 120 | ESWC-40V18N4-R37 | $1,980 | C-1 | |
| | | | | | 208-240 | ESWC-40V24N4-R37 | | | |
| | | | | | 480 | ESWC-40V47N4-R37 | | | |
| 20 | 20 | 40 | 50 | 40 - 57 | 120 | ESWC-65V18N4-R39 | $2,070 | C-1 | Z3 |
| | | | | | 208-240 | ESWC-65V24N4-R39 | | | |
| | | | | | 480 | ESWC-65V47N4-R39 | | | |
| 20 | 20 | 50 | - | 57 - 70 | 120 | ESWC-65V18N4-R41 | $2,160 | C-1 | |
| | | | | | 208-240 | ESWC-65V24N4-R41 | | | |
| | | | | | 480 | ESWC-65V47N4-R41 | | | |
| 25 | 30 | 60 | 60 | 63 - 80 | 120 | ESWC-105V18N4-R43 | $2,765 | C-1 | |
| | | | | | 208-240 | ESWC-105V24N4-R43 | | | |
| | | | | | 480 | ESWC-105V47N4-R43 | | | |
| 30 | 40 | 75 | 75 | 75 - 97 | 120 | ESWC-105V18N4-R44 | $2,800 | C-1 | |
| | | | | | 208-240 | ESWC-105V24N4-R44 | | | |
| | | | | | 480 | ESWC-105V47N4-R44 | | | |
| 40 | 60 | 100 | 125 | 100 - 150 | 120 | ESWC-150V18N4-R48 | $5,210 | C-2 | |
| | | | | | 208-240 | ESWC-150V24N4-R48 | | | |
| | | | | | 480 | ESWC-150V47N4-R48 | | | |
| 50 | 60 | 125 | 150 | 140 - 215 | 120 | ESWC-150V18N4-R49 | $5,290 | C-2 | |
| | | | | | 208-240 | ESWC-150V24N4-R49 | | | |
| | | | | | 480 | ESWC-150V47N4-R49 | | | |
| 60 | 75 | 150 | 200 | 140 - 215 | 120 | ESWC-180V18N4-R49 | $5,530 | C-2 | |
| | | | | | 208-240 | ESWC-180V24N4-R49 | | | |
| | | | | | 480 | ESWC-180V47N4-R49 | | | |
| 75 | 100 | 200 | 250 | 200 - 310 | 120 | ESWC-300V18N4-R50 | $8,670 | C-3 | |
| | | | | | 208-240 | ESWC-300V24N4-R50 | | | |
| | | | | | 480 | ESWC-300V47N4-R50 | | | |
| 100 | 125 | 250 | 300 | 275 - 420 | 120 | ESWC-300V18N4-R51 | $9,250 | C-3 | |
| | | | | | 208-240 | ESWC-300V24N4-R51 | | | |
| | | | | | 480 | ESWC-300V47N4-R51 | | | |

*Notes:*
*(1) Please contact your local WEG representative for starters with 575V control voltage.*
*(2) 3-phase starters with 120V coil are pre-wired for separate control*
*(3) 3-phase starters can be wired for single-phase applications*




| Dimensions (inches) | | | |
|---|---|---|---|
| Box Size | Enclosure Size | | |
| | H | W | D |
| C-1 | 24 | 16 | 8 |
| C-2 | 32 | 24 | 12 |
| C-3 | 40 | 32 | 12 |

# Enclosed Starters

## ESWC

### ESWC Series - Combination Type-C Across The Line Starter

**THREE-PHASE with Control Power Transformer**

- Branch Disconnect: Rotary through-the-door Handle
- Short-Circuit Protection: Molded Case Circuit Breaker
- Motor Control: Magnetic Contactor
- Overload Protection: Thermal Overload Relay
- Control Devices: Hand-Off-Auto switch, Start-Stop and reset pushbutton
- Other enclosure options available on request

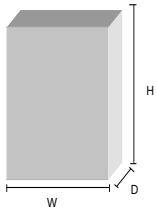
### ESWC Series - Combination Type-C Across The Line Starter with CPT

| Max. 3-ph Hp Motors | | | | Overload Setting Range (A) | Control Voltage (prim. / sec.) (Vac) | Metallic Enclosure Type 4/12 | | | Multiplier |
|---|---|---|---|---|---|---|---|---|---|
| 200V | 230V | 460V | 575V | | | Catalog Number | List Price | Box Size | |
| 1-1/2 | 1 1/2 | 3 | 5 | 4 - 6.3 | 240 / 120 | ESWC-25T02N4-R27 | $1,835 | C-1 | Z3 |
| | | | | | 480 / 120 | ESWC-25T04N4-R27 | | | |
| | | | | | 575 / 120 | ESWC-25T05N4-R27 | | | |
| 2 | 2 | 5 | 5 | 5.6 - 8 | 240 / 120 | ESWC-25T02N4-R28 | $1,835 | C-1 | |
| | | | | | 480 / 120 | ESWC-25T04N4-R28 | | | |
| | | | | | 575 / 120 | ESWC-25T05N4-R28 | | | |
| 3 | 3 | 7 1/2 | 7.5 | 8 - 12.5 | 240 / 120 | ESWC-25T02N4-R30 | $1,835 | C-1 | |
| | | | | | 480 / 120 | ESWC-25T04N4-R30 | | | |
| | | | | | 575 / 120 | ESWC-25T05N4-R30 | | | |
| 5 | 5 | 10 | 10 | 11 - 17 | 240 / 120 | ESWC-25T02N4-R32 | $1,880 | C-1 | |
| | | | | | 480 / 120 | ESWC-25T04N4-R32 | | | |
| | | | | | 575 / 120 | ESWC-25T05N4-R32 | | | |
| 71/2 | 7 1/2 | 15 | 15 | 15 - 23 | 240 / 120 | ESWC-25T02N4-R33 | $1,880 | C-1 | |
| | | | | | 480 / 120 | ESWC-25T04N4-R33 | | | |
| | | | | | 575 / 120 | ESWC-25T05N4-R33 | | | |
| 10 | 10 | 20 | 25 | 22 - 32 | 240 / 120 | ESWC-40T02N4-R34 | $1,965 | C-1 | |
| | | | | | 480 / 120 | ESWC-40T04N4-R34 | | | |
| | | | | | 575 / 120 | ESWC-40T05N4-R34 | | | |
| 10 | 15 | 25 | 25 | 25 - 40 | 240 / 120 | ESWC-40T02N4-R35 | $2,050 | C-1 | |
| | | | | | 480 / 120 | ESWC-40T04N4-R35 | | | |
| | | | | | 575 / 120 | ESWC-40T05N4-R35 | | | |
| 10 | 15 | 30 | - | 32 - 50 | 240 / 120 | ESWC-40T02N4-R37 | $2,180 | C-1 | |
| | | | | | 480 / 120 | ESWC-40T04N4-R37 | | | |
| | | | | | 575 / 120 | ESWC-40T05N4-R37 | | | |
| 20 | 20 | 40 | 50 | 40 -57 | 240 / 120 | ESWC-65T02N4-R39 | $2,320 | C-1 | |
| | | | | | 480 / 120 | ESWC-65T04N4-R39 | | | |
| | | | | | 575 / 120 | ESWC-65T05N4-R39 | | | |
| 20 | 20 | 50 | - | 57 - 70 | 240 / 120 | ESWC-65T02N4-R41 | $2,410 | C-1 | |
| | | | | | 480 / 120 | ESWC-65T04N4-R41 | | | |
| | | | | | 575 / 120 | ESWC-65T05N4-R41 | | | |
| 25 | 30 | 60 | 60 | 63 - 80 | 240 / 120 | ESWC-105T02N4-R43 | $3,015 | C-1 | |
| | | | | | 480 / 120 | ESWC-105T04N4-R43 | | | |
| | | | | | 575 / 120 | ESWC-105T05N4-R43 | | | |
| 30 | – | 75 | 75 | 75 - 97 | 240 / 120 | ESWC-105T02N4-R44 | $3,050 | C-1 | |
| | | | | | 480 / 120 | ESWC-105T04N4-R44 | | | |
| | | | | | 575 / 120 | ESWC-105T05N4-R44 | | | |
| 40 | 60 | 100 | 125 | 100 -150 | 240 / 120 | ESWC-150T02N4-R48 | $5,610 | C-2 | |
| | | | | | 480 / 120 | ESWC-150T04N4-R48 | | | |
| | | | | | 575 / 120 | ESWC-150T05N4-R48 | | | |
| 50 | 60 | 125 | 150 | 140 - 215 | 240 / 120 | ESWC-150T02N4-R49 | $5,690 | C-2 | |
| | | | | | 480 / 120 | ESWC-150T04N4-R49 | | | |
| | | | | | 575 / 120 | ESWC-150T05N4-R49 | | | |
| 60 | 75 | 150 | 200 | 140 - 215 | 240 / 120 | ESWC-180T02N4-R49 | $5,930 | C-2 | |
| | | | | | 480 / 120 | ESWC-180T04N4-R49 | | | |
| | | | | | 575 / 120 | ESWC-180T05N4-R49 | | | |
| 75 | 100 | 200 | 250 | 200 - 310 | 240 / 120 | ESWC-300T02N4-R50 | $9,070 | C-3 | |
| | | | | | 480 / 120 | ESWC-300T04N4-R50 | | | |
| | | | | | 575 / 120 | ESWC-300T05N4-R50 | | | |
| 100 | 125 | 250 | 300 | 275 - 420 | 240 / 120 | ESWC-300T02N4-R51 | $9,650 | C-3 | |
| | | | | | 480 / 120 | ESWC-300T04N4-R51 | | | |
| | | | | | 575 / 120 | ESWC-300T05N4-R51 | | | |

*Notes:*

*(1) Please contact your local WE G representative for starters with other control voltage.*

*(2) 3-phase starters can be wired for single-phase applications*




| Dimensions (inches) | | | |
|---|---|---|---|
| Box Size | Enclosure Size | | |
| | H | W | D |
| C-1 | 24 | 16 | 8 |
| C-2 | 32 | 24 | 12 |
| C-3 | 40 | 32 | 12 |



Data is subject to change without notice.

## Combination Type-E Across The Line Starter

- Branch Disconnect: Rotary through-the-door Handle
- Short-Circuit Protection: Manual Motor Protection
- Motor Control: Magnetic Contactor
- Overload Protection: Manual Motor Protection
- Control Devices: Hand-Off-Auto switch, Start-Stop pushbutton, pilot lights
- Other enclosue options available upon request

## Three-Phase without CPT - Enclosure Type-4X

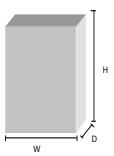
### Combination Type-E Across The Line Starter

| Max. 3-ph Hp Motors | | | | Overload Setting Range (A) | Control Voltage (1) (Vac) | Non-Metallic Enclosure Type 4X | | | Multiplier |
|---|---|---|---|---|---|---|---|---|---|
| 200V | 230V | 460V | 575V | | | Catalog Number | List Price | Box Size | |
| - | - | 1/2 | 1/2 | 0.63 - 1.0 | 120 | ESWE-9V18KX-D05 | $855 | E-1 | Z3 |
| | | | | | 480 | ESWE-9V47KX-D05 | | | |
| 1/4 | 1/3 | 3/4 | 1 | 1.0 - 1.6 | 120 | ESWE-9V18KX-D06 | $855 | E-1 | |
| | | | | | 208-240 | ESWE-9V24KX-D06 | | | |
| | | | | | 480 | ESWE-9V47KX-D06 | | | |
| 1/2 | 1/2 | 1-1/2 | 1-1/2 | 1.6 - 2.5 | 120 | ESWE-9V18KX-D07 | $855 | E-1 | |
| | | | | | 208-240 | ESWE-9V24KX-D07 | | | |
| | | | | | 480 | ESWE-9V47KX-D07 | | | |
| 3/4 | 1 | 2 | 3 | 2.5 - 4.0 | 120 | ESWE-9V18KX-D08 | $855 | E-1 | |
| | | | | | 208-240 | ESWE-9V24KX-D08 | | | |
| | | | | | 480 | ESWE-9V47KX-D08 | | | |
| 1-1/2 | 1-1/2 | 3 | 5 | 4.0 - 6.3 | 120 | ESWE-9V18KX-D09 | $855 | E-1 | |
| | | | | | 208-240 | ESWE-9V24KX-D09 | | | |
| | | | | | 480 | ESWE-9V47KX-D09 | | | |
| 3 | 3 | 5 | 7-1/2 | 6.3 - 10 | 120 | ESWE-9V18KX-D10 | $865 | E-1 | |
| | | | | | 208-240 | ESWE-9V24KX-D10 | | | |
| | | | | | 480 | ESWE-9V47KX-D10 | | | |
| 5 | 5 | 10 | 15 | 10 - 16 | 120 | ESWE-18V18KX-D11 | $875 | E-1 | |
| | | | | | 208-240 | ESWE-18V24KX-D11 | | | |
| | | | | | 480 | ESWE-18V47KX-D11 | | | |
| 7-1/12 | 7-1/2 | 15 | 15 | 16 - 20 | 120 | ESWE-25V18KX-D12 | $900 | E-1 | |
| | | | | | 208-240 | ESWE-25V24KX-D12 | | | |
| | | | | | 480 | ESWE-25V47KX-D12 | | | |
| 10 | 10 | 20 | 25 | 25 - 32 | 120 | ESWE-40V18KX-D14 | $990 | E-1 | |
| | | | | | 208-240 | ESWE-40V24KX-D14 | | | |
| | | | | | 480 | ESWE-40V47KX-D14 | | | |

## Three-Phase with CPT - Enclosure Type-4X

| Max. 3-ph Hp Motors | | | | Overload Setting Range (A) | Control Voltage (prim. / sec.) (Vac) | Non-Metallic Enclosure Type 4X | | | Multiplier |
|---|---|---|---|---|---|---|---|---|---|
| 200V | 230V | 460V | 575V | | | Catalog Number | List Price | Box Size | |
| - | - | 1/2 | 1/2 | 0.63 - 1.0 | 480 / 120 | ESWE-9T04KX-D05 | $1,140 | E-1 | Z3 |
| | | | | | 575 / 120 | ESWE-9T05KX-D05 | | | |
| 1/4 | 1/3 | 3/4 | 1 | 1.0 - 1.6 | 240 / 120 | ESWE-9T02KX-D06 | $1,140 | E-1 | |
| | | | | | 480 / 120 | ESWE-9T04KX-D06 | | | |
| | | | | | 575 / 120 | ESWE-9T05KX-D06 | | | |
| 1/2 | 1/2 | 1-1/2 | 1-1/2 | 1.6 - 2.5 | 240 / 120 | ESWE-9T02KX-D07 | $1,140 | E-1 | |
| | | | | | 480 / 120 | ESWE-9T04KX-D07 | | | |
| | | | | | 575 / 120 | ESWE-9T05KX-D07 | | | |
| 3/4 | 1 | 2 | 3 | 2.5 - 4.0 | 240 / 120 | ESWE-9T02KX-D08 | $1,140 | E-1 | |
| | | | | | 480 / 120 | ESWE-9T04KX-D08 | | | |
| | | | | | 575 / 120 | ESWE-9T05KX-D08 | | | |
| 1-1/2 | 1-1/2 | 3 | 5 | 4.0 - 6.3 | 240 / 120 | ESWE-9T02KX-D09 | $1,140 | E-1 | |
| | | | | | 480 / 120 | ESWE-9T04KX-D09 | | | |
| | | | | | 575 / 120 | ESWE-9T05KX-D09 | | | |
| 3 | 3 | 5 | 7-1/2 | 6.3 - 10 | 240 / 120 | ESWE-9T02KX-D10 | $1,140 | E-1 | |
| | | | | | 480 / 120 | ESWE-9T04KX-D10 | | | |
| | | | | | 575 / 120 | ESWE-9T05KX-D10 | | | |
| 5 | 5 | 10 | 15 | 10 - 16 | 240 / 120 | ESWE-18T02KX-D11 | $1,155 | E-1 | |
| | | | | | 480 / 120 | ESWE-18T04KX-D11 | | | |
| | | | | | 575 / 120 | ESWE-18T05KX-D11 | | | |
| 7-1/2 | 7-1/2 | 15 | 15 | 16 - 20 | 240 / 120 | ESWE-25T02KX-D12 | $1,175 | E-1 | |
| | | | | | 480 / 120 | ESWE-25T04KX-D12 | | | |
| | | | | | 575 / 120 | ESWE-25T05KX-D12 | | | |
| 10 | 10 | 20 | 25 | 25 - 32 | 240 / 120 | ESWE-40T02KX-D14 | $1,260 | E-1 | |
| | | | | | 480 / 120 | ESWE-40T04KX-D14 | | | |
| | | | | | 575 / 120 | ESWE-40T05KX-D14 | | | |

*Notes:*
*(1) Please contact your local WEG representative for starters with 575V control voltage.*
*(2) 3-phase starters with 120V coil are pre-wired for separate control*
*(3) 3-phase starters can be wired for single-phase applications*




| Dimensions (inches) | | | |
|---|---|---|---|
| Box Size | Enclosure Size | | |
| | H | W | D |
| E-1 | 14.2 | 9.9 | 6.6 |

# Enclosed Starters

## ESWF

### Combination Type-F Across The Line Starter

**THREE-PHASE without Control Power Transformer**

- Branch Disconnect: Rotary through-the-door Handle
- Short-Circuit Protection: Manual Motor Protection
- Motor Control: Magnetic Contactor
- Overload Protection: Manual Motor Protection
- Control Devices: Hand-Off-Auto switch, Start-Stop pushbutton
- Other enclosue options available upon request

### Combination Type-F Across The Line Starter with no CPT

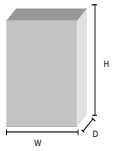
| Max. 3-ph Hp Motors | | | | Overload Setting Range (A) | Control Voltage (1) (Vac) | Metallic Enclosure Type 4/12 | | | Multiplier |
|---|---|---|---|---|---|---|---|---|---|
| 200V | 230V | 460V | 575V | | | Catalog Number | List Price | Box Size | |
| - | - | 1/2 | 1/2 | 0.63 - 1.0 | 120 | ESWF-9V18N4-D05 | $1,225 | F-1 | Z3 |
| | | | | | 480 | ESWF-9V47N4-D05 | | | |
| 1/4 | 1/3 | 3/4 | 1 | 1.0 - 1.6 | 120 | ESWF-9V18N4-D06 | $1,225 | F-1 | |
| | | | | | 208-240 | ESWF-9V24N4-D06 | | | |
| | | | | | 480 | ESWF-9V47N4-D06 | | | |
| 1/2 | 1/2 | 1-1/2 | 1-1/2 | 1.6 - 2.5 | 120 | ESWF-9V18N4-D07 | $1,225 | F-1 | |
| | | | | | 208-240 | ESWF-9V24N4-D07 | | | |
| | | | | | 480 | ESWF-9V47N4-D07 | | | |
| 3/4 | 1 | 2 | 3 | 2.5 - 4.0 | 120 | ESWF-9V18N4-D08 | $1,225 | F-1 | |
| | | | | | 208-240 | ESWF-9V24N4-D08 | | | |
| | | | | | 480 | ESWF-9V47N4-D08 | | | |
| 1-1/2 | 1-1/2 | 3 | 5 | 4.0 - 6.3 | 120 | ESWF-9V18N4-D09 | $1,225 | F-1 | |
| | | | | | 208-240 | ESWF-9V24N4-D09 | | | |
| | | | | | 480 | ESWF-9V47N4-D09 | | | |
| 3 | 3 | 5 | 7 1/2 | 6.3 - 10 | 120 | ESWF-9V18N4-D10 | $1,225 | F-1 | |
| | | | | | 208-240 | ESWF-9V24N4-D10 | | | |
| | | | | | 480 | ESWF-9V47N4-D10 | | | |
| 5 | 5 | 10 | 15 | 10 - 16 | 120 | ESWF-18V18N4-D11 | $1,300 | F-1 | |
| | | | | | 208-240 | ESWF-18V24N4-D11 | | | |
| | | | | | 480 | ESWF-18V47N4-D11 | | | |
| 7-1/2 | 7-1/2 | 15 | 15 | 16 - 20 | 120 | ESWF-25V18N4-D12 | $1,390 | F-2 | |
| | | | | | 208-240 | ESWF-25V24N4-D12 | | | |
| | | | | | 480 | ESWF-25V47N4-D12 | | | |
| 10 | 10 | 20 | 25 | 25 - 32 | 120 | ESWF-40V18N4-D14 | $1,470 | F-2 | |
| | | | | | 208-240 | ESWF-40V24N4-D14 | | | |
| | | | | | 480 | ESWF-40V47N4-D14 | | | |
| - | 15 | 25 | 30 | 32 - 40 | 120 | ESWF-50V18N4-D19 | $1,840 | F-3 | |
| | | | | | 208-240 | ESWF-50V24N4-D19 | | | |
| | | | | | 480 | ESWF-50V47N4-D19 | | | |
| 15 | 15 | 30 | 40 | 40 - 50 | 120 | ESWF-65V18N4-D20 | $1,920 | F-3 | |
| | | | | | 208-240 | ESWF-65V24N4-D20 | | | |
| | | | | | 480 | ESWF-65V47N4-D20 | | | |
| 20 | 20 | 40 | 60 | 50 - 65 | 120 | ESWF-80V18N4-D21 | $2,010 | F-4 | |
| | | | | | 208-240 | ESWF-80V24N4-D21 | | | |
| | | | | | 480 | ESWF-80V47N4-D21 | | | |
| 20 | 25 | 50 | 60 | 55 - 75 | 120 | ESWF-95V18N4-D22 | $2,150 | F-4 | |
| | | | | | 208-240 | ESWF-95V24N4-D22 | | | |
| | | | | | 480 | ESWF-95V47N4-D22 | | | |
| 25 | 30 | 60 | 75 | 70 - 90 | 120 | ESWF-95V18N4-D23 | $2,265 | F-4 | |
| | | | | | 208-240 | ESWF-95V24N4-D23 | | | |
| | | | | | 480 | ESWF-95V47N4-D23 | | | |
| 30 | 30 | 75 | 100 | 80 - 100 | 120 | ESWF-105V18N4-D24 | $2,435 | F-4 | |
| | | | | | 208-240 | ESWF-105V24N4-D24 | | | |
| | | | | | 480 | ESWF-105V47N4-D24 | | | |

*Notes:*

*(1) Please contact your local WEG representative for starters with 575V control voltage.*

*(2) 3-phase starters with 120V coil are pre-wired for separate control*

*(3) 3-phase starters can be wired for single-phase applications*




| Dimensions (inches) | | | |
|---|---|---|---|
| Box Size | Enclosure Size | | |
| | H | W | D |
| F-1 | 12 | 12 | 8 |
| F-2 | 14 | 12 | 8 |
| F-3 | 16 | 12 | 8 |
| F-4 | 20 | 16 | 8 |



Data is subject to change without notice.

## Combination Type-F Across The Line Starter

**THREE-PHASE with Control Power Transformer**

- Branch Disconnect: Rotary through-the-door Handle
- Short-Circuit Protection: Manual Motor Protection
- Motor Control: Magnetic Contactor
- Overload Protection: Manual Motor Protection
- Control Devices: Hand-Off-Auto switch, Start-Stop pushbutton, control transformer
- Other enclosure options available upon request

### ESWF Series - Combination Type-F Across The Line Starter with CPT

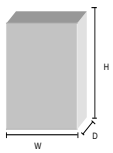
| Max. 3-ph Hp Motors | | | | Overload Setting Range (A) | Control Voltage (Vac) | Metallic Enclosure Type 4/12 | | | Multiplier |
|---|---|---|---|---|---|---|---|---|---|
| 200V | 230V | 460V | 575V | | | Catalog Number | List Price | Box Size | |
| - | - | 1/2 | 1/2 | 0.63 - 1.0 | 480 / 120 | ESWF-9T04N4-D05 | $1,325 | F-1 | Z3 |
| | | | | | 575 / 120 | ESWF-9T05N4-D05 | | | |
| 1/4 | 1/3 | 3/4 | 1 | 1.0 - 1.6 | 240 / 120 | ESWF-9T02N4-D06 | $1,325 | F-1 | |
| | | | | | 480 / 120 | ESWF-9T04N4-D06 | | | |
| | | | | | 575 / 120 | ESWF-9T05N4-D06 | | | |
| 1/2 | 1/2 | 1-1/2 | 1-1/2 | 1.6 - 2.5 | 240 / 120 | ESWF-9T02N4-D07 | $1,325 | F-1 | |
| | | | | | 480 / 120 | ESWF-9T04N4-D07 | | | |
| | | | | | 575 / 120 | ESWF-9T05N4-D07 | | | |
| 3/4 | 1 | 2 | 3 | 2.5 - 4.0 | 240 / 120 | ESWF-9T02N4-D08 | $1,325 | F-1 | |
| | | | | | 480 / 120 | ESWF-9T04N4-D08 | | | |
| | | | | | 575 / 120 | ESWF-9T05N4-D08 | | | |
| 1 1/2 | 1 1/2 | 3 | 5 | 4.0 - 6.3 | 240 / 120 | ESWF-9T02N4-D09 | $1,325 | F-1 | |
| | | | | | 480 / 120 | ESWF-9T04N4-D09 | | | |
| | | | | | 575 / 120 | ESWF-9T05N4-D09 | | | |
| 3 | 3 | 5 | 7 1/2 | 6.3 - 10 | 240 / 120 | ESWF-9T02N4-D10 | $1,325 | F-1 | |
| | | | | | 480 / 120 | ESWF-9T04N4-D10 | | | |
| | | | | | 575 / 120 | ESWF-9T05N4-D10 | | | |
| 5 | 5 | 10 | 15 | 10 - 16 | 240 / 120 | ESWF-18T02N4-D11 | $1,400 | F-1 | |
| | | | | | 480 / 120 | ESWF-18T04N4-D11 | | | |
| | | | | | 575 / 120 | ESWF-18T05N4-D11 | | | |
| 7- /2 | 7 1/2 | 15 | 15 | 16 - 20 | 240 / 120 | ESWF-25T02N4-D12 | $1,490 | F-2 | |
| | | | | | 480 / 120 | ESWF-25T04N4-D12 | | | |
| | | | | | 575 / 120 | ESWF-25T05N4-D12 | | | |
| 10 | 10 | 20 | 25 | 25 - 32 | 240 / 120 | ESWF-40T02N4-D14 | $1,620 | F-2 | |
| | | | | | 480 / 120 | ESWF-40T04N4-D14 | | | |
| | | | | | 575 / 120 | ESWF-40T05N4-D14 | | | |
| - | 15 | 25 | 30 | 32 - 40 | 240 / 120 | ESWF-50T02N4-D14 | $1,990 | F-3 | |
| | | | | | 480 / 120 | ESWF-50T04N4-D19 | | | |
| | | | | | 575 / 120 | ESWF-50T05N4-D19 | | | |
| 15 | 15 | 30 | 40 | 40 - 50 | 240 / 120 | ESWF-65T02N4-D20 | $2,120 | F-3 | |
| | | | | | 480 / 120 | ESWF-65T04N4-D20 | | | |
| | | | | | 575 / 120 | ESWF-65T05N4-D20 | | | |
| 20 | 20 | 40 | 60 | 50 - 65 | 240 / 120 | ESWF-80T02N4-D21 | $2,210 | F-4 | |
| | | | | | 480 / 120 | ESWF-80T04N4-D21 | | | |
| | | | | | 575 / 120 | ESWF-80T05N4-D21 | | | |
| 20 | 25 | 50 | 60 | 55 - 75 | 240 / 120 | ESWF-95T02N4-D22 | $2,350 | F-4 | |
| | | | | | 480 / 120 | ESWF-95T04N4-D22 | | | |
| | | | | | 575 / 120 | ESWF-95T05N4-D22 | | | |
| 25 | 30 | 60 | 75 | 70 - 90 | 240 / 120 | ESWF-95T02N4-D23 | $2,465 | F-4 | |
| | | | | | 480 / 120 | ESWF-95T04N4-D23 | | | |
| | | | | | 575 / 120 | ESWF-95T05N4-D23 | | | |
| 30 | 30 | 75 | 100 | 80 - 100 | 240 / 120 | ESWF-105T02N4-D24 | $2,635 | F-4 | |
| | | | | | 480 / 120 | ESWF-105T04N4-D24 | | | |
| | | | | | 575 / 120 | ESWF-105T05N4-D24 | | | |

*Notes:*

*(1) Please contact your local WEG representative for starters with other control voltage.*

*(2) 3-phase starters can be wired for single-phase applications*

| Dimensions (inches) | | | |
|---|---|---|---|
| Box Size | Enclosure Size | | |
| | H | W | D |
| F-1 | 12 | 12 | 8 |
| F-2 | 14 | 12 | 8 |
| F-3 | 16 | 12 | 8 |
| F-4 | 20 | 16 | 8 |

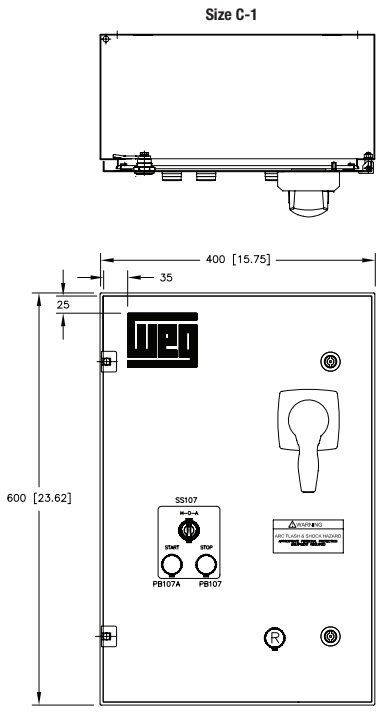


# Enclosed Starters

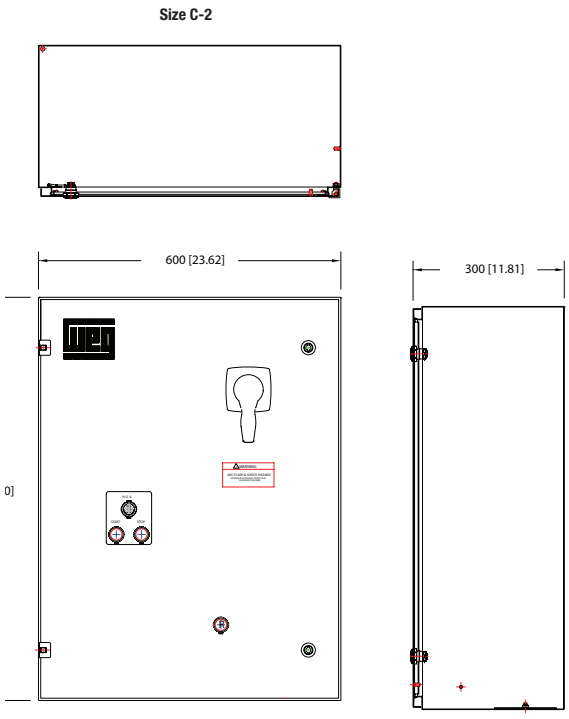
## ESWC

### Dimensions (in) - ESWC Series
### Type 4 / 12 – Metallic Enclosure

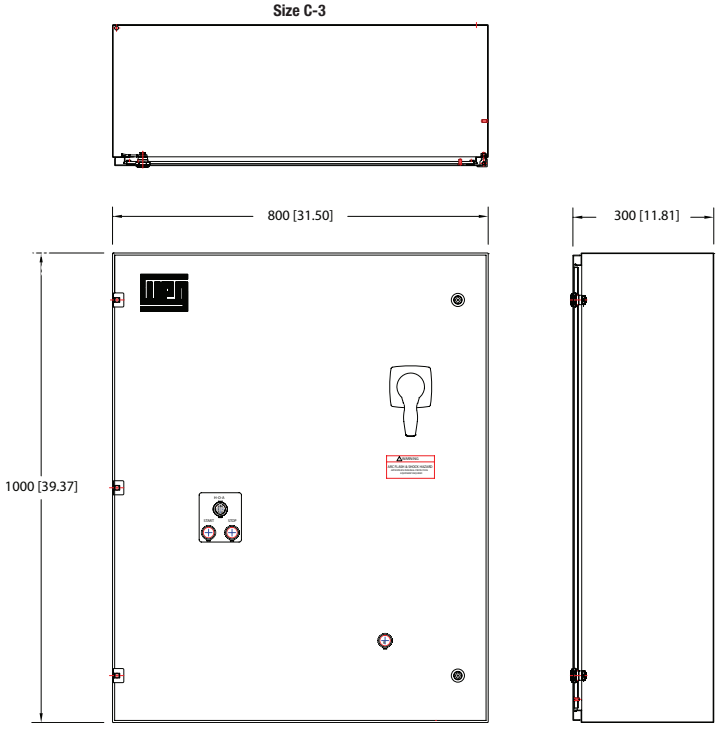
Size C-1




Size C-2




Size C-3

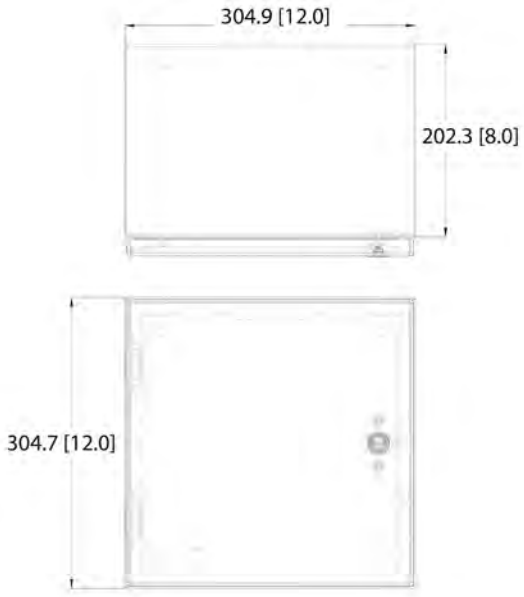




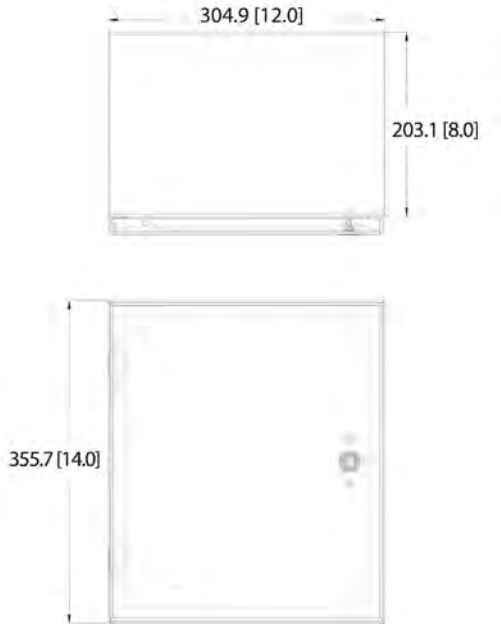

Data is subject to change without notice.

## Dimensions (in) – ESWF SERIES
## Type 4 / 12 – Metallic Enclosure

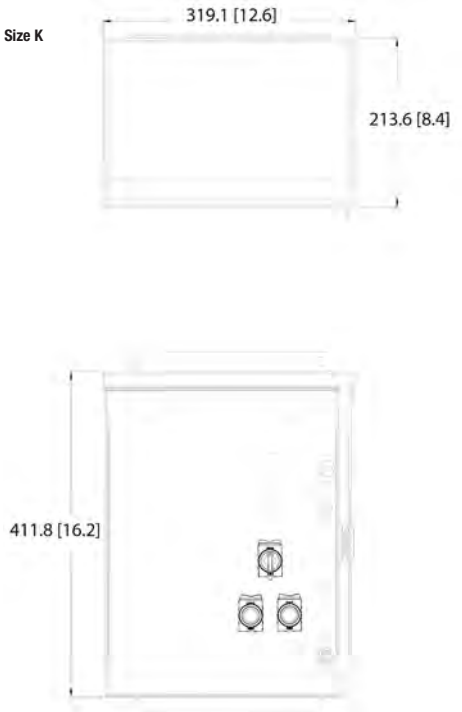
Size GX



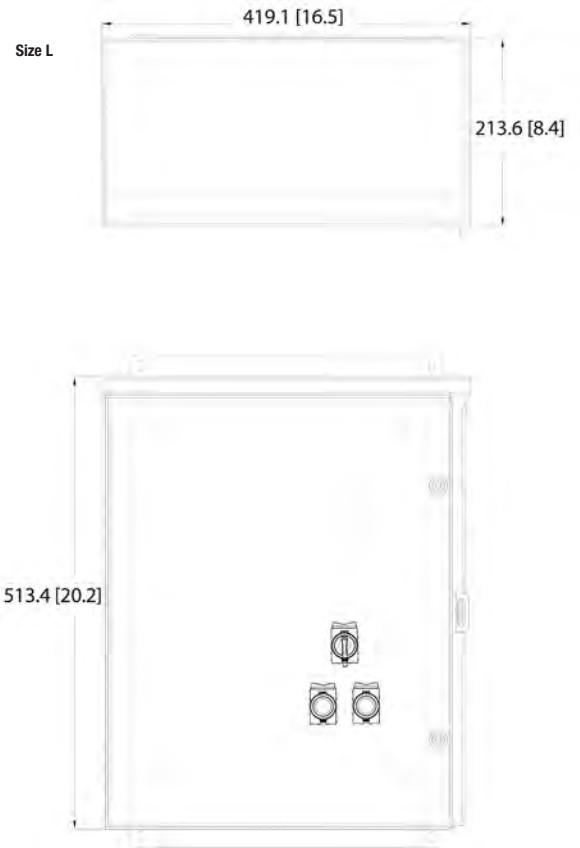

Size I




Size K




Size L



# Enclosed Starters

ESWX

## Motor Control for Hazardous Areas: Class I, Groups C & D - Class II, Groups E, F, G

WEG Explosion Proof Motors Starters are the perfect compliment for motor control in Hazardous and Industrial environments. Applications include Oil & Gas, Mining, and Chemical Processing industries.





### ESWX-M Series - Enclosed Manual Motor Starters

- High short-circuit interrupting rating – up to 50kA @ 480V
- Thermal overload protection Class 10
- Phase loss sensitivity protection
- Ambient temperature compensation -4ºF +140ºF (-20ºC +60ºC)
- Lockable rotary handle mechanism for disconnect
- Snap-in accessories
- Finger safe protected terminals
- Test trip feature
- Manual Motor Starters
- Suitable for motor disconnect applications
- UL Type-E self protected combination starter (available on request)

### ESWX Series - Enclosed Starters



- Copper free aluminum alloy body
- Bolted flange design
- Durable cast on lugs
- Watertight 'O' Rings for NEMA 4 applications
- Hinged door for easier access
- NEMA 7 / 9 housing
- Class I, Groups C & D - Class II, Groups E, F, G
- Starter includes contactor plus overload relay
- Start Stop Reset buttons (Standard)
- HOA or Pilot Light (optional)
- Available up to 75 hp @ 460 Vac – 100 amps
- NEMA rated starters available from size 00 to size 3 on request

*Custom units also available on request.*



Data is subject to change without notice.

### Motor Control for Hazardous Areas: Class I, Groups C & D - Class II, Groups E, F, G

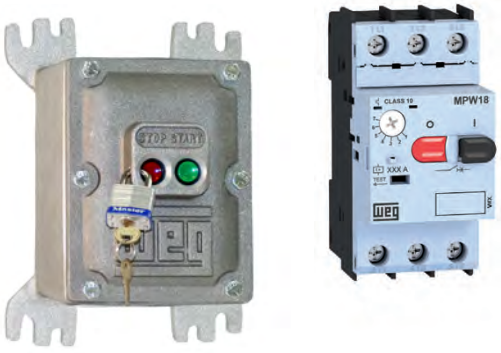
WEG Explosion Proof Motors Starters are the perfect compliment for motor control in Hazardous and Industrial environments. Applications include Oil & Gas, Mining, and Chemical Processing industries.

## Enclosure Specifications



- Versatile mounting format
- Corrosion resistant, copper free aluminum alloy body
- Bolted flange design
- Durable cast on lugs
- Watertight 'O' Rings for NEMA 4X applications
- Lockout device on cover
- Rotary Handle units include hinged door for easier access
- NEMA 4X / 7 / 9 housing
- ON/OFF - Rotary Handle or Start/Stop - Push buttons
- Rotary Lockable handle
- Available up to 75 hp @ 460 Vac – 100 amps

## Explosion Proof Manual Motor Starters ESWX-M16 Series




- Versatile mounting
- NEMA 4X / 7 / 9 housing
- Start & Stop /Reset pushbuttons
- Lockable in OFF position
- Available up to 10 hp @ 460 Vac – 16 amps

### ESWX-M16 - PRODUCT SELECTION

| Max 3 Phase UL HP | | | Thermal Setting | Short-Circuit interruption capacity | | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|---|---|---|
| Three Phase | | | | | | | | |
| 230V | 460V | 575V | [A] | 480 Vac | 600 Vac | | | |
| - | 1/2 | 1/2 | 0.63 - 1.0 | 50kA | 10kA | ESWX-M16A79-U001 | $1,595 | Z33 |
| - | 3/4 | 3/4 | 1.0 - 1.6 | 50kA | 10kA | ESWX-M16A79-D016 | $1,595 | |
| 1/2 | 1 | 1 1/2 | 1.6 - 2.5 | 50kA | 10kA | ESWX-M16A79-D025 | $1,595 | |
| 3/4 | 2 | 3 | 2.5 - 4.0 | 50kA | 10kA | ESWX-M16A79-U004 | $1,595 | |
| 1 1/2 | 3 | 5 | 4.0 - 6.3 | 50kA | 10kA | ESWX-M16A79-D063 | $1,595 | |
| 3 | 5 | 7 1/2 | 6.3 - 10 | 50kA | 5kA | ESWX-M16A79-U010 | $1,595 | |
| 5 | 10 | 10 | 10 - 16 | 30kA | 5kA | ESWX-M16A79-U016 | $1,595 | |

# Enclosed Starters

ESWX

## M25 Series

- NEMA 4X / 7 / 9 housing
- Hinged Cover for easy access
- ON / OFF – Rotary Handle
- Lockable in OFF position
- Available up to 20 hp @ 460 Vac– 32 amps





### ESWX-M25 - PRODUCT SELECTION

| Max 3 Phase UL HP Three Phase | | | Thermal Setting | Short-Circuit interruption capacity | | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|---|---|---|
| 230V | 460V | 575V | [A] | 480 Vac | 600 Vac | | | |
| - | 1/2 | 1/2 | 0.63 - 1.0 | 50kA | 25kA | ESWX-M25R79-U001 | $2,200 | Z33 |
| - | 3/4 | 3/4 | 1.0 - 1.6 | 50kA | 25kA | ESWX-M25R79-D016 | $2,200 | |
| 1/2 | 1 | 1 1/2 | 1.6 - 2.5 | 50kA | 25kA | ESWX-M25R79-D025 | $2,200 | |
| 3/4 | 2 | 3 | 2.5 - 4.0 | 50kA | 25kA | ESWX-M25R79-U004 | $2,200 | |
| 1 1/2 | 3 | 5 | 4.0 - 6.3 | 50kA | 25kA | ESWX-M25R79-D063 | $2,200 | |
| 3 | 5 | 7 1/2 | 6.3 - 10 | 50kA | 25kA | ESWX-M25R79-U010 | $2,200 | |
| 5 | 10 | 15 | 10 - 16 | 50kA | 25kA | ESWX-M25R79-U016 | $2,200 | |
| 7 1/2 | 15 | 15 | 16 - 20 | 50kA | 25kA | ESWX-M25R79-U020 | $2,200 | |
| 7 1/2 | 15 | 20 | 20 - 25 | 50kA | 25kA | ESWX-M25R79-U025 | $2,200 | |
| 10 | 20 | 25 | 25 - 32 | 42kA | 25kA | ESWX-M25R79-U032 | $2,200 | |

## ESWX-M65 Series

- NEMA 4X / 7 / 9 housing
- Hinged Cover for easy access
- ON / OFF – Rotary Handle
- Lockable in OFF position
- Available up to 50 hp @ 460 Vac – 65 amps

### ESWX-M65 - PRODUCT SELECTION

| Max 3 Phase UL HP Three Phase | | | Thermal Setting | Short-Circuit interruption capacity | | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|---|---|---|
| 230V | 460V | 575V | [A] | 480 Vac | 600 Vac | | | |
| 15 | 25 | 30 | 32 - 40 | 35kA | 10kA | ESWX-M65R79-U040 | $2,600 | Z33 |
| 15 | 30 | 40 | 40 - 50 | 35kA | 10kA | ESWX-M65R79-U050 | $2,600 | |
| 20 | 50 | 60 | 50 - 65 | 35kA | 10kA | ESWX-M65R79-U065 | $2,600 | |

## ESWX-M100 Series

- NEMA 4X / 7 / 9 housing
- Hinged Cover for easy access
- ON / OFF – Rotary Handle
- Lockable in OFF position
- Available up to 75 hp @ 460 Vac – 100 amps

### ESWX-M100 - PRODUCT SELECTION

| Max 3 Phase UL HP Three Phase | | | Thermal Setting | Short-Circuit interruption capacity | | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|---|---|---|
| 230V | 460V | 575V | [A] | 480 Vac | 600 Vac | | | |
| 25 | 50 | 60 | 55 - 75 | 50kA | 10kA | ESWX-M100R79-U075 | $3,350 | Z33 |
| 30 | 60 | 75 | 70 - 90 | 50kA | 10kA | ESWX-M100R79-U090 | $3,350 | |
| 30 | 75 | 100 | 80 - 100 | 50kA | 10kA | ESWX-M100R79-U100 | $3,350 | |



Data is subject to change without notice.

## ACCESSORIES FOR MPW18 / 40 / 65 - Summary

| Description | Catalog Number | List Price | Multiplier |
|---|---|---|---|
| **Auxiliary Contact Blocks** | | | |
| 1NO&1NC auxiliary contact block front mounting - 250Vmax. | ACBF-11 | $20 | Z4 |
| 1NO&1NC auxiliary contact block left side mounting - 600Vmax. | ACBS-11 | $22 | |
| 2NO Auxiliary contact block left side mounting - 600Vmax. | ACBS-20 | $22 | |
| 2NC Auxiliary contact block left side mounting - 600Vmax. | ACBS-02 | $22 | |
| **Under Voltage and Shunt Block Releases** | | | |
| Shunt release block right side mounting - 20-24V 50/60Hz | SRMP D51 | $56 | Z4 |
| Shunt release block right side mounting - 100-127V 50/60Hz | SRMP D59 | $56 | |
| Shunt release block right side mounting - 200-240V 50/60Hz | SRMP D65 | $56 | |
| Under voltage release block right side mounting - 24V 60Hz | URMP D02 | $56 | |
| Under voltage release block right side mounting - 120V 60Hz | URMP V18 | $56 | |
| Under voltage release block right side mounting - 208V 60Hz | URMP V23 | $56 | |
| Under voltage release block right side mounting - 240V 60Hz | URMP V30 | $56 | |
| Under voltage release block right side mounting - 480V 60Hz | URMP V47 | $56 | |

## ACCESSORIES FOR MPW100 - Summary

| Description | Catalog Number | List Price | Multiplier |
|---|---|---|---|
| **Auxiliary Contact Blocks** | | | |
| 1NO&1NC auxiliary contact block front mounting - 250Vmax. | ACBF-11 MPW100 | $35 | Z4 |
| 1NO&1NC auxiliary contact block left side mounting - 600Vmax. | ACBS-11 MPW100 | $27 | |
| 2NO Auxiliary contact block left side mounting - 600Vmax. | ACBS-20 MPW100 | $27 | |
| 2NC Auxiliary contact block left side mounting - 600Vmax. | ACBS-02 MPW100 | $27 | |
| **Under Voltage and Shunt Block Releases** | | | |
| Shunt release block right side mounting - 120V 50/60Hz | SRMP V18 MPW100 | $56 | Z4 |
| Shunt release block right side mounting - 240-260V 60Hz | SRMP V33 MPW100 | $56 | |
| Under voltage release block right side mounting - 120V 60Hz | URMP V18 MPW100 | $56 | |
| Under voltage release block right side mounting - 240V 60Hz | URMP V33 MPW100 | $56 | |
| Under voltage release block right side mounting - 460V 60Hz | URMP V43 MPW100 | $56 | |

# Enclosed Starters

ESWX

## NEMA 7/9 Enclosure – Three Phase

- Motor Control: Magnetic Contactor
- Overload Protection: Thermal Overload Relay
- Control Devices: START STOP RESET Pusbuttons
  – H.O.A. and Pilot Lights available on request
- Cast Aluminum NEMA 7/9 housing with NEMA 4 gasket
  – Breather & Drain available on request



**ESWX Series - Non-combination Across The Line Starter for use in Hazardous Areas**
**ENCLOSURE TYPE NEMA 7/9**

| Max. UL 3 Phase Horsepower | | | | Box | Setting Range | Coil Voltage | RESET only | | START + STOP + RESET | | Multiplier |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 200V | 230V | 460V | 575V | | | | Catalog Number | List Price | Catalog Number | List Price | |
| - | 1/3 | 1/2 | - | X04 | 0.8 - 1.2 | 120 | ESWX-25V18E79-R23 | $3,250 | ESWX-25V18A79-R23 | $3,850 | Z33 |
| | | | | | | 208-240 | ESWX-25V24E79-R23 | | ESWX-25V24A79-R23 | | |
| | | | | | | 480 | ESWX-25V47E79-R23 | | ESWX-25V47A79-R23 | | |
| - | - | 1 | 1 | X04 | 1.2 - 1.8 | 120 | ESWX-25V18E79-R24 | $3,250 | ESWX-25V18A79-R24 | $3,850 | |
| | | | | | | 480 | ESWX-25V47E79-R24 | | ESWX-25V47A79-R24 | | |
| 1/2 | 3/4 | 1-1/2 | 2 | X04 | 1.8 - 2.8 | 120 | ESWX-25V18E79-R25 | $3,250 | ESWX-25V18A79-R25 | $3,850 | |
| | | | | | | 208-240 | ESWX-25V24E79-R25 | | ESWX-25V24A79-R25 | | |
| | | | | | | 480 | ESWX-25V47E79-R25 | | ESWX-25V47A79-R25 | | |
| 1 | 1 | 2 | 3 | X04 | 2.8 - 4.0 | 120 | ESWX-25V18E79-R26 | $3,250 | ESWX-25V18A79-R26 | $3,850 | |
| | | | | | | 208-240 | ESWX-25V24E79-R26 | | ESWX-25V24A79-R26 | | |
| | | | | | | 480 | ESWX-25V47E79-R26 | | ESWX-25V47A79-R26 | | |
| 1-1/2 | 1-1/2 | 3 | 5 | X04 | 4.0 - 6.3 | 120 | ESWX-25V18E79-R27 | $3,250 | ESWX-25V18A79-R27 | $3,850 | |
| | | | | | | 208-240 | ESWX-25V24E79-R27 | | ESWX-25V24A79-R27 | | |
| | | | | | | 480 | ESWX-25V47E79-R27 | | ESWX-25V47A79-R27 | | |
| 2 | 2 | 5 | - | X04 | 5.6 - 8.0 | 120 | ESWX-25V18E79-R28 | $3,250 | ESWX-25V18A79-R28 | $3,850 | |
| | | | | | | 208-240 | ESWX-25V24E79-R28 | | ESWX-25V24A79-R28 | | |
| | | | | | | 480 | ESWX-25V47E79-R28 | | ESWX-25V47A79-R28 | | |
| 3 | 3 | - | 7-1/2 | X04 | 7.0 - 10 | 120 | ESWX-25V18E79-R29 | $3,250 | ESWX-25V18A79-R29 | $3,850 | |
| | | | | | | 208-240 | ESWX-25V24E79-R29 | | ESWX-25V24A79-R29 | | |
| - | - | 7-1/2 | 10 | X04 | 8.0 - 12.5 | 120 | ESWX-25V18E79-R30 | $3,250 | ESWX-25V18A79-R30 | $3,850 | |
| | | | | | | 480 | ESWX-25V47E79-R30 | | ESWX-25V47A79-R30 | | |
| 5 | 5 | 10 | 15 | X04 | 11 - 17 | 120 | ESWX-25V18E79-R32 | $3,250 | ESWX-25V18A79-R32 | $3,850 | |
| | | | | | | 208-240 | ESWX-25V24E79-R32 | | ESWX-25V24A79-R32 | | |
| | | | | | | 480 | ESWX-25V47E79-R32 | | ESWX-25V47A79-R32 | | |
| 7-1/2 | 7-1/2 | 15 | - | X04 | 15 - 23 | 120 | ESWX-25V18E79-R33 | $3,250 | ESWX-25V18A79-R33 | $3,850 | |
| | | | | | | 208-240 | ESWX-25V24E79-R33 | | ESWX-25V24A79-R33 | | |
| | | | | | | 480 | ESWX-25V47E79-R33 | | ESWX-25V47A79-R33 | | |
| 10 | 10 | 20 | 25 | X04 | 22 - 32 | 120 | ESWX-40V18E79-R34 | $3,300 | ESWX-40V18A79-R34 | $3,950 | |
| | | | | | | 208-240 | ESWX-40V24E79-R34 | | ESWX-40V24A79-R34 | | |
| | | | | | | 480 | ESWX-40V47E79-R34 | | ESWX-40V47A79-R34 | | |
| 10 | 15 | 30 | - | X04 | 25 - 40 | 120 | ESWX-40V18E79-R35 | $3,300 | ESWX-40V18A79-R35 | $3,950 | |
| | | | | | | 208-240 | ESWX-40V24E79-R35 | | ESWX-40V24A79-R35 | | |
| | | | | | | 480 | ESWX-40V47E79-R35 | | ESWX-40V47A79-R35 | | |
| 15 | 15 | 30 | 40 | X04 | 32 - 50 | 120 | ESWX-80V18E79-R38 | $3,400 | ESWX-80V18A79-R38 | $4,050 | |
| | | | | | | 208-240 | ESWX-80V24E79-R38 | | ESWX-80V24A79-R38 | | |
| | | | | | | 480 | ESWX-80V47E79-R38 | | ESWX-80V47A79-R38 | | |
| 20 | 20 | 40 | 50 | X04 | 40 - 57 | 120 | ESWX-80V18E79-R39 | $3,400 | ESWX-80V18A79-R39 | $4,050 | |
| | | | | | | 208-240 | ESWX-80V24E79-R39 | | ESWX-80V24A79-R39 | | |
| | | | | | | 480 | ESWX-80V47E79-R39 | | ESWX-80V47A79-R39 | | |
| - | 25 | 50 | 60 | X04 | 57 - 70 | 120 | ESWX-80V18E79-R41 | $3,420 | ESWX-80V18A79-R41 | $4,050 | |
| | | | | | | 208-240 | ESWX-80V24E79-R41 | | ESWX-80V24A79-R41 | | |
| | | | | | | 480 | ESWX-80V47E79-R41 | | ESWX-80V47A79-R41 | | |
| 25 | 30 | 60 | 75 | X04 | 63 - 80 | 120 | ESWX-105V18E79-R43 | $3,870 | ESWX-105V18A79-R43 | $4,600 | |
| | | | | | | 208-240 | ESWX-105V24E79-R43 | | ESWX-105V24A79-R43 | | |
| | | | | | | 480 | ESWX-105V47E79-R43 | | ESWX-105V47A79-R43 | | |
| 30 | - | 75 | - | X04 | 75 - 97 | 120 | ESWX-105V18E79-R44 | $3,870 | ESWX-105V18A79-R44 | $4,600 | |
| | | | | | | 480 | ESWX-105V47E79-R44 | | ESWX-105V47A79-R44 | | |
| - | 40 | - | - | X04 | 90 - 112 | 120 | ESWX-105V18E79-R45 | $3,870 | ESWX-105V18A79-R45 | $4,600 | |
| | | | | | | 208-240 | ESWX-105V24E79-R45 | | ESWX-105V24A79-R45 | | |

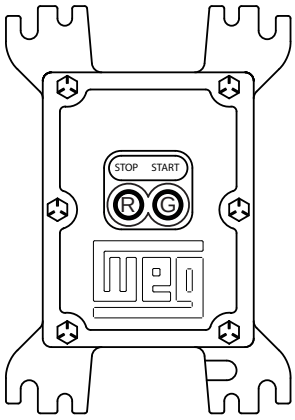
*Notes:*
*1) Overload Relay dial must be set with FLA of the motor*
*2) 3-phase starters with 120V coil are pre-wired for separate control*
*3) 3-phase starters can be wired for single-phase applications*



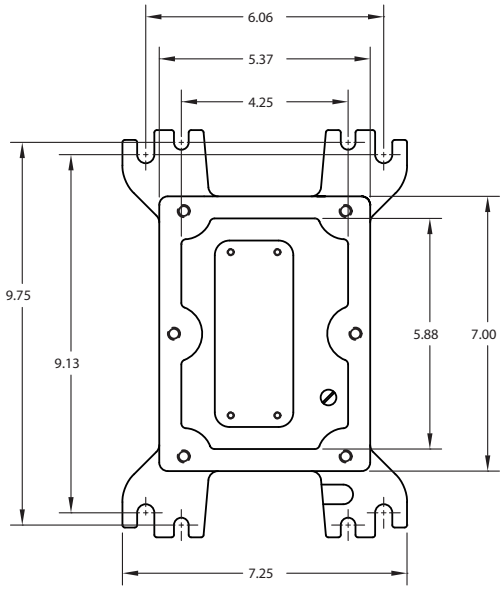
Data is subject to change without notice.

# Explosion Proof Manual Starters

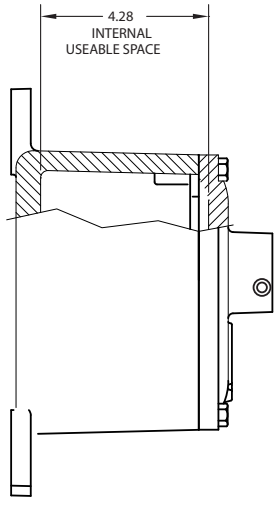
## Dimensions (in) ESWX-M18

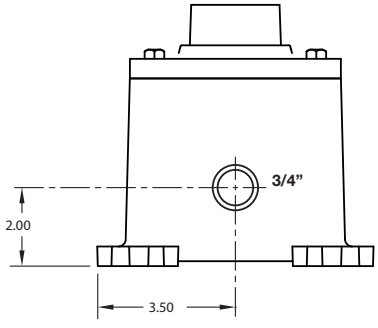



FRONT




FRONT
( w/DOOR REMOVED )




BOTTOM

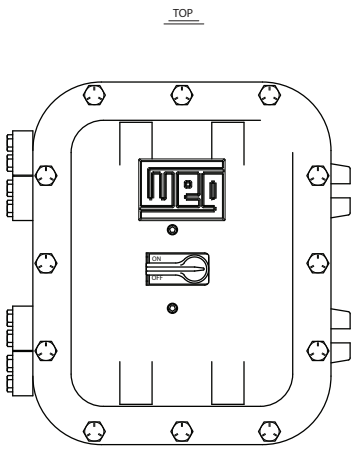
*Certifications*
*Class I, Groups C & D*
*Class II, Groups E, F, & aG*
*UL Standard 1203 (Classified)*
*NEMA 7 (C&D), 9 (E, F, & G)*

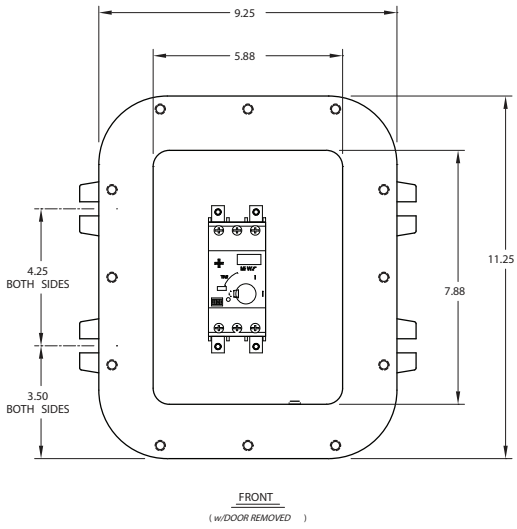
# Enclosed Starters

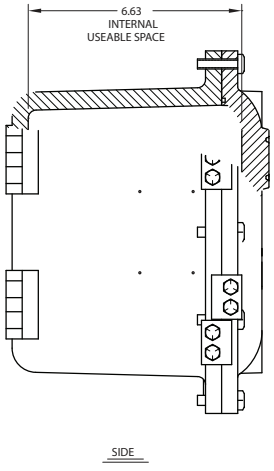
ESWX

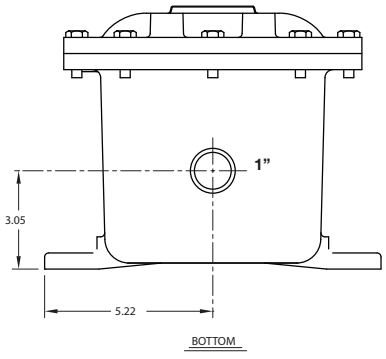
## Explosion Proof Manual Starters

### Dimensions (in) ESWX-M40 and ESWX-M65

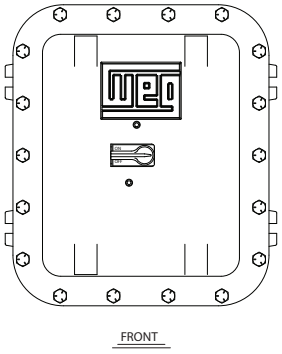


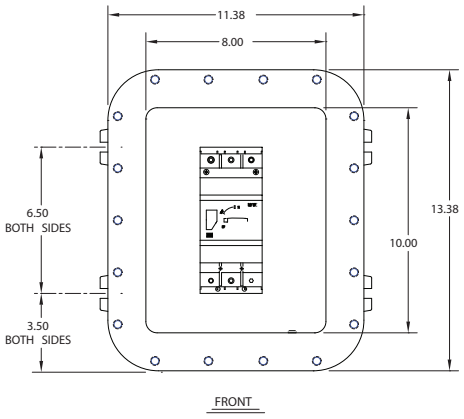




### Dimensions (in) ESWX-M100




*Certifications*
*Class I, Groups C & D*
*Class II, Groups E, F, & aG*
*UL Standard 1203 (Classified)*
*NEMA 7 (C&D), 9 (E, F, & G)*

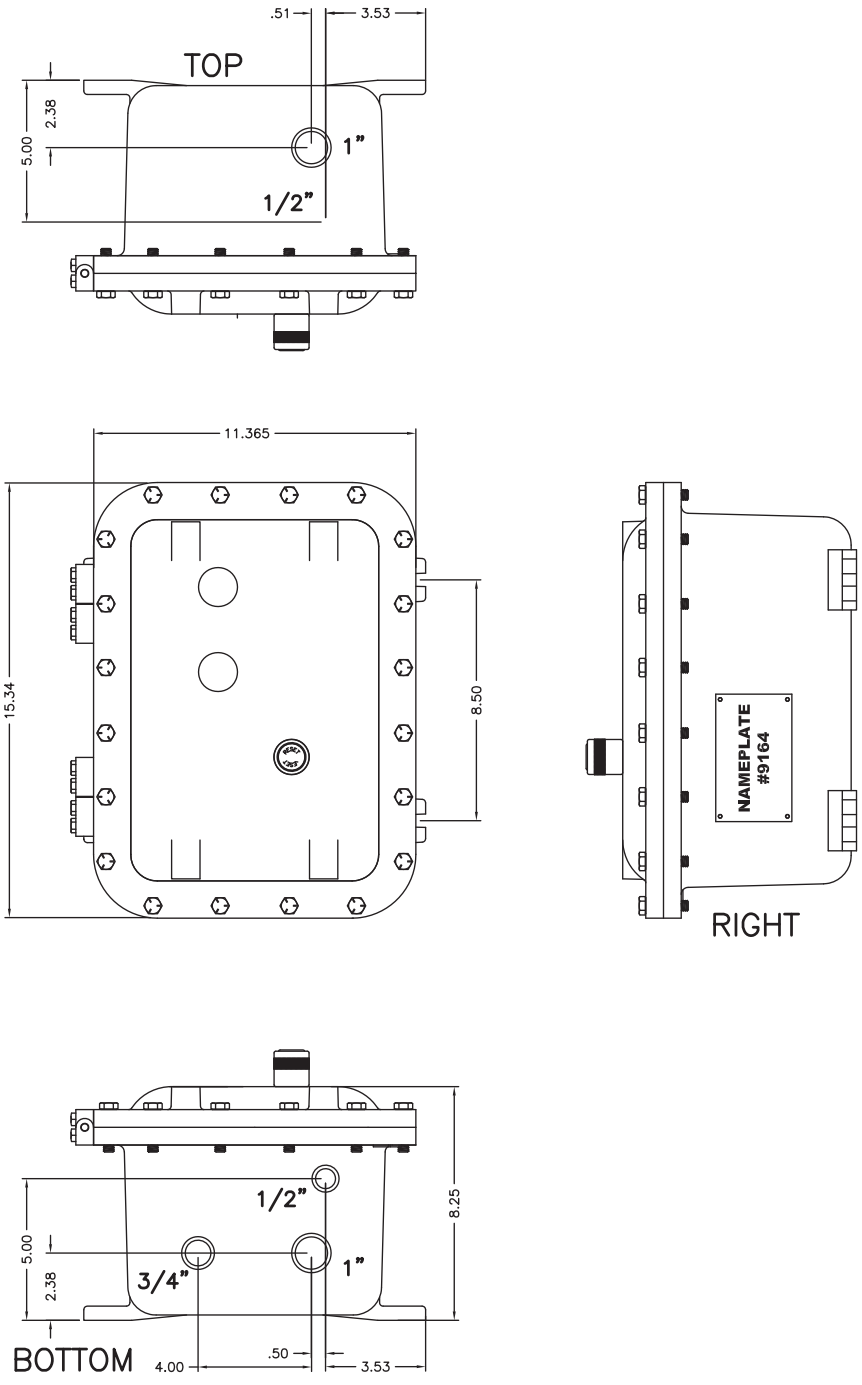


Data is subject to change without notice.

## Explosion Proof Non-Combination Starters

### Dimensions (in) ESWX SERIES

### Type-NEMA 7/9 - Cast Aluminum Enclosure



Data Worksheet and Request for Quote

# CUSTOM CONTROL PANELS

## DATA WORKSHEET and REQUEST FOR QUOTE

**REP** _____ **ASE** _____ **Need Quote By:** _____

**CUSTOMER INFO:**
**Company Name:** _____ **Phone** _____
**Contact Name:** _____**End User Name**_____

**SUPPORTING PRODUCT INFO:**
**Product Info:** _____**Part Number** _____

**LOAD DATA:**
**Motor HP**_____**Motor FLA**_____**Service Factor**_____ **Other**_____

**POWER AND WIRING:**
**Phase**_____**Supporting Voltage**_____**Frequency**_____ **Portable Generator Power?**_____

**APPLICATION & ENVIRONMENT:**
**Starting Method:** _____**Enclosure type:**_____**Ambient ° if installed outdoors**_____
**Altitude if installed above 6,500 ft**_____**Replacing Standard NEMA size?** _____
**Maximum number of starts per hour**_____**Other Information**_____

**CIRCUIT PROTECTION:**
**Protective Device**_____**Other Protective Device**_____

**CONTROL CIRCUIT:**
**Common control(same as voltage to motor)?**_____**CPT required?**_____
**Transformer with extra VA capacity?**_____

**COVER MOUNTED 22mm DEVICES: (if yes, enter quantities)**
*22MM Reset Pbs are considered based on panel configuration. If Reset Pbs are not needed, please specify.*
**Start/Stop Push Buttons**_____**H-O-A Selector Switch**_____**Off/On Selector Switch**_____
**Run Light**_____**Power On Light**_____**E-Stop Push Button**_____
**Other (specify)**_____

**OTHER SPECIFICATIONS:**
_____
_____
_____
_____

**When completed, please contact your regional WEG sales specialist at 1-800-ASK-4WEG (275-4934) for directions on submittal for quotation. WEG can help you complete any further pertinent information to quote.**


Data is subject to change without notice.

# Electronic Relays

## Protection Relays RPW

## Timing Relays RTW

## Level Relays RNW



UL File No. E02315

WEG comprises three different series under the category Electronic Relays:

- Protection/Monitoring Relays (RPW series)
- Timing Relays (RTW series); and
- Level Relays (RNW series)

These relays are manufactured in a compact frame (22.5mm) with 1 or 2 “form C” output contacts. All units utilize high precision electronic circuits with line noise immunity and are equipped with reliable LED bulbs for status indication. Units can be direct mounted in 35mm DIN rail or with screws.

## Standard Features:

- High precision electronic circuit with noise immunity.
- Compact, with a 22.5mm width frame, direct mounting on
- DIN rail 35mm or fixed with screws
- Equipped with reliability LED for status indications
- Designed in accordance with international standards

Electronic Relays

# Timing Relay RTW




Ideal for applications such as industrial processes, automation and motor starters, RTW timing relays switch an output signal based on a selected time and function. Setting time ranges from 0.2s to 150h.

RTW is supplied with a 22.5 mm width frame as a competitive solution.

## Standard Features:

- Direct mounting on DIN rail 35 mm or fixed with screws;
- 1 or 2 output contacts (C form);
- RTW-RE – On-Delay
- RTW-RD – Off-Delay
- RTW-RDI – Off-Delay without Control Voltage
- RTW-PE – Impulse On
- RTW-CI – Assymmetric Flasher Start ON
- RTW-CIL – Symmetric Flasher - Start ON
- RTW-CID – Symmetric Flasher - Start OFF
- RTW-ET – Wye - Delta

### Timing Relay Catalog Number Sequence

| RTW | RE | 01 | MBT | E05 |
|---|---|---|---|---|

- RTW: Timing Relay
- RE: Type
  - RE - On-Delay
  - PE - Impulse On
  - CI - Assymmetric Flasher Start ON
  - CIL - Symmetric Flasher - Start ON
  - CID - Symmetric Flasher - Start OFF
  - RD - Off-Delay
  - RDI - Off-Delay without Control Voltage
  - ET - Wye – Delta (1)
- 01: Number of Output Contacts
  - 01 – 1 Output Contact
  - 02 – 2 Output Contacts
- MBT: Timing Range
  - MAT – 0,1 second to 10 minutes (2)
  - MBT – 0,2 second to 150 hours (2)
  - U001S - 0.1 to 1 second
  - U003S - 0.3 to 3 seconds
  - U010S - 1 to 10 seconds
  - U030S - 3 to 30 seconds
  - U060S - 6 to 60 seconds
  - U100S - 10 to 100 seconds
  - U300S - 30 to 300 seconds
- E05: Voltage Supply
  - *See Table Below

Table intended for reference only and not to create part numbers.

| *Code | Voltage | RTW-RE | RTW-PE | RTW-CI | RTW-CIL | RTW-CID | RTW-RD | RTW-RDI | RTW-ET |
|---|---|---|---|---|---|---|---|---|---|
| E05 | 24-240VAC 50/60 Hz/ VDC | X | X | X | X | X | X | X | X |

*Notes:*
*(1) Star-Delta function requires 2 output contacts and MAT timing range*
*(2) Timing ranges not avaliable for RTW-CI/CIR/RDI*





Data is subject to change without notice.

## Timing Relays - Multi-Voltage & Multi-Timing

| Function / Description | Output Contacts | Voltage | Timing | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|---|
| On-Delay | DPDT (2NO/NC) | 24-240 Vac 50Hz/60Hz 24-240 Vdc | 0.2 sec - 150 hours | RTW-RE02-MBTE05 | $90 | Z7 |
| Off-Delay (with control command) | DPDT (2NO/NC) | 24-240 Vac 50Hz/60Hz 24-240 Vdc | 0.2 sec - 150 hours | RTW-RD02-MBTE05 | $90 | |
| Impulse ON | DPDT (2NO/NC) | 24-240 Vac 50Hz/60Hz 24-240 Vdc | 0.2 sec - 150 hours | RTW-PE02-MBTE05 | $90 | |
| Symm Flasher - Pulse (Start ON) | DPDT (2NO/NC) | 24-240 Vac 50Hz/60Hz 24-240 Vdc | 0.2 sec - 150 hours | RTW-CIL02-MBTE05 | $90 | |
| Symm Flasher - Pause (Start OFF) | DPDT (2NO/NC) | 24-240 Vac 50Hz/60Hz 24-240 Vdc | 0.2 sec - 150 hours | RTW-CID02-MBTE05 | $90 | |
| Wye-Delta Timing Relay | DPDT (2NO/NC) | 24-240 Vac 50Hz/60Hz 24-240 Vdc | 0.1 sec - 10 min | RTW-ET02-MATE05 | $90 | |

## Timing Relays - Multi-Voltage & Single-Timing

| Function / Description | Output Contacts | Voltage | Timing | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|---|
| Off-Delay (without control command) | DPDT (2NO/NC) | 24-240 Vac 50Hz/60Hz 24-240 Vdc | 0.3 sec - 3 sec | RTW-RDI02-U003SE05 | $96 | Z7 |
| | | | 1 sec - 10 sec | RTW-RDI02-U010SE05 | | |
| | | | 3 sec - 30 sec | RTW-RDI02-U030SE05 | | |
| | | | 10 sec - 100 sec | RTW-RDI02-U100SE05 | | |
| | | | 30 sec - 300 sec | RTW-RDI02-U300SE05 | | |
| | | | 180 sec - 1800 sec | RTW-RDI02-U010ME05 | | |
| Asymm Flasher - Pulse (start ON) | DPDT (2NO/NC) | 24-240 Vac 50Hz/60Hz 24-240 Vdc | 0.3 sec - 3 sec | RTW-CI02-U003SE05 | $96 | |
| | | | 1 sec - 10 sec | RTW-CI02-U010SE05 | | |
| | | | 3 sec - 30 sec | RTW-CI02-U030SE05 | | |
| | | | 10 sec - 100 sec | RTW-CI02-U100SE05 | | |
| | | | 30 sec - 300 sec | RTW-CI02-U300SE05 | | |
| | | | 180 sec - 1800 sec | RTW-CI02-U030ME05 | | |
| Asymm Flasher - Pause (start OFF) | DPDT (2NO/NC) | 24-240 Vac 50Hz/60Hz 24-240 Vdc | 0.3 sec - 3 sec | RTW-CIR02-U003SE05 | $96 | |
| | | | 1 sec - 10 sec | RTW-CIR02-U010SE05 | | |
| | | | 3 sec - 30 sec | RTW-CIR02-U030SE05 | | |
| | | | 10 sec - 100 sec | RTW-CIR02-U100SE05 | | |
| | | | 30 sec - 300 sec | RTW-CIR02-U300SE05 | | |
| | | | 180 sec - 1800 sec | RTW-CIR02-U030ME05 | | |

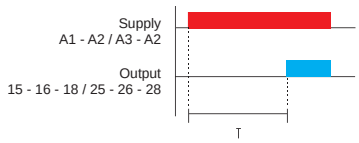
*DPDT - Double Pole Double Throw = 2N.O./N.C. changeover contact sets*

# Timing Relays - RTW Series

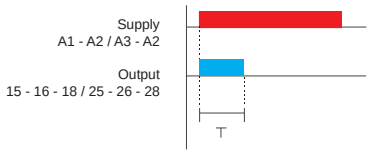
## Operation Modes

## Function Diagram

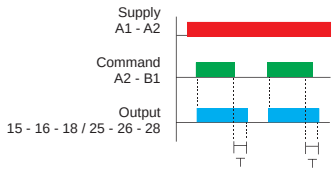
RTW RE **(ON - Delay)** – Connecting a supply voltage on terminals A1-A2 / A3-A2 the selected time delay begins and the green LED turns on. After the end of the delay time the output relay picks up (red LED turns on) and remains energized until the supply voltage is removed. This can be repeated as often as required.
Reset: Removing supply voltage resets the time delay and the output.



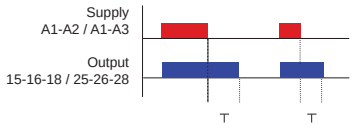

RTW PE **(Impulse On)** – Connecting a supply voltage on terminals A1-A2 / A3-A2 (green LED turns on) the output relay picks up without delay (red LED turns on) and remains energized until the selected pulse time elapse (red LED turns off). This can be repeated as often as required.Reset: Removing supply voltage resets the time delay and the output.



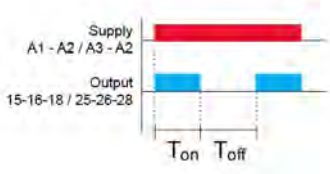

RTW RD **(OFF Delay)** – This function requires continuous supply voltage on terminals A1-A2 (green LED turns on) and timing is controlled by a command contact at terminals A2-B1. If the command contact is energized, the output relay picks up (red LED turns on) and after the command contact is removed the selected time delay begins. When the selected time elapse the output relay is de-energized (red LED turns off). This can be repeated as often as required.Reset: Removing supply voltage resets the time delay and the output.



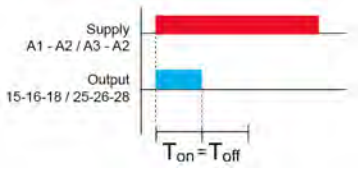

RTW RDI **(OFF Delay with no control command)** – Connecting a supply voltage on terminals A1-A2 / A3-A2, the green LED turns on and the output relay picks up without delay (red LED turns on). If the supply voltage is de-energized, the selected time delay begins and when this time elapse, the output relay is de-energized (red LED turns off). This can be repeated as often as required. Reset: Removing supply voltage resets the time delay and the output.



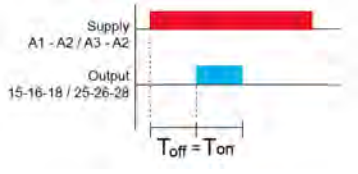

RTW CI **(Assymmetric Flasher-Pulse)** – Connecting a supply voltage on terminals A1-A2 / A3-A2 the green LED turns on and the timer starts to pulse with adjustable ON/OFF cycles. The upper dial presets the ON time (red LED turns ON and output relay picks up) and the lower select the OFF time when the output relay is de-energized.
Reset: Removing supply voltage resets the time delay and the output.



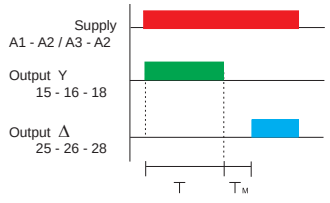

RTW CIL **(Symmetric Flasher - Pulse)** – Connecting a supply voltage on terminals A1-A2 / A3-A2 the green LED turns on and the timer starts to pulse with symmetric ON/OFF cycles.The dial presets a fixed ON time (red LED turns ON and output relay picks up) and OFF time. Reset: Removing supply voltage resets the time delay and the output.




RTW CID **(Symmetric Flasher - Pause)** – Connecting a supply voltage on terminals A1-A2 / A3-A2 the green LED turns on and the timer starts to pulse with symmetric OFF/ON cycles.The dial presets a fixed ON time (red LED turns ON and output relay picks up) and OFF time. Reset: Removing supply voltage resets the time delay and the output.




RTW ET **(Wye-Delta)** – Connecting a supply voltage on terminals A1-A2 / A3-A2 the output relay for the wye-connection picks up and the adjusted time starts (red LED turns ON). When the start-up time elapses, a fixed star-delta changeover time of 100 ms starts and after this star-delta changeover time elapses the output relay for the delta-connection picks up and stays energized until the supply is disconnected.
Reset: Removing supply voltage resets the time delay and the output.

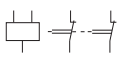
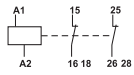
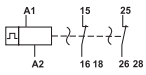
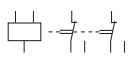
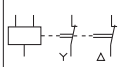





Data is subject to change without notice.

# Timing Relays - RTW Series

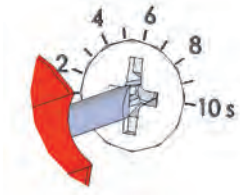
## Connection Diagrams

| | | RTW - RE | RTW - PE | RTW - CI / CIL / CID | RTW - RD / RDI | RTW - ET |
|---|---|---|---|---|---|---|
| | | 2E | 2E | 2E | 2E | 2E |
| Terminal positions | |  |  |  |  |  |
| Diagram | |  |  |  |  |  |
| Circuit | A1 - A2 Supply voltage | 24-240VAC/VDC (50/60Hz) | 24-240VAC/VDC (50/60Hz) | 24-240VAC/VDC (50/60Hz) | 24-240VAC/VDC (50/60Hz) | 24-240VAC/VDC (50/60Hz) |
| | A2 - B1 Control voltage | X | X | X | 24-240VAC/VDC (50/60Hz) | X |
| | 15 - 16 - 18 | Output 1 | Output 1 | Output 1 | Output 1 | Output 1 |
| | 25 - 26 - 28 | Output 2 | Output 2 | Output 2 | Output 2 | Output 2 |

The desired timing must be adjusted through its front adjustment DIAL, the scale is presented in seconds for all timing, except for the 3 to 30 minute scale.

## Timing Relay Adjustment

| RTW-CI / CIR / RDI | RTW-RE / PE / CIL / CID / RD | RTW-ET |
|---|---|---|
| 0.1 sec to 1 sec | 0.1 sec to 10 min<br>0.2 sec to 150 h | 0.1 sec to 10 min |
| 0.3 sec to 3 sec | | |
| 1 sec to 10 sec | | |
| 3 sec to 30 sec | | |
| 6 sec to 60 sec | | |
| 30 sec to 300 sec | | |
| 3 min to 30 min | | |







## Light indications on Relay

The RTW Timing Relay has status indicator LEDs, as shown below:

| | RTW - RE RTW-PE RTW-CI/CIR/CIL/CID RTW-RD/RDI |
|---|---|
| Red LED | Energized Output |
| Green LED | Energized Relay |



| | RTW - ET |
|---|---|
| Red LED | Wye Output |
| Green LED | Delta Output |



The RTW relays can be individually mounted on DIN 35mm rail or with screws using the PLMP accessory.

# Relays

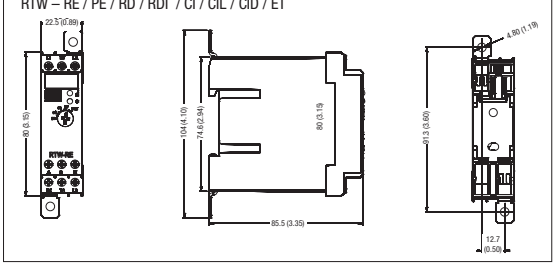
## Electronic Relays

### Timing Relays - RTW Series

| | PRODUCT | | | RTW |
|---|---|---|---|---|
| Inputs | Rated Insulation Voltage (Ui) | | V | 300 |
| | Supply Voltage (Ue) | A1 – A2 | Vac | 24Vac 50/60Hz • 48Vac 50/60Hz<br>110-130Vac 50/60Hz • 220-240Vac 50/60Hz<br>24Vdc (only RTW RD) |
| | | A2 – A3 | Vdc | 24Vdc (except RTW-RD) |
| | Comand (Uc)<br>RTW RD) | A2 – B1 (Only | Vac | 24Vac 50/60Hz • 48Vac 50/60Hz<br>110-130Vac 50/60Hz • 220-240Vac 50/60Hz<br>24Vdc |
| | Voltage limits | | | 0.85...1.1 x Uc for Vac<br>0.8...1.25 x Uc for Vdc |
| | Consumption | | mA | 35 for Ue = 24Vdc<br>65 for Ue = 110Vac<br>75 for Ue = 130Vac<br>55 for Ue = 220Vac<br>60 for Ue = 240Vac |
| Time Adjust | Minimum Time for Reset | | ms | 100 |
| | Minimum ON Time (for RTW RD) | | ms | 50 |
| | Setting Accuracy (as % of the full scale value) | | % | ±5 |
| | Repeat Accuracy | | % | ±1 |
| | Changeover time Y - Δ | | ms | 100 |
| Outputs | Output contacts capacity | | (Ie) | |
| | Acc. IEC 60947-5-1 | AC-15 on 230 Vdc | A | 3 |
| | | DC-13 on 24Vdc | A | 1 |
| | | DC-13 on 48Vdc | A | 0.45 |
| | | DC-13 on 60Vdc | A | 0.35 |
| | | DC-13 on 125Vdc | A | 0.2 |
| | | DC-13 on 250Vdc | A | 0.1 |
| | Acc. UL;CSA | | | A300<br>R300 |
| | Fuse (class gL/Gg) | | A | 4 |
| | Mechanical Durability | | operating cycles | $30 \times 10^6$ |
| | Electrical Durability | | operating cycles | $10 \times 10^5$ |
| Mechanical Features | Ambient Temperature | | | |
| | - Operation | | ºC (F) | -5 a +60 (23...140) |
| | - Storage | | ºC (F) | -40 a +85 (-40...125) |
| | Protection Degree | | | Frame IP20 / Terminals IP20 |
| | Connection Section (min. to max.) | | | |
| | - Cable without end sleeve | | $mm^2$ | 1 x (0.5 to 2.5)<br>2 x (0.5 to 1.5) |
| | - Cable with end sleeve | | $mm^2$ | 1 x (0.5 to 1.5)<br>2 x (0.5 to 1.5) |
| | - AWG-Wire | | AWG | 2 x (20 to 16) |
| | Tightening Torque | | N.m (lb.in) | 0.8 to 14.7 (7.1 to 12.3) |
| | Terminal Screew | | | M3 |
| | Mounting Position | | | any position |
| | Shock Resistance | | g/ms | 15/11 |
| | Vibration Resistance | | Hz/mm | 10 to 500/10 |
| | Weight | | kg (oz) | 0.1(35) |

**DIMENSIONS mm (in)**

RTW – RE / PE / RD / RDI / CI / CIL / CID / ET





Data is subject to change without notice.

# Protection Relays RPW

RPW protection relays are a competitive choice for monitoring voltage against the most common types of electrical failures. Monitoring voltages in electric installations are important for several reasons. Overvoltage, or phase loss can overheat machinery and motors, thus reducing their lifetime. Phase sequence inversion can cause machinery to run in a wrong way, then destroying the entire system; and undervoltage may occur causing machinery to run in an undefined range, which could cause some parts of a system to run properly while others cease operating.




With five different functions, the RPW series are ideal to be used in electric motor control panel applications.

- RPW SF – Phase Sequence Relay
- RPW FF – Phase Loss Relay
- RPW FSF – Phase Sequence and Phase Loss Relay
- RPW SS – Under and Overvoltage Relay
- RPW PTC – Thermistor Relay

**RPW SF The Phase Sequence Relay** RPW-SF - is used to monitor three-phase networks against incorrect phase sequence.

**RPW FF (without neutral selection)** The Phase Loss Relay - RPW FF - is used to monitor three-phase networks against phase failure.

**RPW FF (with neutral selection)** The Phase Loss Relay - RPW FF - is used to monitor three-phase networks and the neutral against phase failure.

**RPW FSF (without neutral selection)** The Phase Sequence and Phase Loss Relay - RPW FSF - is used to monitor three-phase networks against phase loss and incorrect phase sequence.

**RPW FSF (with Neutral selection)** The Phase Sequence and Phase Loss Relay - RPW FSF - is used to monitor three-phase networks and neutral against phase failure and incorrect phase sequence.

**RPW SS** The Under and Over-voltage Relay RPW SS is used to monitor maximum and minimum variations that three-phase power supplies are able to work. The RPW SS also protects the circuit against phase unbalance (asymmetry) of 20% or higher between phases.

**RPW PTC** The Thermistor Relay RPW PTC is used to measure the motor temperature by using PTC sensor inside of the motor. When the motor temperature rises above the PTC sensor class, the output relay is de-energized avoiding damages to the motor.


RPW-FF


RPW-FSF


RPW-SS


RPW-PTC

# Relays

Protection Relays

## Protection Relay RPW-Series Catalog Number Sequence

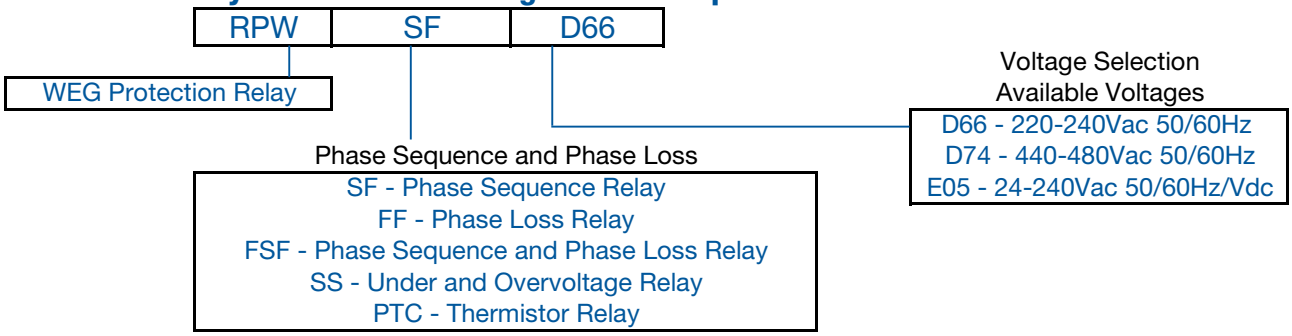



Table intended for reference only and not to create part numbers.

## Protection Relays Selection Guide

| Function / Description | Output Contacts | Replace "#" by Voltage Code | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|
| Thermistor Relay | SPDT (1NO/NC) | E05 = 24-240Vac/Vdc | **RPW-PTC#** | **$105** | Z7 |
| Phase-loss Protection Relay | SPDT (1NO/NC) | D66 = 220-240Vac;<br>D74 = 440-480Vac; | **RPW-FF#** | **$93** | |
| Phase Sequence Protection Relay | SPDT (1NO/NC) | D66 = 220-240Vac;<br>D74 = 440-480Vac; | **RPW-SF#** | **$84** | |
| Phase-loss and Phase-sequence Relay | SPDT (1NO/NC) | D66 = 220-240Vac;<br>D74 = 440-480Vac; | **RPW-FSF#** | **$94.50** | |
| Under and Overvoltage Relay | SPDT (1NO/NC) | D25 = 240Vac;<br>D39 = 480Vac; | **RPW-SS#** | **$99.75** | |

*SPDT - Single Pole Double Throw = 1N.O./N.C. changeover contact set*



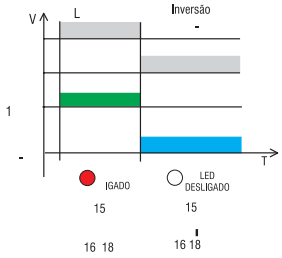
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# RPW Series

## Operation Guide

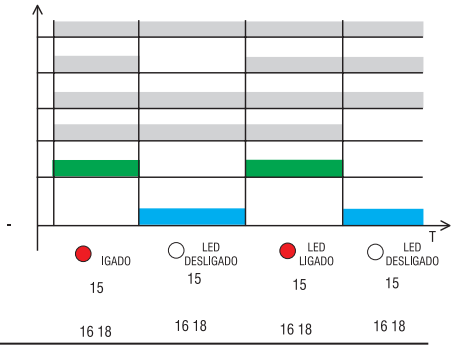
**RPW-SF:** If the phase sequence at the terminals L1-L2-L3 is correct, the output relay picks up (close the 15-18 terminals) and the red LED turns ON. In case of an incorrect phase sequence, the output relay remains in its rest position (close the 15-16 terminals) and the red LED is turns OFF.

## Function Diagram



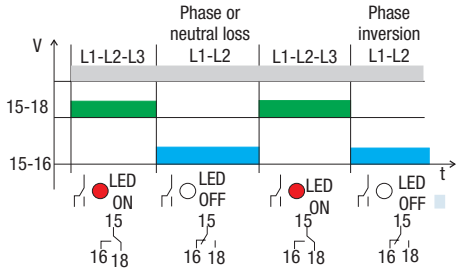

**RPW FF:** (without neutral selection): Connected directly to the supply voltage to be monitored, and connecting the three phases with values above than the selected on the dial, the output relay is energized (close the 15-18 terminals) and turns on the red LED indicating that the system is properly working. In case the voltage falls below the threshold value the output relay is de-energized (close the 15-16 terminals) and the red LED is turns OFF.

**RPW FF:** (with neutral selection): In the same product, the neutral protection is enabled jumpering the terminals A and B to monitor the neutral voltage (terminal N). The neutral must be connected to the protection relay for proper operation.

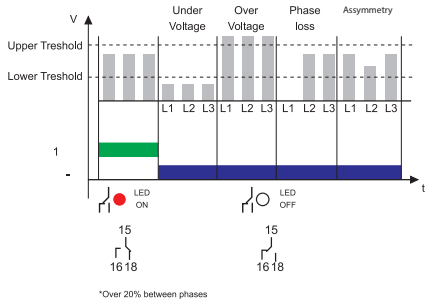



**RPW FSF:** (without Neutral selection) : If the phase sequence at the terminals L1-L2-L3 is correct and balanced with values higher than the selected on the dial, the output relay picks up (close the 15-18 terminals) and the red LED turns ON. In case of an incorrect phase sequence or a phase fails below the threshold value, the output relay remains in its rest position (close the 15-16 terminals) and the red LED turns OFF.

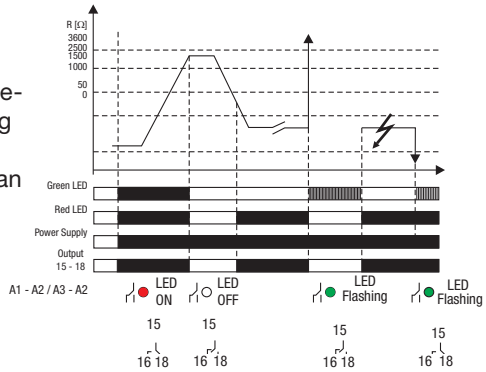
**RPW FSF:** (with Neutral selection): In the same product, the neutral protection is enabled jumpering the terminals A and B to monitor the neutral voltage (terminal N). The neutral must be connected to the protection relay for proper operation.




**RPW-SS:** Connecting the phases L1-L2-L3 with phase amplitudes within the selected values and assymmetry between them below the threshold (20%), the output relay picks up (close the 15-18 terminals) and the red LED turns ON. In case of a phase loss, assymmetry between phases higher than 20% or under and over-voltage, the output relay remains in its rest position (close the 15-16 terminals) and the red LED is turns OFF.



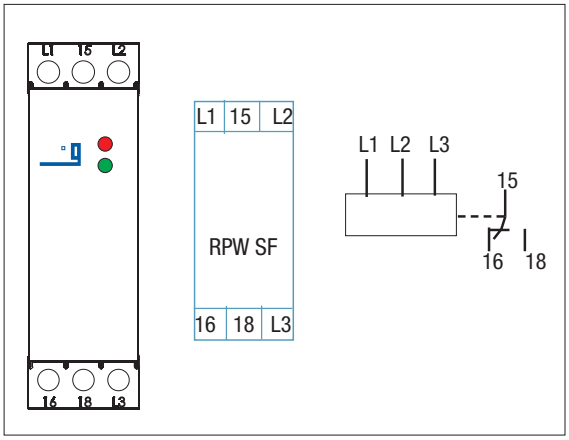

**RPW-PTC:** Connected directly to the supply voltage and in series to the PTC sensor (maximum of 3 sensors), the output relay is automatically energized (close the 15-18 terminals) and turns on the red LED indicating that the temperature is within acceptable values. If an over temperature occurs, the probe resistance is rapidly increased and the output relay is de-energized (close the 15-16 terminals) and the red LED turns OFF, remaining on this situation until the temperature decreases at a normal value. The RTW PTC is able to evaluate if the PTC sensor has a fault (not caused by an over temperature) or if is not connected (open circuit). In such situations, the green LED will start flashing.

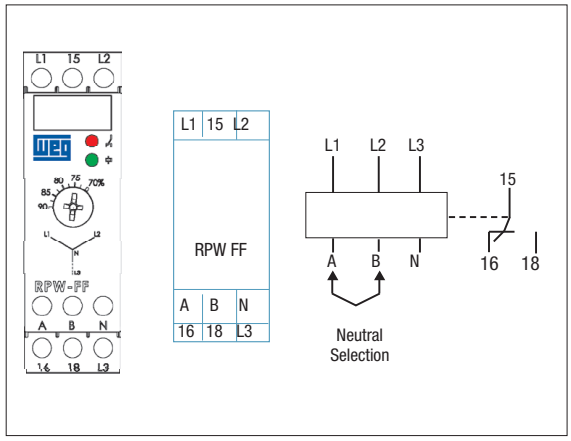


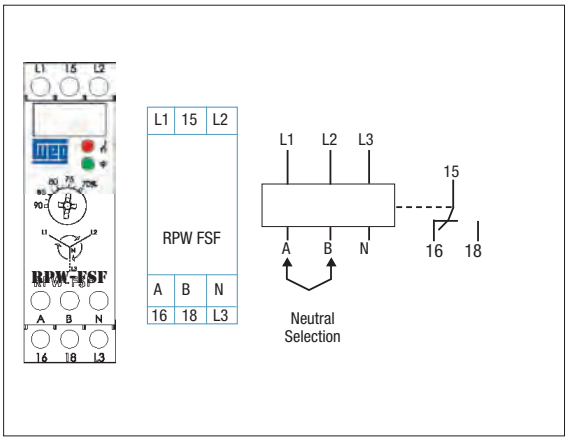
Protection Relays

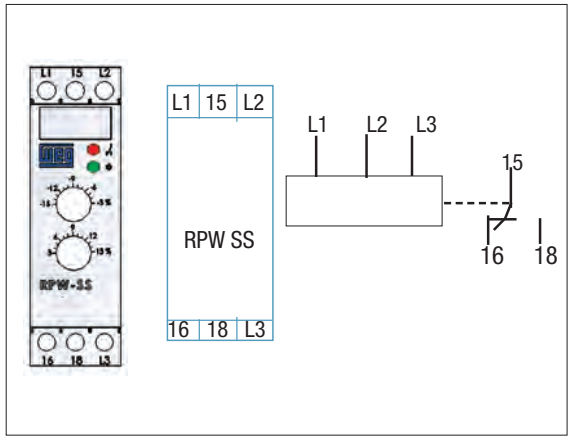
## RPW Series

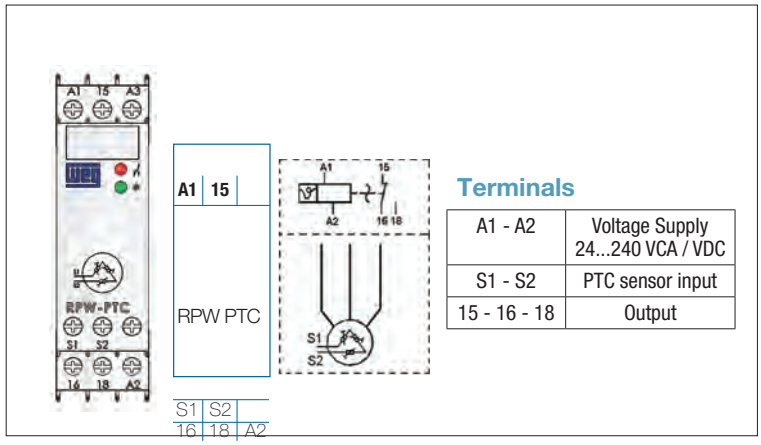
### Connection Diagrams




**Terminals**

| | |
|---|---|
| A1 - A2 | Voltage Supply 24...240 VCA / VDC |
| S1 - S2 | PTC sensor input |
| 15 - 16 - 18 | Output |

*The RPW relay can be mounted directly on DIN rail 35mm or fixed with screws using the accessory PLMP.*

Protection Relay RPW is provided with LED's for status indication.




The sensitivity adjustment (threshold) is made by the DIAL located on the front of the relay. It ranges from 70% to 90%, which defines the balance for one phase related to the others.





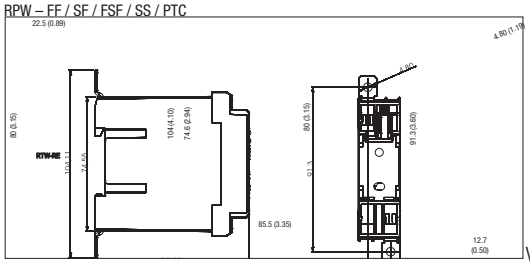



Data is subject to change without notice.

| | Product | | | RPW-FF | RPW-SF | RPW-FSF | RPW-SS | RPW-PTC |
|---|---|---|---|---|---|---|---|---|
| Inputs | Supply Voltage (Ue) | L1- L2 - L3 | Vac | 220-240 or 440-480 | | | 240 or 480 | - |
| | | A1 - A2 | Vac/Vdc | - | | | - | 24-240 |
| | Frequency | | Hz | 50/60 | | | | |
| | Sensibility Adjustment% | | | 70 to 90 | - | 70 to 90 | -15 to -3<br>+3 to +15 | - |
| | Operation Range | | %xUe | 0.85 up to 1.1 | | | | |
| | Maximum Consumption | | mA | 80 | | | | |
| | Maxium Neutral voltage | | V | 20 | - | 20 | - | - |
| | Setting Accuracy (as % of the full scale value) | | % | ±5 | | | | |
| | Repeat Accuracy | | | ±1 | | | | |
| Outputs | Output contacts capacity | | (Ie) | | | | | |
| | Acc.IEC 60947-5-1 | AC-15 on 230Vac | | 3 | | | | |
| | | DC-13 on 24Vdc | | 1 | | | | |
| | | DC-13 on 48Vdc | | 0.45 | | | | |
| | | DC-13 on 60Vdc | | 0.35 | | | | |
| | | DC-13 on 125Vdc | A | 0.02 | | | | |
| | | DC-13 on 250Vdc | | 0.1 | | | | |
| | Acc.UL; CSA | | | A300 | | | | |
| | | | | R300 | | | | |
| | Fues (class gL/gG) | | A | 4 | | | | |
| | Mechanical Durability | operating cycles | | $30 \times 10^6$ | | | | |
| | Electrical Durability | operating cycles | | $10 \times 10^6$ | | | | |
| Mechanical Features | **Ambient Temperature** | | | | | | | |
| | -Operation | | °C (F) | -5...+60 (23...140) | | | | |
| | -Storage | | °C (F) | -40...+85 (-40...185) | | | | |
| | Protection Degree | | | Frame and Terminals IP20 | | | | |
| | **Conductor cross-section** | | | | | | | |
| | -Solid/Stranded without end sleeve | | $mm^2$ | 1 x (0.5 to 2.5) | | | | |
| | | | | 2 x (0.5 to 1.5) | | | | |
| | - Stranded with end sleeve | | $mm^2$ | 1 x (0.5 to 1.5) | | | | |
| | | | | 2 x (0.5 to 1.5) | | | | |
| | - AWG cables | | | 2 x (20 to 16) | | | | |
| | Tightening Torque | | N.m (lb.in) | 0.8 to 1.4 (7.1 to 12.3) | | | | |
| | Terminal Screw | | | M3 | | | | |
| | Mounting Position | | | any position | | | | |
| | Shock resistance | | g/ms | 15 / 11 | | | | |
| | Vibration resistance | | Hz/mm | 10 to 500/10 | | | | |
| | Weight | | Kg (oz) | 0.1 (35) | | | | |
| | Pollution degree | | | 2 | | | | |
| | Overvoltage Class | | | III | | | | |

## DIMENSIONS mm (in)

RPW – FF / SF / FSF / SS / PTC



# Level Relay RNW




WEG Level Relays are electronic control devices that enable the monitoring and automatic adjustment of levels in electric current liquid conductors. Widely used in general reservoir automation, the RNW relays can also be utilized in several applications such as prevention of dry pump operation, monitoring against filling tank overflow, activation of solenoids or alarms / lighting.

The operating principle is based on measuring the electrical resistance of the reservoir liquid through electrodes that work as liquid presence / absence sensors. To optimize their performance, the relay has a sensitivity DIAL enabling the electronic circuit to be adjusted to the liquid resistance.
Available in 2 functions, RNW-EN filling and RNW-ES draining, the level relay offers digital electronics that provide high precision, repeatability and noise resistance. The supply system is isolated from the electronic circuit therefore ensuring greater user safety. Designed in accordance with international standards, the RNW offers a safe and compact solution, in 22,5mm wide housing for assembly on 35mm DIN rail, with 1 output reversable contact(C form) and voltage supply range of 100-240 VAC/VDC.

Available in the following functions:
- RNW EN -> Filling
- RNW ES -> Draining

## Level Relay RPW-Series Catalog Number Sequence

| RNW | EN | E09 |
|---|---|---|

- RNW: WEG Level Relay
- EN: Type — EN - Filling; ES - Draining
- E09: Available Voltages — 100-240 Vac/Vdc

Table intended for reference only and not to create part numbers.



Data is subject to change without notice.

## Product Selection

| Function / Description | Output Contacts | Voltage | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|
| Draining Relay | SPDT (1NO/NC) | 100-240 Vac 50Hz/60Hz<br>100-240 Vdc | RNW-ESE09 | $125 | Z7 |
| Filling Relay | SPDT (1NO/NC) | 100-240 Vac 50Hz/60Hz<br>100-240 Vdc | RNW-ENE09 | $125 | |
| Pendulum Type Electrode | - | - | EPW | $25 | |
| Shaft Type Electrode | - | - | EHW | $92 | |
| Push-in-Lugs | - | - | PLMP | $0.50 | |

*SPDT - Single Pole Double Throw = 1N.O./N.C. changeover contact set*

### Sensitivity Adjustment

Liquid resistance can vary according to the liquid in question and the position of the electrodes. To adapt the electronic circuit to the liquid used, sensitivity must be adjusted through the DIAL located in the front part of the RNW, which has a graded scale without values.

To perform the sensitivity adjustment, all electrodes must be submersed into the reservoir liquid and the DIAL positioned at its limit anti-clockwise (less resistance). With the relay energized, the DIAL must be turned clockwise (greater resistance) until the relay output switches its contacts (the red LED must change status). To confirm the adjustment, the reference electrode C must be disconnected and then quickly reconnected, the relay must return to its previous status. If this not happen, a new adjustment must be performed. By doing this, the RNW will be adjusted to the ideal sensitivity point.

### Relay Light Indications

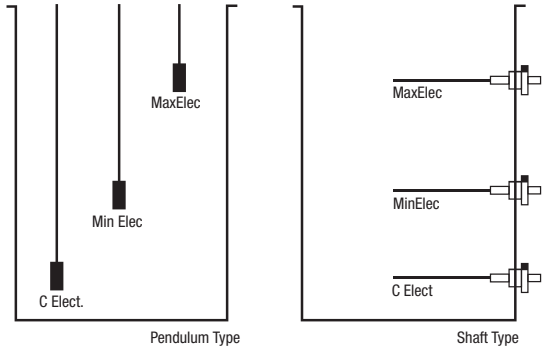
The RNW Level Relay is equipped with indicator LEDs as shown on the right:



Energized Output
Energized Relay

### Functional Diagram

The electrodes are fixed in the reservoir according to desired control levels, minimum or maximum. The reference electrode (C) must be positioned in the lower part, below the maximum and minimum level electrodes. When the system is energized, an alternating current is applied to the reference electrode and,once the liquid comes into contact with the level electrodes, a path is established for the circulation of electrical current between the electrodes. An electronic current compares the current and switches the relay output contacts according to the chosen model (RNW ES or RNW EN). The electrodes are available in 2 versions, shaft (EHW) or pendulum (EPW), the difference between them is the assembly type. The RNW is available in two distinct functions, draining and filling.




*Note: The EHW shaft sensors can be fixed both horizontally and vertically*

# Relays

Level Relays

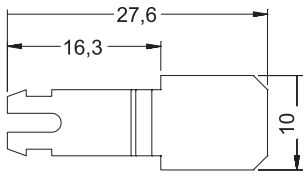
## Level Relays-RNW Series

## Accessories

### Adaptor for screw fixing - PLMP



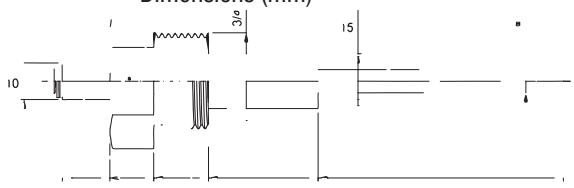
Dimensions (mm)




### Shaft electrode - EHW



Dimensions (mm)

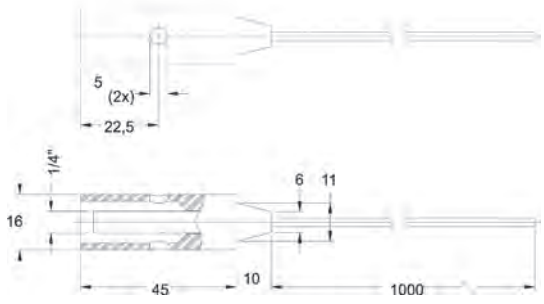



Teflon coated stainless steel shaft
11/4“ chrome hex screw
Length: 300 mm
***Note: Other lengths upon request***
***Maximum sensor cable 100m (110yd)***

### Pendulum electrode - EPW

Dimensions (mm)






Body in natural black polypropylene
Stainless steel sensor shaft
1x10 mm2 gauge flexible connection cable
Cable length: 1000 mm
***Note: Maximum sensor cable 100m (110yd)***



Data is subject to change without notice.

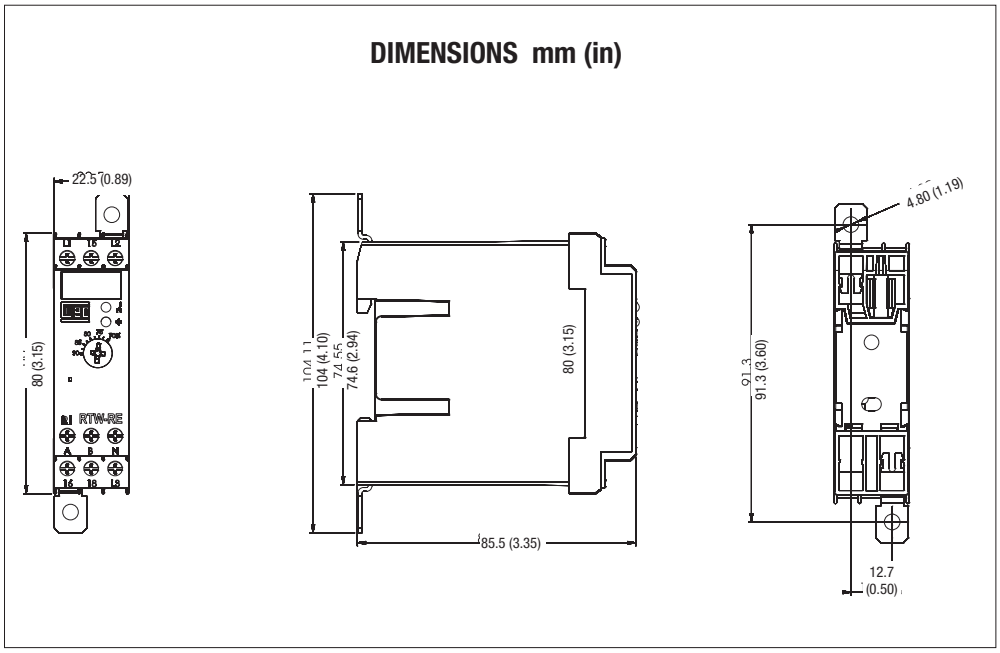
## RNW Series Technical Data

| | Product | | | RNW ES/RNW EN |
|---|---|---|---|---|
| Inputs | Supply (Un) | A1 | VAC | 100-240 50 /60 Hz |
| | | A2 | VDC | 100-240 |
| | Isolated Rated Voltage (Ui) | | V | 300 |
| | Operating Limits | | | 0.85 to 1.1 x Ue |
| | Maximum Consumption | | VA / W | 2 / 1 |
| Outputs | Contacts | 15 - 16 / 18 | | 1 SPDT |
| | Output Contact Capacity (Ie) | | A | 5 (resistive load) |
| | AC-15 in 230 Vca | | | 3 |
| | DC-13 in 24 VDC | | | 1 |
| | DC-13 in 48 VDC | | | 0.45 |
| | DC-13 in 60 VDC | | | 0.35 |
| | DC-13 in 125 VDC | | | 0.2 |
| | DC-13 in 250 VDC | | | 0.1 |
| | A300 : AC-15 | | | |
| | R300 : DC-13 | | | |
| | Rated thermal current (Ith) | | A | 10 (for AC) |
| | | | | 2.5 (for DC) |
| | Fuse (class gL / gG) | | A | 4 |
| | Mechanical Lifespan | | operations | 30 x $10^6$ |
| Characteristics | Temperature | Operation | ºC (F) | -5 to +60 (23...140) |
| | | Storage | | -40 to +85 (-40...185) |
| | Degree of Protection | | | IP20 |
| | Terminal Capacity | Rigid or fexible Cable | $mm^2$ | 1 x (0.5 to 2.5) |
| | | | | 2 x (0.5 to 1.5) |
| | Cable with Terminal | Rigid or fexible Cable/Terminal | $mm^2$ | 1 x (0.5 to 2.5) |
| | | | | 2 x (0.5 to 1.5) |
| | | AWG Solid conductor | AWG | 2 x (30 to 14) |
| | Tightening torque | | N.m | 0.8 to 1.2 |
| | | | lb.in | 7 to 10.6 |
| | Terminal Screws | | | M3 |
| | Assembly Position | | | Any |
| | Resistance to Impacts | | g / ms | 15 / 11 |
| | Resistance to Vibration | | Hz / mm | 10 to 500 / 10 |
| | Weight | | kg | 0.08 |
| | Pollution | | | 2 |
| | Over voltage category | | | II |
| | Sensitivity Adjustment | | kΩ | 0 to 100 |
| | Electrode Voltage | | VCA | 7 |
| Electrodes | Electrode Current | | mA | 0.05 |
| | Maximum length of sensor cable | | m | 100 (Maximum cable capacitance 2.2nF) |
| | Detector operating temperature | - Shaft | ºC (F) | 0 to + 260 (32...500) |
| | | - Pendulum | | 0 to + 60 (32...140) |
| | Allowable detector pressure | - Shaft | $kgf / cm^2$ | 3 |
| | | - Pendulum | | - |
| | Detector Weight | - Shaft | kg | 0.230 |
| | | - Pendulum | | 0.012 |

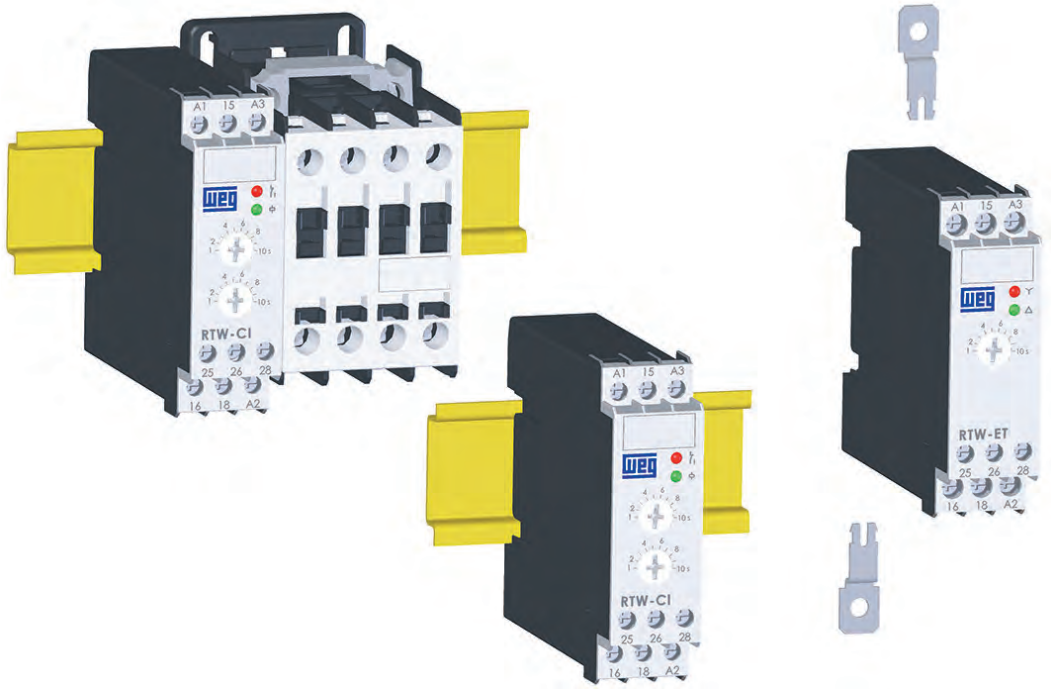
Level Relays

## RNW Series
## Electronic Relay Technical Data

### Dimensions




### Relay Assembly








Data is subject to change without notice.

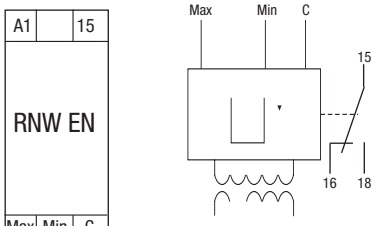
## Level Relays-RNW Series

### RNW EN (Filling)

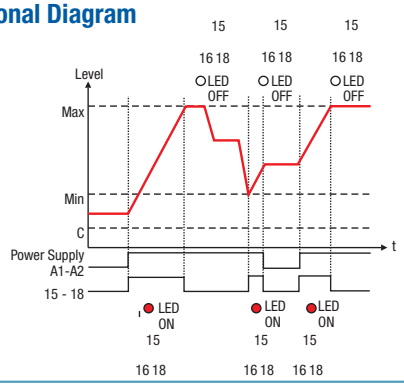


Controls 2 levels using 3 electrodes: the reference electrode (C), the maximum level electrode (Max) and the minimum level electrode (Min). Once powered, the RNW EN start monitoring the liquid level in the reservoir. With the electrode being uncovered at minimum level Min, the output relay will energize (terminals 15-18 closed) causing the liquid level to rise. When the reservoir liquid covers the Max level electrode, the output realy de-energize (terminals 15-18 open) and remains de-energized until the Min level electrode is discovered again. If there is a supply failure, the RNW EN will restart its initial logic.

**Connection Diagrams**




**Functional Diagram**

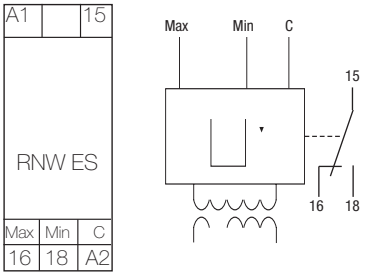



### RNW ES (Draining)

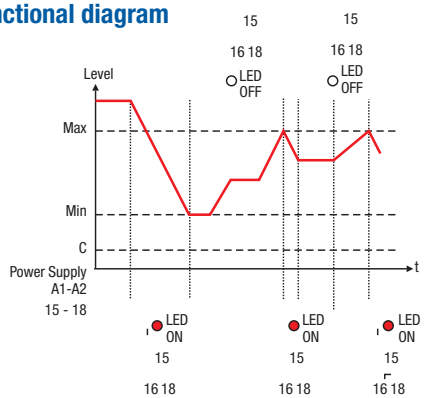


Controls 2 levels using 3 electrodes: the reference electrode (C), the maximum level electrode (Max) and the minimum level electrode (Min). Once powered, the RNW ES start monitoring the liquid level in the reservoir. With the liquid being in contact with the Max level electrode, the relay will energize (terminals 15-18 closed), causing the reservoir liquid level begin to drop. Once the Min level electrode is uncovered by the liquid the relay will energize (terminals 15-18 open) and will remain energized until the liquid enters into contact again with the Max level electrode, restarting the process. If there is a supply failure, the RNW ES will restart its initial logic.

**Connection Diagrams**




**Functional diagram**



# CSW Series - 22mm



The WEG 22mm Pushbuttons and Pilot Device line uses leading edge technology and development. These user friendly pilot devices are used in many different industrial applications and environments.

## Standard Features:

- Fast and Easy Assembly of Pushbuttons and Contact Blocks
- High efficiency self-cleaning contact blocks
- Long life Expectancy
- High Luminosity and color with the LED Lights
- Full line of accessories

UL File No. E330817

### High Performance Illuminated Blocks

The CSW line features the BIDL (integrated LED illuminated blocks) which offer high efficiency - lumens/ Watt - with low thermal dissipation and energy consumption. The integrated construction guarantees high resistance against vibrations and maintenance-free operation.





Data is subject to change without notice.

## Flush [1]

| | Color | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|
|  0.021 kg | White | CSW-BF0 WH | $5 | Z5 |
| | Red | CSW-BF1 WH | $5 | |
| | Green | CSW-BF2 WH | $5 | |
| | Yellow | CSW-BF3 WH | $5 | |
| | Blue | CSW-BF4 WH | $5 | |
| | Black | CSW-BF5 WH | $5 | |

## Guarded

| Image | Color | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|
|  0.022 kg | White | CSW-BGA0 WH | $5.50 | Z5 |
| | Red | CSW-BGA1 WH | $5.50 | |
| | Green | CSW-BGA2 WH | $5.50 | |
| | Yellow | CSW-BGA3 WH | $5.50 | |
| | Blue | CSW-BGA4 WH | $5.50 | |
| | Black | CSW-BGA5 WH | $5.50 | |

## Extended [1]

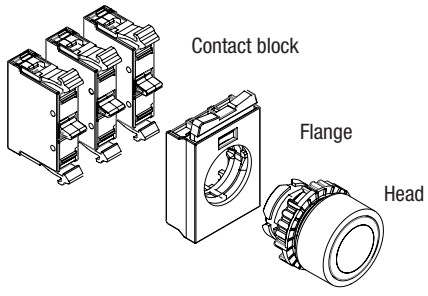
| Image | Color | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|
|  0.021 kg | White | CSW-BS0 WH | $6.50 | Z5 |
| | Red | CSW-BS1 WH | $6.50 | |
| | Green | CSW-BS2 WH | $6.50 | |
| | Yellow | CSW-BS3 WH | $6.50 | |
| | Blue | CSW-BS4 WH | $6.50 | |
| | Black | CSW-BS5 WH | $6.50 | |

## Mushroom - External Diameter: 40 mm [1]

| Image | Color | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|
|  0.024 kg | Red | CSW-BC1 WH | $8.50 | Z5 |
| | Green | CSW-BC2 WH | $8.50 | |

### How to order[2)]

Head
+ Flange
+ Contact block




*Notes: 1) Does not allow the use of contact blocks in the central position of the mounting flanges;*
*2) Check the maximum of recommended contact blocks for each head on pages 302.*

# Pushbuttons and Pilot Lights

Pushbuttons with Latch - Ø22 mm - IP66

## Emergency Pushbuttons with Latch (EN 418 and IEC 60947-5-5)

### Emergency Pushbuttons with Latch - External Diameter: 42 mm[2)]

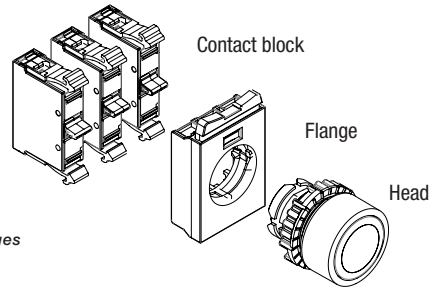
| Image | Actuations | Signaling | Color | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|---|
|  0.049 kg | Pull to release | - | Red | CSW-BESP WH | $15 | Z5 |
|  0.049 kg | Twist to release | - | Red | CSW-BESG WH | $15 | |
|  0.114 kg | Key to release[1)] | - | Red | CSW-BESY WH | $45 | |
|  | GBES-02; Use with: CSW-BESP WH, CSW-BESG WH, CSW-BESY WH | | | | | |

### Emergency Pushbuttons with Latch - External Diameter: 40 mm[2)]

| Image | Actuations | Color | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|
|  0.027 kg | Twist to release | Red | CSW-BEG WH | $13 | Z5 |
|  0.091 kg | With key[1)] | Red | CSW-BEY WH | $40 | |
|  | APEG-02; Use with: CSW-BCT1 WH, CSW-BCY1 WH | | | | |

### How to order[3)]

Head
+ Flange
+ Contact block




*Notes:*
*1) Keys with different codes are available upon request.*
*2) Does not allow the use of contact blocks in the central position of the mounting flanges*
*3) Check the maximum of recommended contact blocks for each head on page 302.*



Data is subject to change without notice.

## Illuminated Pushbuttons - Ø22 mm - IP66

### Flush[1)]

| Image | Color | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|
|  0.021 kg | White | CSW-BFI0 WH | $8.50 | Z5 |
| | Red | CSW-BFI1 WH | $8.50 | |
| | Green | CSW-BFI2 WH | $8.50 | |
| | Yellow | CSW-BFI3 WH | $8.50 | |
| | Blue | CSW-BFI4 WH | $8.50 | |
| | Orange | CSW-BFI4 WH [3] | $8.50 | |

### Extended[1)]

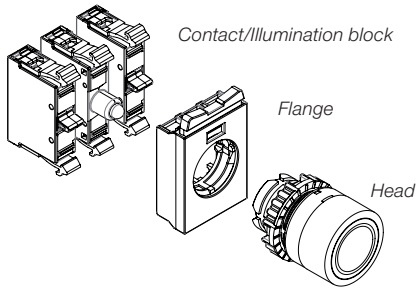
| Image | Color | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|
|  0.021 kg | White | CSW-BSI0 WH | $8.50 | Z5 |
| | Red | CSW-BSI1 WH | $8.50 | |
| | Green | CSW-BSI2 WH | $8.50 | |
| | Yellow | CSW-BSI3 WH | $8.50 | |
| | Blue | CSW-BSI4 WH | $8.50 | |
| | Orange | CSW-BSI6 WH [3] | $8.50 | |

### Mushroom - External Diameter: Ø40 mm[1)]

| Image | Color | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|
|  0.026 kg | White | CSW-BCI0 WH | $10 | Z5 |
| | Red | CSW-BCI1 WH | $10 | |
| | Green | CSW-BCI2 WH | $10 | |
| | Yellow | CSW-BCI3 WH | $10 | |
| | Blue | CSW-BCI4 WH | $10 | |
| | Orange | CSW-BCI6 WH [3] | $10 | |

### How to order[2)]

Head
+ Flange
+ Contact block
+ Illumination block

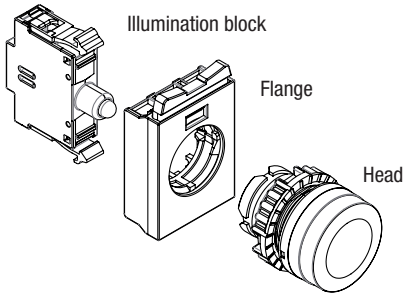



### Pilot Lights[1)]

| Image | Color | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|
|  0.016 kg | White | CSW-SD0 WH | $7.30 | Z5 |
| | Red | CSW-SD1 WH | $7.30 | |
| | Green | CSW-SD2 WH | $7.30 | |
| | Yellow | CSW-SD3 WH | $7.30 | |
| | Blue | CSW-SD4 WH | $7.30 | |
| | Orange | CSW-SD6 WH [3] | $7.30 | |

### How to order

Head
+ Flange
+ Illumination block




*Notes: 1) Allows illumination through LED or lamp block*
*2) Check the maximum of recommended contact blocks for each head*
*3) For better lighting performance use yellow LED block with this device*

# Pushbuttons and Pilot Lights

## 2 Positions Selectors - Ø22 mm - IP66

### Knob



0.025 kg

| Position | | Diagram | Selector angle | Color[1] | Part Number | List Price | Multiplier |
|---|---|---|---|---|---|---|---|
| 0 I | Fixed | 1 | 45º | ● Black | CSW-CK2F45 WH | $13 | Z5 |
| 0 I | With return | 1 | 45º | ● Black | CSW-CK2R45 WH | $15 | |
| 0 I | Fixed | 1 | 90º | ● Black | CSW-CK2F90 WH | $13 | |
| 0 I | With return | 1 | 90º | ● Black | CSW-CK2R90 WH | $15 | |

### Lever



0.025 kg

| Position | | Diagram | Selector angle | Color[1] | Part Number | List Price | Multiplier |
|---|---|---|---|---|---|---|---|
| 0 I | Fixed | 1 | 45º | ● Black | CSW-CA2F45 WH | $14 | Z5 |
| 0 I | With return | 1 | 45º | ● Black | CSW-CA2R45 WH | $16 | Z5 |
| 0 I | Fixed | 1 | 90º | ● Black | CSW-CA2F90 WH | $14 | Z5 |
| 0 I | With return | 1 | 90º | ● Black | CSW-CA2R90 WH | $16 | Z5 |

### With Key[2)3)]



0.087 kg

| Position | | Diagram | Selector angle | Color[1] | Part Number | List Price | Multiplier |
|---|---|---|---|---|---|---|---|
| 0 I | Fixed | 1 | 45º | ● Black | CSW-CY2F45 WH | $41 | Z5 |
| 0 I | With return | 1 | 45º | ● Black | CSW-CY2R45 WH | $43 | Z5 |
| 0 I | Fixed | 1 | 90º | ● Black | CSW-CY2F90 WH | $41 | Z5 |
| 0 I | With return | 1 | 90º | ● Black | CSW-CY2R90 WH | $43 | Z5 |

**Diagram 1**

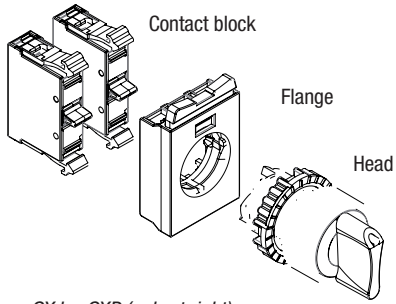
| Handle position | Mounting position in the flange | | | | |
|---|---|---|---|---|---|
| | - | 2 | 3 | 1 | - |
| | 4 | 2 | 5 | 1 | 3 |
| 0 | □ | □ | - | □ | □ |
| I | ■ | ■ | | ■ | ■ |

**Legend**

□ Contacts in the rest position.
■ Contacts operated.

### How to order[4)]

Head
+ Flange
+ Contact block




*Notes: 1) Selector switches in other colors are available under request;*
*2) Keys with different codes are available under request;*
*3) Key is released in any position. For key release in specific positions, please replace CY by: CYD (only at right), CYE (only at left) and CYC (only at center);*
*4) Check the maximum of recommended contact blocks for each head on page 302.*



Data is subject to change without notice.

## A3 Positions Selectors - Ø22 mm - IP66 CW

### Knob



0.025 kg

| Position | | Diagram | Selector angle | Color[1] | | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|---|---|---|
| I 0 II | Fixed | 1 | 45º | ● | Black | CSW-CK3F45 WH | $13 | Z5 |
| I 0 II | With return | 1 | 45º | ● | Black | CSW-CK3R45 WH | $15 | |
| I 0 II | With return from the right | 1 | 45º | ● | Black | CSW-CK3RD45 WH | $15 | |
| I 0 II | With return from the left | 1 | 45º | ● | Black | CSW-CK3RE45 WH | $15 | |

### Lever



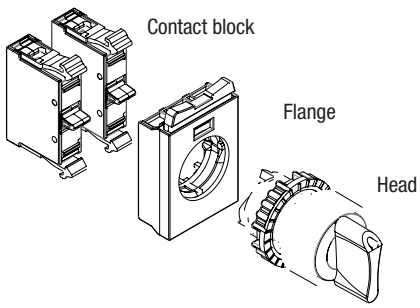
0.025 kg

| Position | | Diagram | Selector angle | Color[1] | | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|---|---|---|
| I 0 II | Fixed | 1 | 45º | ● | Black | CSW-CA3F45 WH | $14 | Z5 |
| I 0 II | With return | 1 | 45º | ● | Black | CSW-CA3R45 WH | $16 | |
| I 0 II | With return from the right | 1 | 45º | ● | Black | CSW-CA3RD45 WH | $16 | |
| I 0 II | With return from the left | 1 | 45º | ● | Black | CSW-CA3RE45 WH | $16 | |

**Diagram 1**

| I 0 II | Handle position | Mounting position in the flange | | | | |
|---|---|---|---|---|---|---|
| | | - | 2 | 3 | 1 | - |
| I 0 II | | 4 | 2 | 5 | 1 | 3 |
| | I | ■ | ■ | - | □ | □ |
| I 0 II | 0 | □ | □ | | □ | □ |
| I 0 II | II | □ | □ | | ■ | ■ |

Legend
□ Contacts in the rest position.
■ Contacts operated.




### How to order

Head
+ Flange
+ Contact block

*Notes: 1) Selector switches in other colors are available under request*
*2) Check the maximum of recommended contact blocks for each head on page 302.*

# Pushbuttons and Pilot Lights

## A3 Positions Selectors - Ø22 mm - IP66 CW

### With Key[2)3)]



0.087 kg

| Position | | Diagram | Selector angle | Color[1)] | | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|---|---|---|
| I 0 II | Fiixed | 1 | 45º | ● | Black | CSW-CY3F45 WH | $41 | Z5 |
| I 0 II | With return | 1 | 45º | ● | Black | CSW-CY3R45 WH | $43 | |
| I 0 II | With return from the right | 1 | 45º | ● | Black | CSW-CY3RD45 WH | $43 | |
| I 0 II | With return from the left | 1 | 45º | ● | Black | CSW-CY3RE45 WH | $43 | |

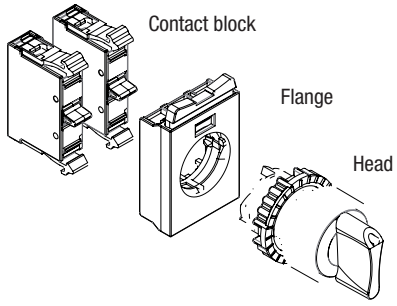
**Diagram 1**

| Handle position | Mounting position in the flange | | | | |
|---|---|---|---|---|---|
| | - | 2 | 3 | 1 | - |
| | 4 | 2 | 5 | 1 | 3 |
| I | ■ | ■ | | □ | □ |
| 0 | □ | □ | - | □ | □ |
| II | □ | □ | | ■ | ■ |

Legend
□ Contacts in the rest position.
■ Contacts operated.

### How to order[4)]

Head
+ Flange
+ Contact block




*Notes: 1) Selector switches in other colors are available under request;*
*2) Keys with different codes are available under request;*
*3) Key is released in any position. For key release in specific positions, please replace CY by: CYD (only at right), CYE (only at left) and CYC (only at center);*
*4) Check the maximum of recommended contact blocks for each head on page 302.*

### Reset Pushbutton with Shaft

| Image | Description | Catalog Number | Weight (kg) | List Price | Multipler |
|---|---|---|---|---|---|
|  | Flush pushbutton - blue - engraved reset - with shaft. Length: max. 250 mm and min. 22.5 mm | CSW-BHF437 | 0.045 | $12 | Z5 |



Data is subject to change without notice.

Illuminated Selectors - Ø22 mm - IP66

## 2 Positions Illuminated Selectors

| Image | Position | | Diagram | Selector angle | Color | | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|---|---|---|---|
|  0.020 kg | 0 I | Fixed | 1 | 90º | ○ | White | CSW-CKI2F900 WH | $8 | Z5 |
| | | | | | ● | Red | CSW-CKI2F901 WH | $8 | |
| | | | | | ● | Green | CSW-CKI2F902 WH | $8 | |
| | | | | | ● | Yellow | CSW-CKI2F903 WH | $8 | |
| | | | | | ● | Blue | CSW-CKI2F904 WH | $8 | |
| | | | | | ● | Orange | CSW-CK12F906 WH [1] | $8 | |

## 3 Positions Illuminated Selectors

| Image | Position | | Diagram | Selector angle | Color | | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|---|---|---|---|
|  0.020 kg | I 0 II | Fixed | 2 | 45º | ○ | White | CSW-CKI3F450 WH | $8 | Z5 |
| | | | | | ● | Red | CSW-CKI3F451 WH | $8 | |
| | | | | | ● | Green | CSW-CKI3F452 WH | $8 | |
| | | | | | ● | Yellow | CSW-CKI3F453 WH | $8 | |
| | | | | | ● | Blue | CSW-CKI3F454 WH | $8 | |
| | | | | | ● | Orange | CSW-CKI3F456 WH [1] | $8 | |
| | I 0 II | With return | 2 | 45º | ○ | White | CSW-CKI3R450 WH | $8.50 | |
| | | | | | ● | Red | CSW-CKI3R451 WH | $8.50 | |
| | | | | | ● | Green | CSW-CKI3R452 WH | $8.50 | |
| | | | | | ● | Yellow | CSW-CKI3R453 WH | $8.50 | |
| | | | | | ● | Blue | CSW-CKI3R454 WH | $8.50 | |
| | | | | | ● | Orange | CSW-CKI3R456 WH [1] | $8.50 | |
| | I 0 II | With return from the right | 2 | 45º | ○ | White | CSW-CKI3RD450 WH | $8.50 | |
| | | | | | ● | Red | CSW-CKI3RD451 WH | $8.50 | |
| | | | | | ● | Green | CSW-CKI3RD452 WH | $8.50 | |
| | | | | | ● | Yellow | CSW-CKI3RD453 WH | $8.50 | |
| | | | | | ● | Blue | CSW-CKI3RD454 WH | $8.50 | |
| | | | | | ● | Orange | CSW-CKI3RD456 WH [1] | $8.50 | |
| | I 0 II | With return from the left | 2 | 45º | ○ | White | CSW-CKI3RE450 WH | $8.50 | |
| | | | | | ● | Red | CSW-CKI3RE451 WH | $8.50 | |
| | | | | | ● | Green | CSW-CKI3RE452 WH | $8.50 | |
| | | | | | ● | Yellow | CSW-CKI3RE453 WH | $8.50 | |
| | | | | | ● | Blue | CSW-CKI3RE454 WH | $8.50 | |
| | | | | | ● | Orange | CSW-CKI3RE454 WH [1] | $8.50 | |

**Diagram 1**

| Handle position | Mounting position in the flange | | | | | Flange |
|---|---|---|---|---|---|---|
| | - | 2 | 3 | 1 | - | 3P |
| | 4 | 2 | 5 | 1 | 3 | 5P |
| 0 | □ | □ | ☼ | □ | □ | |
| I | ■ | ■ | | ■ | ■ | |

**Diagram 2**

| Handle position | Mounting position in the flange | | | | | Flange |
|---|---|---|---|---|---|---|
| | - | 2 | 3 | 1 | - | 3P |
| | 4 | 2 | 5 | 1 | 3 | 5P |
| I | ■ | ■ | | □ | □ | |
| 0 | □ | □ | ☼ | □ | □ | |
| II | □ | □ | | ■ | ■ | |

Legend
- □ Contacts in the rest position.
- ■ Contacts operated.
- ☼ Mounting position for LED blocks in illuminated switches.

POTENTIOMETER

**CSW-POT_W**

LIST PRICE $145



**CSW-POT __ W**

Resistance

| | | | |
|---|---|---|---|
| **1** | - 1kΩ | **10** | - 10kΩ |
| **2** | - 2kΩ | **50** | - 50kΩ |
| **5** | - 5kΩ | | |

*Note:*
*1) For better lighting performance use yellow LED Block*

# Pushbuttons and Pilot Lights

## Flush Double Pushbutton - Degree of Protection IP40[1)2)4)] - (refer to 1. How to order)


0.034 kg

| Color | | Engraving | Reference | List Price | Multiplier |
|---|---|---|---|---|---|
| Green | I | CSW-BD WH | 11.50 | Z5 |
| Red | O | | | |
| Green | START | CSW-BD21SS WH | 11.50 | |
| Red | STOP | | | |

## Double Pushbutton - (refer to 1. How to order)


0.034 kg

| Frontal | Color | | Engraving | Reference | List Price | Multiplier |
|---|---|---|---|---|---|---|
| Flush | Green | I | CSW2-BDF2110 WH | 14.00 | Z5 |
| Flush | Red | O | | | |
| Flush | Green | START | CSW2-BDF21SS WH | 14.00 | |
| Flush | Red | STOP | | | |

## Extended Double Pushbutton - (refer to 1. How to order)


0.034 kg

| Frontal | Color | | Engraving | Reference | List Price | Multiplier |
|---|---|---|---|---|---|---|
| Flush | Green | I | CSW2-BDS2110 WH | 14.00 | Z5 |
| Extended | Red | O | | | |
| Flush | Green | START | CSW-BDS21SS WH | 14.00 | |
| Extended | Red | STOP | | | |

## Triple Pushbutton - (refer to 1. How to order)


0.034 kg

| Frontal | Color | | Engraving | Reference | List Price | Multiplier |
|---|---|---|---|---|---|---|
| Flush | Green | I | CSW2-BTF2410R WH | 16.00 | Z5 |
| Extended | Blue | RESET | | | |
| Flush | Red | O | | | |

## Extended Triple Pushbutton - (refer to 1. How to order)


0.034 kg

| Frontal | Color | | Engraving | Reference | List Price | Multiplier |
|---|---|---|---|---|---|---|
| Flush | Green | I | CSW2-BTS2410R WH | 16.00 | Z5 |
| Extended | Blue | RESET | | | |
| Extended | Red | O | | | |

## Flush Double Pushbutton w/ illumination - (refer to 2. How to order)[1]


0.025g

| Frontal | Color | | Engraving | Reference | List Price | Multiplier |
|---|---|---|---|---|---|---|
| Flush | Green | I | CSW2-BDFI2110 WH | 14.00 | Z5 |
| Flush | Red | O | | | |
| Flush | Green | START | CSW2-BDFI21SS WH | 14.00 | |
| Flush | Red | STOP | | | |

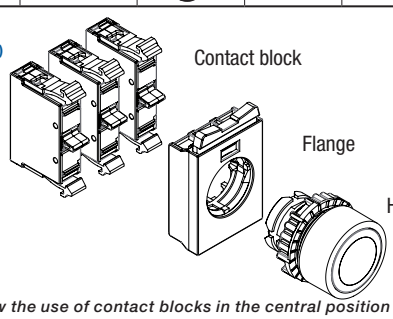
## Extended Double Pushbutton w/ illumination - (refer to 2. How to order)[1]


0.025g

| Frontal | Color | | Engraving | Reference | List Price | Multiplier |
|---|---|---|---|---|---|---|
| Flush | Green | I | CSW2-BDSI2110 WH | 14.00 | Z5 |
| Extended | Red | O | | | |
| Flush | Green | START | CSW2-BDSI21SS WH | 14.00 | |
| Extended | Red | STOP | | | |

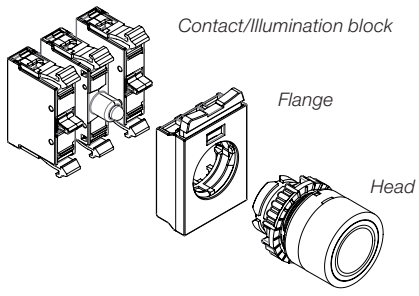
### 1. How to order[3)4)]

Head
+ Flange
+ Contact block




### 2. How to order[3)4)]

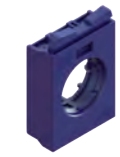
- Head
+ Flange
+ Contact block
+ Illumination block




*Notes:*
*1) Does not allow the use of contact blocks in the central position of the mounting flanges*
*2) To increase the Degree of Protection, use the APBD silicon protective cover*
*3) Check the maximum of recommended contact blocks for each head on page 302.*
*4) Use blue flange and contact block components*


Data is subject to change without notice.

## Flanges[1]

| | Description | Standard packing | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|
|  0.010 kg[2)] | 3-position mounting flange for blue contact blocks<br>Allows the mounting of extras contact blocks due to front-back system | 1 piece | AF3F | $2.17 | Z5 |
| | 5-position mounting flange for blue contact blocks<br>Allows the mounting of extras contact blocks due to front-back system | 1 piece | AF5F | $6.06 | |

## Contact Blocks[1)]

| | Contacts | Diagram | Standard packing | Compatible flange | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|---|---|
|  0.015 kg[2)] | 1NO |  | 1 piece | AF3F | BC10F-CSW | $5.00 | Z5 |
| | 1NC |  | 1 piece | | BC01F-CSW | $5.00 | |
| | 1NO EARLY MAKE |  | 1 piece | AF3F | BCA10F-CSW | $5.55 | |
| | 1NC LATE BREAK |  | 1 piece | | BCR01F-CSW | | |

## Self-Monitoring Contact Block for Emergency Pushbuttons[1)2)]

| | Contacts | Diagram | Standard packing | Compatible flange | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|---|---|
|  0.002 kg[2)] | 1NC |  | 1 piece | AF3F | BCM01F-CSW | $27.37 | Z5 |

*Notes:*
*1) Not compatible with the PBW control stations line. For control stations accessories, please refer to the page 295 and 296. of this catalog*
*2) The NO contact close when assembled correctly in the flange*

# Pushbuttons and Pilot Lights

## Accessories for CSW (22mm)

### Illumination Blocks with Integrated LED[1)2)3)]



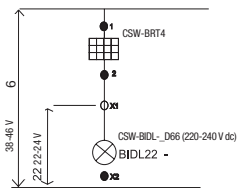
0.016 kg

| Voltage | Color | | Diagram | Standard packing | Compatible flange | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|---|---|---|
| 12 V ac/dc | ○ | White |  | 1 piece | AF3F | CSW-BIDLF0E25 | $16 | Z5 |
| | ● | Red | | | | CSW-BIDLF1E25 | $16 | |
| | ● | Green | | | | CSW-BIDLF2E25 | $16 | |
| | ● | Yellow | | | | CSW-BIDLF3E25 | $16 | |
| | ● | Blue | | | | CSW-BIDLF4E25 | $16 | |
| 24 V ac/dc | ○ | White | | | | CSW-BIDLF0E26 | $16 | |
| | ● | Red | | | | CSW-BIDLF1E26 | $16 | |
| | ● | Green | | | | CSW-BIDLF2E26 | $16 | |
| | ● | Yellow | | | | CSW-BIDLF3E26 | $16 | |
| | ● | Blue | | | | CSW-BIDLF4E26 | $16 | |
| 48 V ac/dc | ○ | White | | | | CSW-BIDLF0E27 | $16 | |
| | ● | Red | | | | CSW-BIDLF1E27 | $16 | |
| | ● | Green | | | | CSW-BIDLF2E27 | $16 | |
| | ● | Yellow | | | | CSW-BIDLF3E27 | $16 | |
| | ● | Blue | | | | CSW-BIDLF4E27 | $16 | |
| 110-130 V ac | ○ | White | | | | CSW-BIDLF0E10 | $16 | |
| | ● | Red | | | | CSW-BIDLF1E10 | $16 | |
| | ● | Green | | | | CSW-BIDLF2E10 | $16 | |
| | ● | Yellow | | | | CSW-BIDLF3E10 | $16 | |
| | ● | Blue | | | | CSW-BIDLF4E10 | $16 | |
| 220-240 V ac | ○ | White | | | | CSW-BIDLF0D66 | $16 | |
| | ● | Red | | | | CSW-BIDLF1D66 | $16 | |
| | ● | Green | | | | CSW-BIDLF2D66 | $16 | |
| | ● | Yellow | | | | CSW-BIDLF3D66 | $16 | |
| | ● | Blue | | | | CSW-BIDLF4D66 | $16 | |
| 125 V dc | ○ | White | | | | CSW-BIDLF0E10 | $16 | |
| | ● | Red | | | | CSW-BIDLF1E10 | $16 | |
| | ● | Green | | | | CSW-BIDLF2E10 | $16 | |
| | ● | Yellow | | | | CSW-BIDLF3E10 | $16 | |
| | ● | Blue | | | | CSW-BIDLF4E10 | $16 | |

### Voltage Reduction Blocks[1)2)3)]



0.016 kg

| Description | $U_e$ | Diagram | Standard packing | Compatible flange | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|---|---|
| For use with Integrated LED blocks models: CSW-BIDL(F)_D66 (220-240 V ac) | 380-460 V ac |   | 1 piece | AF3 AF5 | CSW-BRT4F | $8.88 | Z5 |

*Notes:*
*1) Not compatible with the PBW control stations line. For control stations accessories, please refer to the page 295 and 296. of this catalog*
*2) Unitary weight.*
*3) Not compatible with black flanges*



Data is subject to change without notice.

## Ba9s Socket Lamp Block[1)2)4)]

| | Description | Diagram | Standard packing | Compatible flange | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|---|---|
|  0.013 kg | - For lamps with Ba9s socket<br>- Maximum voltage 380 V (2 W)<br>- Direct V ac/dc<br>- Lamp not included |  | 1 piece | AF3<br>AF5 | CSW-BIDF | $5.27 | Z5 |

## Lamps Ba9s[1)2)]

| | Voltage | Standard packing | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|
|  | 6 V ac/dc | 25 pieces | CSW-LI E48-0.6W | $242.50 | Z5 |
| | 12 V ac/dc | 25 pieces | CSW-LI E25-1.8W | $242.50 | |
| | 24 V ac/dc | 25 pieces | CSW-LI E26-2W | $242.50 | |
| | 48 V ac/dc | 25 pieces | CSW-LI E27-2W | $242.50 | |
| | 60 V ac/dc | 25 pieces | CSW-LI E29-1.2W | $242.50 | |
| | 130 V ac/dc | 25 pieces | CSW-LI E30-2W | $242.50 | |
| 0.005 kg[3)] | 220 V ac/dc | 25 pieces | CSW-LI E31-2W | $242.50 | |

## Illumination Block with Lamp + Resistor + Diode[1)2)4)]

| | Descripction | Diagram | Standard packing | Compatible flange | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|---|---|
|  0.016 kg | - Block voltage: 220 - 240 V ac<br>Includes 120/130 V incandescent lamp<br>- Ba9s socket |  | 1 piece | AF3F<br>AF5F | CSW-BIRDFD66 | $25.34 | Z5 |

## Ba9s Lamps Extraction Tool[4)]

| | Description | Standard packing | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|
|  0.008 kg | Ba9s lamps extraction tool of illumination blocks | 1 piece | ACEF | $5.60 | Z5 |

## Push-on/Push-off Block[1)2)4)]

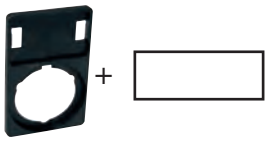
| | Descripction | Standard packing | Compatible flange | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|---|
|  0.019 kg | Push-on/Push-off block for: CSW-BF, CSW-BFI, CSW-BS, CSW-BSI, CSW-BGA, CSW-BC, CSW-BCI.<br>Note: use only with the following contact blocks:<br>- BC01-F (1NC);<br>- BCA10-F (1NO early-make);<br>- BC02-F (2NC). | 1 piece | AF3 | BR-3PF-CSW | $7.97 | Z5 |

*Notes: 1) Not compatible with the PBW control stations line. For control stations accessories, please refer to the page 295 and 296*
*2) Not compatible with double pushbuttons CSW2-BD;*
*3) Unitary weight.*
*4) Not compatible with black flanges*

# Pushbuttons and Pilot Lights

## Accessories for CSW (22mm)

### Plate Holder and Plastic Legend Plate Set[1)]

| | Description | Standard packing | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|
|  0.004 kg[2)] | Plate holder and plastic legend plate set (27 x 18 mm, no engraved, red and black colored) for pilot lights, single pushbuttons and selector switches. | 5 pieces | APP30 | $11.50 | Z5 |
| | Plate holder and plastic legend plate set (27 x 18 mm, no engraved, red and black colored) for double pushbuttons CSW-BD. Not compatible with CSW2-BD. | 1 piece | APP60 | $2.30 | |
|  0.004 kg[2)] | Plate holder and plastic legend plate set (27 x 18 mm, no engraved, translucent) for pilot lights, single pushbuttons and selector switches. | 5 pieces | APP30T | $11.50 | |
| | Plate holder and plastic legend plate set (27 x 18 mm, no engraved, translucent) for double pushbuttons CSW-BD. Not compatible with CSW2-BD. | 1 piece | APP60T | $3 | |

### Reduction Ring[1)]

| | Description | Standard packing | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|
|  0.030 kg | Reduction ring from Ø30 mm to Ø22 mm | 5 pieces | AR30 | $21.25 | Z5 |

*Notes: 1) Not compatible with the PBW control stations line. For control stations accessories, please refer to the page 295 and 296 of this catalog*
*2) Unitary weight.*

### Emergency-Stop Plate[1)]

| | Description | Standard packing | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|
|   0.009 kg[2)] | Legend plate for emergency pushbutton. Text: English | 1 piece | APE-02 | $8.30 | Z5 |



Data is subject to change without notice.

## APP30 Plate Holder and 27 x 18 mm Engraved Plastic Legend Plate Set[1)3)]

*For use with single pushbuttons, pilot lights and selector switches*



0.015 kg[4)]

+ MANUAL

*Standard packing 5 pieces*

### Pushbuttons and Pilot Lights

| Catalog Number | Message | List Price | Multiplier |
|---|---|---|---|
| APP30-01 | CLOSE | $4.20 | |
| APP30-02 | DOWN | $4.20 | |
| APP30-03 | EMERGENCY STOP | $4.20 | |
| APP30-04 | FORWARD | $4.20 | |
| APP30-05 | JOG | $4.20 | |
| APP30-06 | JOG FORWARD | $4.20 | |
| APP30-07 | JOG REVERSE | $4.20 | |
| APP30-08 | LOWER | $4.20 | |
| APP30-09 | OFF | $4.20 | |
| APP30-10 | ON | $4.20 | |
| APP30-11 | OPEN | $4.20 | |
| APP30-12 | POWER ON | $4.20 | |
| APP30-13 | RAISE | $4.20 | |
| APP30-14 | RESET | $4.20 | |
| APP30-147 | FAULT | $4.20 | |
| APP30-15 | REVERSE | $4.20 | |
| APP30-16 | RUN | $4.20 | |
| APP30-17 | START | $4.20 | |
| APP30-18 | STOP | $4.20 | |
| APP30-19 | UP | $4.20 | |
| APP30-20 | FORWARD REVERSE | $4.20 | |
| APP30-21 | HAND AUTO | $4.20 | |
| APP30-22 | JOG RUN | $4.20 | Z5 |
| APP30-23 | MANUAL AUTO | $4.20 | |
| APP30-24 | OFF ON | $4.20 | |
| APP30-25 | OPEN CLOSE | $4.20 | |
| APP30-26 | RUN JOG | $4.20 | |
| APP30-27 | START STOP | $4.20 | |
| APP30-28 | UP DOWN | $4.20 | |
| APP30-30 | FOR OFF REV | $4.20 | |
| APP30-31 | HAND OFF AUTO | $4.20 | |
| APP30-32 | MAN OFF AUTO | $4.20 | |
| APP30-33 | OPEN OFF AUTO | $4.20 | |
| APP30-34 | OPEN OFF CLOSE | $4.20 | |
| APP30-35 | UP OFF DOWN | $4.20 | |
| APP30-36 | ON/OFF | $4.20 | |
| APP30-37 | OPEN/CLOSE | $4.20 | |
| APP30-38 | UP/DOWN | $4.20 | |
| APP30-P00 | 0-100 | $6.00 | |
| APP30-P01 | 0-10 | $6 | |
| APP30-P02 | SPEED 0-10 | $6 | |
| APP30-P03 | SPEED 0-100 | $6 | |
| APP30-149 | AUTO OFF REV | $4.20 | |
| APP30-198 | LOW MED HIGH | $4.20 | |
| APP30-199 | LOW OFF HIGH | $4.20 | |

*Notes: 1) Other engraving option available upon request. APP60 legend plates are also available upon request.*

*2) Red plates are engraved in white*

*3) Not compatible with the PBW Control Stations Line. For control station accessories, please refer to the page 295 and 296.*

*4) Unitary weight*

# Decentralized Control Stations - PBW

## Type 4x Protection

WEG control stations and emergency stop stations, also known as the PBW line, are available for a wide range of applications meeting the most demanding requirements of quality, robustness and modular design. The PBW line has been developed meeting the requirements of international standards such as IEC 60947-5-1, IEC 50102, IEC 60529 and UL 508 and can be used with WEG current pushbuttons and signaling units (CSW series).

## Standard Features:

- IP66/Type 4x degree of protection: accurate design combined with a special sealing gasket assures the degree of protection throughout product life cycle
- Several cable entries: knock-out type entries on the top, base and side, meeting different cable glands with different threads
- Exclusive ID plate holding system: integrated to the construction, allows for standard CSW legend plates
- Captive screws: ensures safe and easy operations without loosing hardware
- Premium polycarbonate construction: non-flammable and UV ray protected, its oversized thickness offers high mechanical resistance
- The PWB line is very cost effective, and inventory is always readily available.



IP66 degree of protection




Exclusive ID plate holding system

UL File No. E330817



Data is subject to change without notice.

## Type 4X Decentralized Control Stations [1)]

| | Number of holes | Color | | Standard packing | Catalog Number | Price | Multiplier |
|---|---|---|---|---|---|---|---|
| | | Cover | Base | | | | |
|  0.114 kg | 1 | Yellow | Black | 1 piece | PBW-1Y | $25 | Z5 |
|  0.114 kg | 1 | Gray | Black | 1 piece | PBW-1 | $25 | Z5 |
|  0.152 kg | 2 | Gray | Black | 1 piece | PBW-2 | $30 | Z5 |
|  0.185 kg | 3 | Gray | Black | 1 piece | PBW-3 | $34 | Z5 |
|  0.215 kg | 4 | Gray | Black | 1 piece | PBW-4 | $41 | Z5 |
|  0.276 kg | 6 | Gray | Black | 1 piece | PBW-6 | $59 | Z5 |

### Emergency Pushbuttons with Decentralized Control Station

| | PBW control station | Pushbuttons | Contact blocks | Plate | Catalog Number | Weight (kg) | List Price | Multiplier |
|---|---|---|---|---|---|---|---|---|
|  | Yellow - 1 hole | Emergency stop CSW-BESG | 1NO + 1NC | Red engraved "EMERGENCY STOP" | PBW1Y-G11 P03 | 0.212 | $48.00 | Z5 |

## Accessories - Mounting in Control Stations

### Contact Block[2)]

| | Description | Contacts | Diagram | Standard packing | Catalog Number | Price | Multiplier |
|---|---|---|---|---|---|---|---|
|  0.015 kg[3)] | Single contact blocks to mounting in control stations or DIN rail 35 mm | 1NO |  | 1 piece | BC10B-CSW | $5.00 | Z5 |
| | | 1NC |  | 1 piece | BC01B-CSW | $5.00 | Z5 |

*Notes: 1) Compatible with all single of the CSW line pushbuttons, selector switches and pilot lights. To avoid interferences and ensure the performance when use a mushroom pushbutton beside another pushbutton, WEG recommend maintaining an empty hole between the pushbuttons. To close the hole use the ATR accessory;*
*2) Blocks specific for mounting in base or PBW plastic control stations or DIN rail 35mm;*
*3) Unitary weight.*

# Pushbuttons and Pilot Lights

## Accessories for CSW (22mm)

### Mounting in Control Stations

#### Illumination Blocks with Integrated LED[1)]

| Image | Voltage | Color | | Diagram | Standard packing | Catalog Number | Price | Multiplier |
|---|---|---|---|---|---|---|---|---|
|  0.016 kg | 12 V ac/dc | ○ | White |  | 1 piece | CSW-BIDLB-0E25 | $16.60 | Z5 |
| | | ● | Red | | | CSW-BIDLB-1E25 | $16.60 | |
| | | ● | Green | | | CSW-BIDLB-2E25 | $16.60 | |
| | | ● | Yellow | | | CSW-BIDLB-3E25 | $16.60 | |
| | | ● | Blue | | | CSW-BIDLB-4E25 | $16.60 | |
| | 24 V ac/dc | ○ | White | | | CSW-BIDLB-0E26 | $16.60 | |
| | | ● | Red | | | CSW-BIDLB-1E26 | $16.60 | |
| | | ● | Green | | | CSW-BIDLB-2E26 | $16.60 | |
| | | ● | Yellow | | | CSW-BIDLB-3E26 | $16.60 | |
| | | ● | Blue | | | CSW-BIDLB-4E26 | $16.60 | |
| | 48 V ac/dc | ○ | White | | | CSW-BIDLB-0E27 | $16.60 | |
| | | ● | Red | | | CSW-BIDLB-1E27 | $16.60 | |
| | | ● | Green | | | CSW-BIDLB-2E27 | $16.60 | |
| | | ● | Yellow | | | CSW-BIDLB-3E27 | $16.60 | |
| | | ● | Blue | | | CSW-BIDLB-4E27 | $16.60 | |
| | 110-130 V ac | ○ | White | | | CSW-BIDLB-0E10 | $16.60 | |
| | | ● | Red | | | CSW-BIDLB-1E10 | $16.60 | |
| | | ● | Green | | | CSW-BIDLB-2E10 | $16.60 | |
| | | ● | Yellow | | | CSW-BIDLB-3E10 | $16.60 | |
| | | ● | Blue | | | CSW-BIDLB-4E10 | $16.60 | |
| | 220-240 V ac | ○ | White | | | CSW-BIDLB-0D66 | $16.60 | |
| | | ● | Red | | | CSW-BIDLB-1D66 | $16.60 | |
| | | ● | Green | | | CSW-BIDLB-2D66 | $16.60 | |
| | | ● | Yellow | | | CSW-BIDLB-3D66 | $16.60 | |
| | | ● | Blue | | | CSW-BIDLB-4D66 | $16.60 | |
| | 125 V dc | ○ | White | | | CSW-BIDLB-0E10 | $16.60 | |
| | | ● | Red | | | CSW-BIDLB-1E10 | $16.60 | |
| | | ● | Green | | | CSW-BIDLB-2E10 | $16.60 | |
| | | ● | Yellow | | | CSW-BIDLB-3E10 | $16.60 | |
| | | ● | Blue | | | CSW-BIDLB-4E10 | $16.60 | |



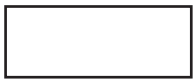
*Note: 1) Blocks specific for mounting in base or PBW plastic control stations.*



Data is subject to change without notice.

# Mounting in Flanges or Control Stations

## Plastic Legend Plates

| Image | Description | Standard packing | Catalog Number | Price | Multiplier |
|---|---|---|---|---|---|
|  0.006 kg[2)] | Black and red legend plates 27 x 18 mm without engraving | 5 pieces | AP30 | $8.00 | Z5 |
|  0.006 kg[2)] | Translucent legend plates 27x18 mm without engraving | 5 pieces | AP30T | $8.00 | Z5 |

## Emergency-Stop Plate

| Image | Description | Standard packing | Catalog Number | Price | Multiplier |
|---|---|---|---|---|---|
|   0.009 kg | Legend plate for emergency pushbutton. | 1 piece | APEC-02 | $7.50 | Z5 |

## Fixing Ring Tool

| Image | Description | Standard packing | Catalog Number | Price | Multiplier |
|---|---|---|---|---|---|
|  0.017 kg | Tool for the insertion/removal of the CSW pushbuttons, pilot lights and selector switches fixing ring | 1 piece | CPAW | $5.60 | Z5 |

## Spare Lens for Pilot Lights

| Image | Description | Color | Standard packing | Catalog Number | Price | Multiplier |
|---|---|---|---|---|---|---|
|  0.004 kg[2] | Lens to replace the pilot lights color | ○ | 5 pieces | ALSD0 | $10.50 | Z5 |
| | | ● | | ALSD1 | $10.50 | |
| | | ● | | ALSD2 | $10.50 | |
| | | ● | | ALSD3 | $10.50 | |
| | | ● | | ALSD4 | $10.50 | |

## Engraved Pushbutton Caps[1)]

| Image | Description | Function | Standard packing | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|---|
|  | Engraved caps for flush pushbuttons[1)] |  | 5 pieces | ACB1-30 | $1.50 | Z5 |
| | |  | | ACB5-31 | | |
| | |  | | ACB5-32 | | |
| | |  | | ACB5-33 | | |
| | |  | | ACB5-34 | | |
| | |  | | ACB5-35 | | |
| | |   | | ACB4-37 | | |

*Notes:* *1) Other engraving options under request;*
*2) Unitary weight.*

# Pushbuttons and Pilot Lights

## Accessories for CSW (22mm)

### Common Accessories - Mounting in Flanges or Control Stations

### Pushbutton Caps

| Image | Description | Color | Standard packing | Catalog Number | Price | Multiplier |
|---|---|---|---|---|---|---|
|  0.005 kg[2] | Caps to replace the flush pushbuttons colors | ○ | 5 pieces | ACB0 | $.90 | Z5 |
| | | 🔴 | | ACB1 | $.90 | |
| | | 🟢 | | ACB2 | $.90 | |
| | | 🟡 | | ACB3 | $.90 | |
| | | 🔵 | | ACB4 | $.90 | |
| | | ⚫ | | ACB5 | $.90 | |
| | | All six colors | 6 pieces | ACB | $.90 | |

### Engraved Illuminated Pushbutton Caps[1]

| Image | Description | Color | | Standard packing | Catalog Number | Price | Multiplier |
|---|---|---|---|---|---|---|---|
|  | Engraved internal caps for flush illuminated and extended illuminated pushbutton[1] | ◯ | Stop | 5 pieces | ALBI-30 | $2.00 | Z5 |
| | | \| | Start | | ALBI-31 | | |
| | | → | Rectilinear movement | | ALBI-32 | | |
| | | ↻ | Clockwise rotation | | ALBI-33 | | |
| | | ↺ | Counter-clockwise rotation | | ALBI-34 | | |
| | | ⟿ | Feed | | ALBI-35 | | |

### Hole Plug

| Image | Description | Standard packing | Catalog Number | Price | Multiplier |
|---|---|---|---|---|---|
|  0.010 kg[2] | Round plug for unused Ø22 mm holes | 5 pieces | ATR | $24.50 | Z5 |

### Single Pushbutton Protection

| Image | Description | Standard packing | Catalog Number | Price | Multiplier |
|---|---|---|---|---|---|
|  0.010 kg[2] | Silicon additional protective cover for flush pushbuttons (BF) and pilot lights (SD) | 5 pieces | APBF | $38.50 | Z5 |
| | Silicon additional protective cover for illuminated flush pushbuttons (BFI), illuminated extended pushbuttons (BSI) and extended pushbuttons (BS) | | APBI | $49.50 | Z5 |

### Double Pushbutton Protection[3]

| Image | Description | Standard packing | Catalog Number | Price | Multiplier |
|---|---|---|---|---|---|
|  0.010 kg[2] | Silicon protective cover for double pushbuttons CSW-BD (IP40) to ensure IP66 Degree of Protection | 5 pieces | APBD | $15.60 | Z5 |

*Notes: 1) Other engraving options under request*
*2) Unitary weight*
*3) Not compatible with PBW Control Station.*



Data is subject to change without notice.

## Plastic Engraved 27 x 18 mm Legend Plates[1)]




*Standard packing*
*5 pieces*

0.020 kg[3)]

### Single pushbuttons and pilot lights

| Catalog Number | Engraving | Price | Multiplier |
|---|---|---|---|
| AP30-204 | HAND | $1.75 | Z5 |
| AP30-205 | AUTO | $1.75 | |
| AP30-18[2)] | STOP | $1.75 | |
| AP30-11 | OPEN | $1.75 | |
| AP30-01 | CLOSE | $1.75 | |
| AP30-19 | UP | $1.75 | |
| AP30-02 | DOWN | $1.75 | |
| AP30-04 | FORWARD | $1.75 | |
| AP30-15 | REVERSE | $1.75 | |
| AP30-10 | ON | $1.75 | |
| AP30-132 | OFF | $1.75 | |
| AP30-12 | POWER ON | $1.75 | |
| AP30-14 | RESET | $1.75 | |
| AP30-17 | START | $1.75 | |
| AP30-16 | RUN | $1.75 | |
| AP30-206 | FAST | $1.75 | |
| AP30-207 | SLOW | $1.75 | |
| AP30-208 | RIGHT | $1.75 | |
| AP30-209 | LEFT | $1.75 | |
| AP30-210 | INCH | $1.75 | |
| AP30-03[2)] | EMERGENCY STOP | $1.75 | |
| AP30-05 | JOG | $1.75 | |
| AP30-06 | JOG FORWARD | $1.75 | |
| AP30-07 | JOG REVERSE | $1.75 | |
| AP30-08 | LOWER | $1.75 | |
| AP30-13 | RAISE | $1.75 | |
| AP30-147 | FAULT | $1.75 | |
| AP30-129 | MANUAL | $1.75 | |

### 2-position selector switches

| Catalog Number | Engraving | | Price | Multiplier |
|---|---|---|---|---|
| AP30-21 | HAND | AUTO | $1.75 | Z5 |
| AP30-27 | START | STOP | $1.75 | |
| AP30-20 | FOR | REV | $1.75 | |
| AP30-22 | JOG | RUN | $1.75 | |

| Catalog Number | Engraving | | Price | Multiplier |
|---|---|---|---|---|
| AP30-24 | OFF | ON | $1.75 | Z5 |
| AP30-25 | OPEN | CLOSE | $1.75 | |
| AP30-26 | RUN | JOG | $1.75 | |

### 3-position selector switches

| Catalog Number | Engraving | | | Price | Multiplier |
|---|---|---|---|---|---|
| AP30-30 | FOR | OFF | REV | $1.75 | Z5 |
| AP30-32 | MAN | OFF | AUTO | $1.75 | |
| AP30-33 | OPEN | OFF | AUTO | $1.75 | |
| AP30-34 | OPEN | OFF | CLOSE | $1.75 | |

*Notes: 1) Other engraving options under request;*
*2) Red plate engraved in white;*
*3) Unitary weight.*

# Pushbuttons and Pilot Lights

CSW Series (22mm)

## Technical Data

### Pushbuttons, Selector Switches and Pilot Lights

| | |
|---|---|
| Applicable standards | IEC 60947-5-1, VDE 0660, UL 508, CENELEC EN 50007, ISO 13850 (EN 418), IEC 60947-5-5 |
| Certifications | CE, cULus, BV, IRAM, PCT, RCC, ICONTEC |
| Degree of protection | IP66 and IP40 (CSW-BD) according to IEC 60529<br>Type 1, 2, 3, 3R, 3S, 4, 4X, 5, 12, 12K y 13 according to UL 508 |
| **Mechanical lifespan** | |
| Pushbuttons | 3 x $10^6$ operations |
| Pushbuttons CSW-BEG/EY/CT/CY | 3 x $10^5$ operations |
| Pushbuttons CSW2-BD/BT | 2 x $10^6$ operations |
| Emergency pushbuttons CSW-BESG/P/Y | 1 x $10^5$ operations |
| Selector switches | 1 x $10^6$ operations |

### Contact Block

| | | | | |
|---|---|---|---|---|
| Applicable standards | IEC 60947-5-1, VDE 0660, UL 508, CENELEC EN 50007, ISO 13850 (EN 418), IEC 60947-5-5 | | | |
| Certifications | CE, cULus, BV, IRAM, PCT, RCC, ICONTEC | | | |
| Rated insulation voltage $U_i$ | 690 V | | | |
| Rated impulse voltage $U_{imp}$ | 4 kV | | | |
| Degree of protection (IEC 60529) | IP20 | | | |
| Conventional thermal current $I_{th}$ | 10 A | | | |
| **Electrical performance according to IEC 60947-5-1** | | | | |
| Utilization category AC-15 | BC....-CSW | | BCM01-CSW | |
| | Ue (V ac) | Ie (A) | Ue (V ac) | Ie (A) |
| | 24 | 10 | 24 | 6 |
| | 48 | 10 | 48 | 6 |
| | 60 | 10 | 60 | 6 |
| | 110 | 6 | 110 | 6 |
| | 220 | 3 | 220 | 3 |
| | 380 | 2 | 380 | 2 |
| | 500 | 1,5 | 500 | 1,5 |
| | 600 | 1,2 | 600 | 1,2 |
| Utilization category DC-13 | Ue (V dc) | Ie (A) | Ue (V dc) | Ie (A) |
| | 24 | 2,5 | 24 | 2,5 |
| | 48 | 1,4 | 48 | 1,4 |
| | 60 | 1 | 60 | 1 |
| | 110 | 0,55 | 110 | 0,55 |
| | 220 | 0,27 | 220 | 0,27 |
| | 300 | 0,2 | 300 | 0,2 |
| | 600 | 0,1 | 600 | 0,1 |
| Performance according to UL and CSA | AC / Heavy Duty (A600) e DC / Standard Duty (R300) | | - | |
| Contact resistance (IEC 60255) | ≤ 25m Ω | | | |
| Potection against short circuit (IEC 60269-1/IEC 60269-3) | 6 A fuse / 690 V gL/gG (1 kA)<br>16 A Miniature Circuit Breaker (MDW-B16) | | 6 A fuse / 500 V gL/gG (0.5 kA)<br>6 A Miniature Circuit Breaker (MDW-B6) | |
| Electric shock protection (IEC 60536) | Class II | | | |
| Terminal capacity (wire/cable with or without terminal) | Minimum (1 x 0,5 $mm^2$) and maximum (2 x 2,5 $mm^2$) | | | |
| Tightening torque | 0,8 N.m | | | |
| Ambient temperature allowed | -25 ºC...+70 ºC | | | |
| Mechanical shock resistance | No damage or disassembling up to 100 g<br>(1/2 senoid 11 rms, according to MIL 202 B method 202 A) | | | |
| Vibration resistance (IEC 60068-2-6) | 16 g for a frequency range of 40 to 500 Hz. Maximum displacement 0.75 mm (peak to peak) | | | |



Data is subject to change without notice.

# Technical Data

## Illumination Blocks with Integrated LED

| | |
|---|---|
| Applicable standards | IEC 60947-5-1, UL 508 |
| Operation voltage range | 0,85...1,10 x $U_e$ |
| Degree of protection (IEC 60529) | IP20 |
| Energy consumption (V ac/dc) | 10 mA |
| Rated impulse voltage $U_i$ (IEC 60947-1) | 2,5 kV |
| Ambient temperature allowed | - 25 ºC...+70 ºC |
| Average lifespan | 100,000 hours |
| Brightness | Red 70 mcd |
| | Yellow 115 mcd |
| | White 275 mcd |
| | Blue 64 mcd |
| | Green 150 mcd |
| Terminal capacity (wire/cable with or without terminal) | Minimum (1 x 0,5 $mm^2$) and maximum (2 x 2,5 $mm^2$) |
| Tightening torque | 0,8 N.m |

## Special Blocks (Illumination, Sockets, Voltage Reduction)

| | |
|---|---|
| Applicable standards | IEC 60947-5-1, UL 508 |
| Degree of protection (IEC 60529) | IP20 |
| Rated impulse voltage $U_i$ (IEC 60947-1) | 4 kV |
| Ambient temperature allowed | - 25 ºC...+70 ºC |
| Terminal capacity (wire/cable with or without terminal) | Minimum (1 x 0,5 $mm^2$) y maximum (2 x 2,5 $mm^2$) |
| Tightening torque | 0,8 N.m |

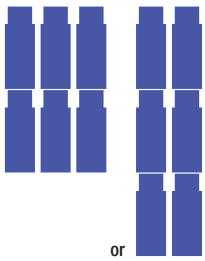
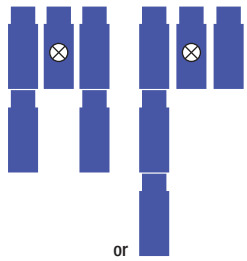
## Decentralized Control Stations

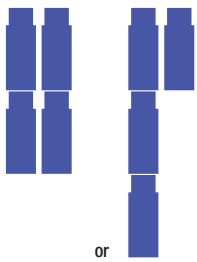
| | |
|---|---|
| Applicable standards | IEC 60947-5-1, IEC 50102, IEC 60529, UL 508, UL 50 |
| Certifications | CE |
| Degree of protection (IEC 60529) | IP66 (NEMA 4X) |
| Ambient temperature allowed | -25 ºC...+70 ºC |
| Material | Polycarbonate (cover and base) |
| Cover color | Gray (RAL 7035) or Yellow (RAL 1003) |
| Base color | Black (RAL 9005) |
| Cable entry holes | ØM20 / PG13,5 / 1/2" and ØM16 / 3/8" |
| Use in ambient | External (UV rays) or internal |

# Pushbuttons and Pilot Lights

## Assembly Configurations

### Maximum Recommended Configuration of Contact Blocks for Each type of Head and Flange

| Type of head | Pushbuttons | Pushbuttons | Selectors | Illuminated selectors |
|---|---|---|---|---|
| Reference | CSW-BF, CSW-BGA | CSW-BC, CSW-BS | CSW-CK, CSW-CA, CSW-CY | CSW-CKI |
| Maximum number of contact blocks | Max 6 | Max 6 | Max 6 | Max 4 |
| AF3F flange (3 positions) |   |   |   |   |

| Emergency pushbutton | Pushbutton | Illuminated pushbutton | Double pushbutton | Illuminated double pushbutton | Triple pushbutton |
|---|---|---|---|---|---|
| CSW-BESG, CSW-BESP, CSW-BESY | CSW-BEG, CSW-BEY, CSW-BCT, CSW-BCY | CSW-BCI, CSW-BD, CSW-BFI, CSW-BSI | CSW2-BDF, CSW2-BDS | CSW2-BDFI, CSW2-BDSI | CSW2-BTF, CSW2-BTS |
| Max 4 | Max 6 | Max 6 | Max 4 | Max 4 | Max 7 |
|   |   |  |   |  |  |



*Contact Block BC10F-CSW*
*Contact Block BC01F-CSW*



*Illumination Block BIDLF*

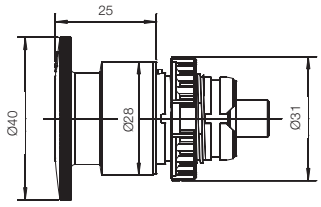
X

*Position not allowed*

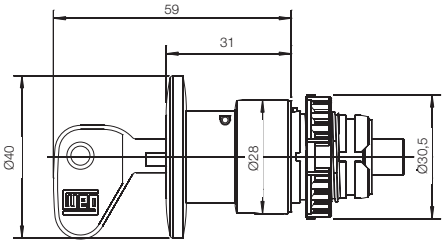


Data is subject to change without notice.

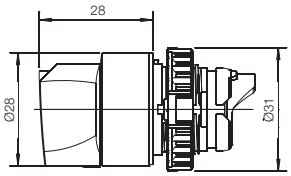
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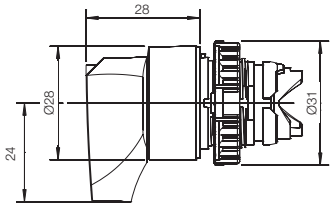

BEG
BCT



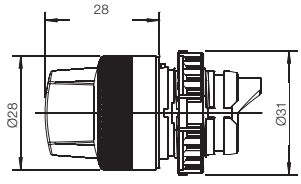

BEY
BCY



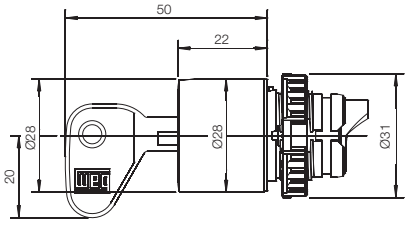

CK



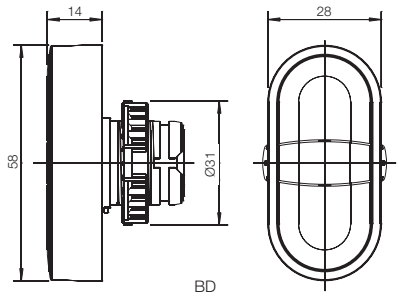

CA



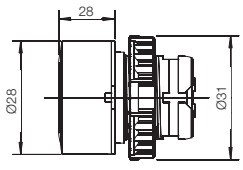

CKI



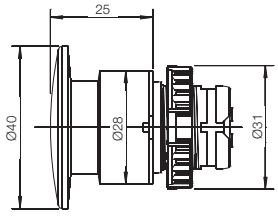

CY



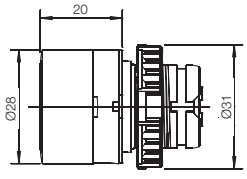

BD



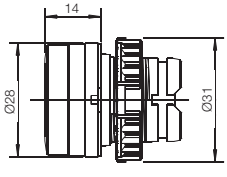

BF




BC
BCI



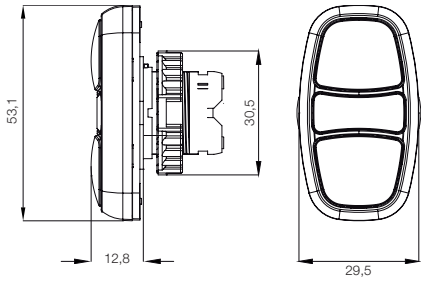

BFI
BGA



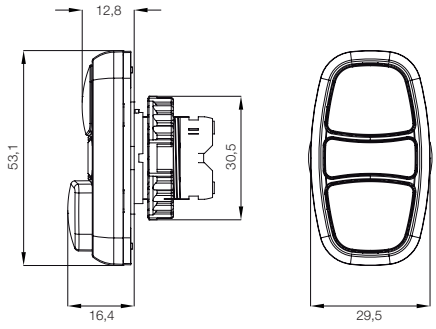

SD

CSW Series (22mm)

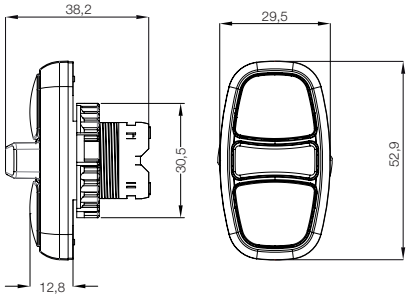
## Dimensions (mm)



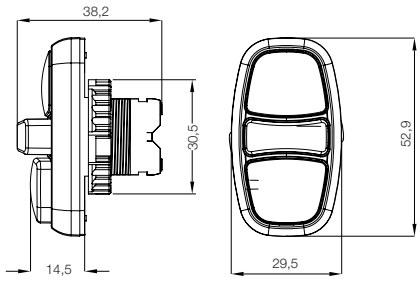

CSW2-BDF



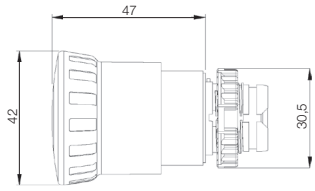

CSW2-BDS



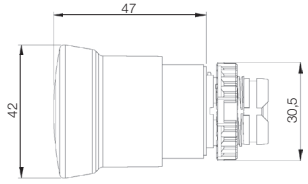

CSW2-BTF



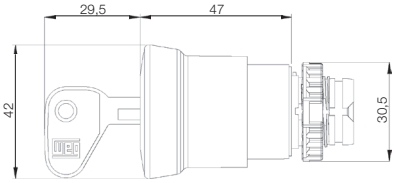

CSW2-BTS




BESG




BESP

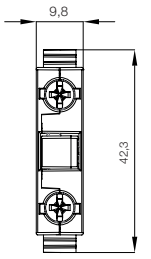


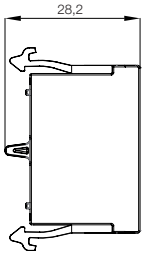

BESY



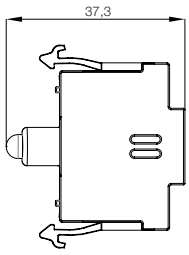
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## Dimensions (mm)

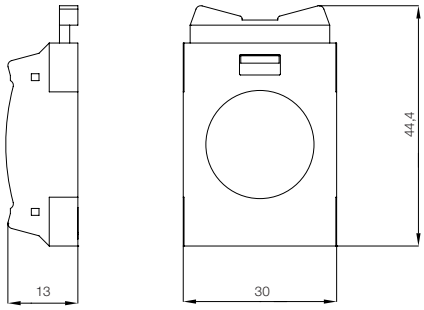


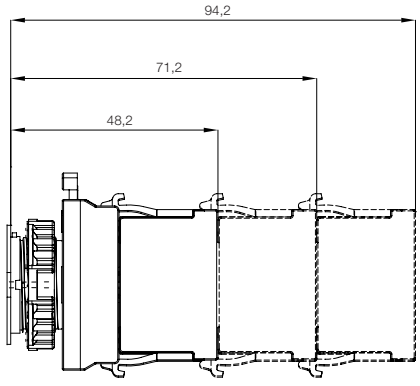

BC10F/BC01F



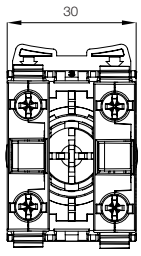

BIDLF-**CSW



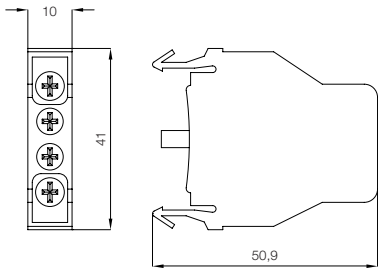

AF3F



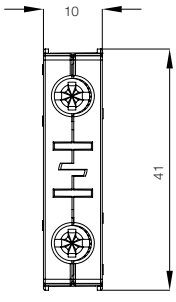

AF3F + 1..3x Contact Block BC_F

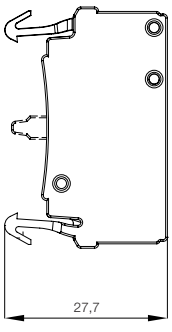


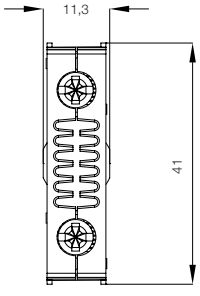

AF3F + Contact Block



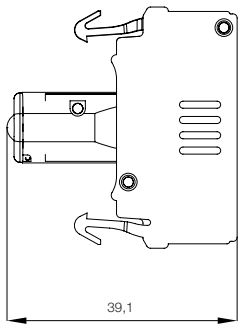

BC11/BC20/BC02



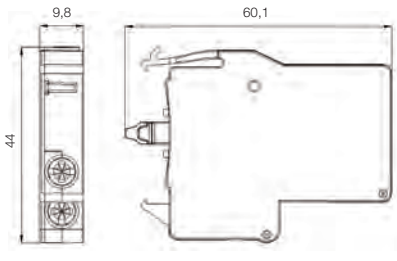



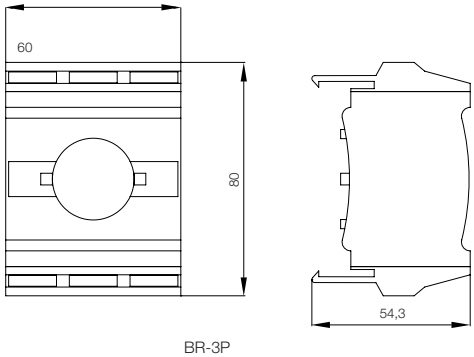

BC10/BC01/BCA10/BCR01




BIDL



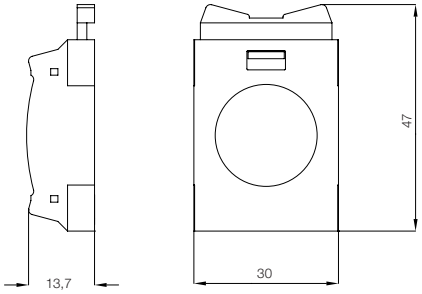

BCM01



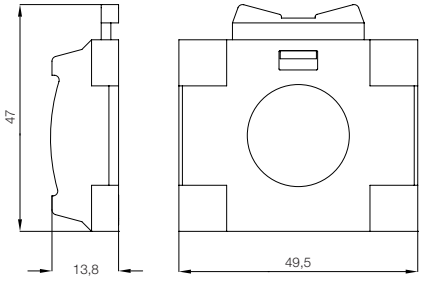

BR-3P

CSW Series (22mm)

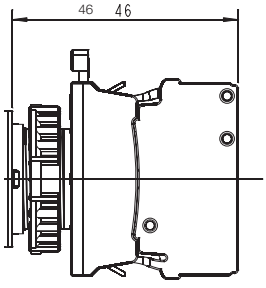
## Dimensions (mm)



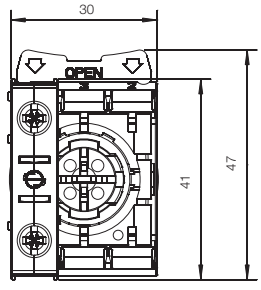

AF3



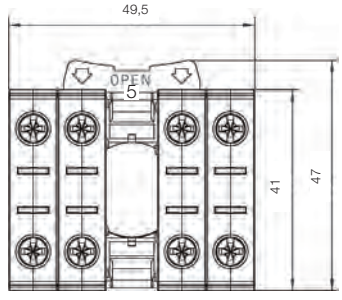

AF5



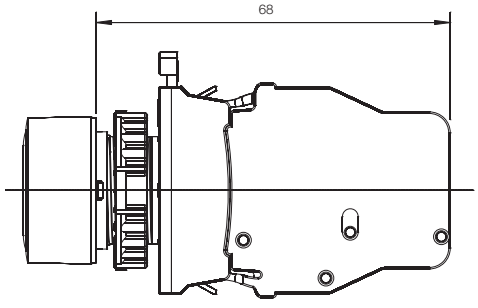

AF5 + BC01/10
BCA10
BCR01



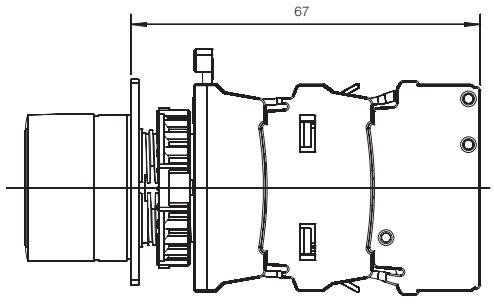

AF3 + BC01/10
BCA10
BCR01



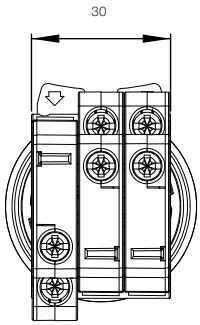

BF + AF5 + BC01/10
BCA10
BCR01

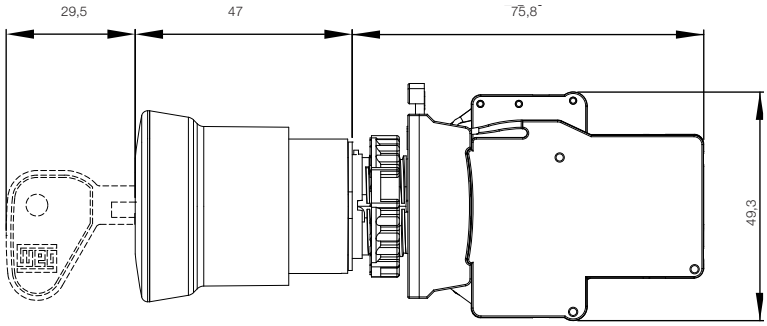



AF3/5 + BC11/20/02




AF3 + BR-3P + BIDL



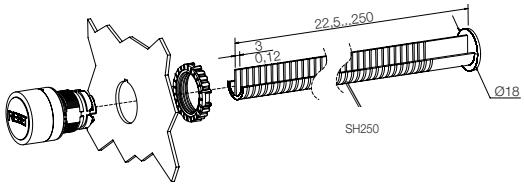




BES + BCM01-CSW

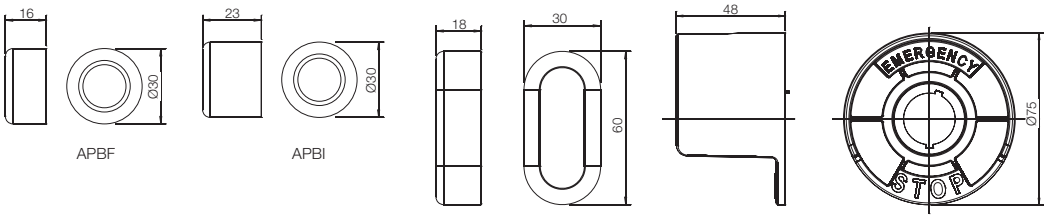


Data is subject to change without notice.

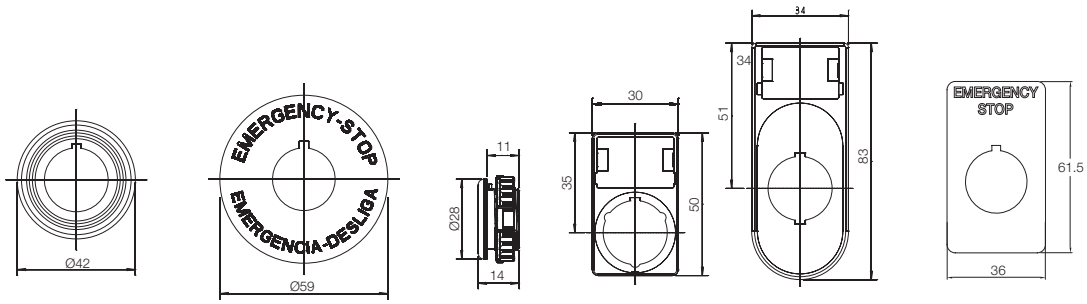
## Dimensions (mm)



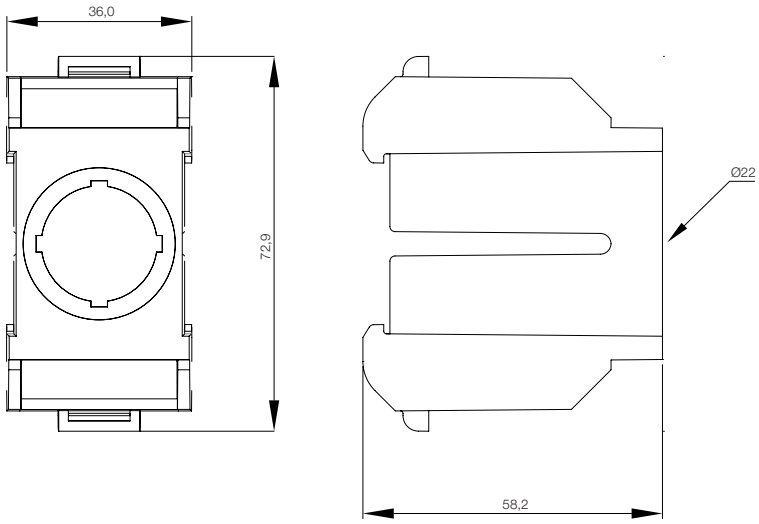

CSW-BHF437




APBF APBI APBD APEG




AR30 APE ATR APP30 APP60 APEC

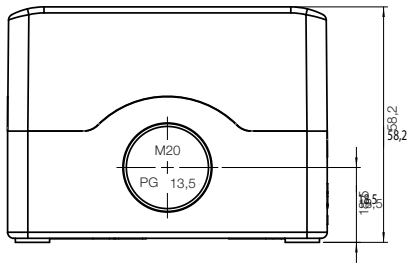


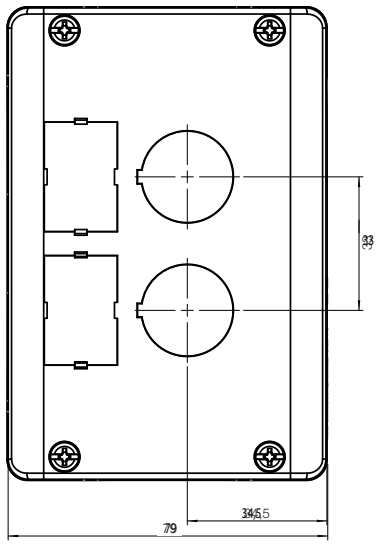

DRCSWA

CSW Series (22mm)

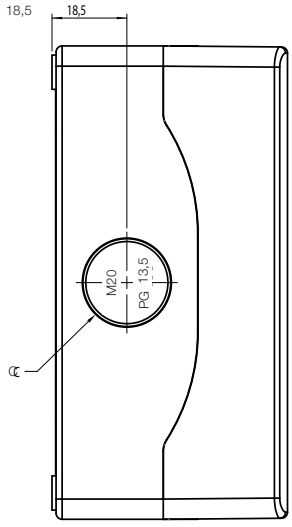
## Dimensions (mm)

### Bottom/Top

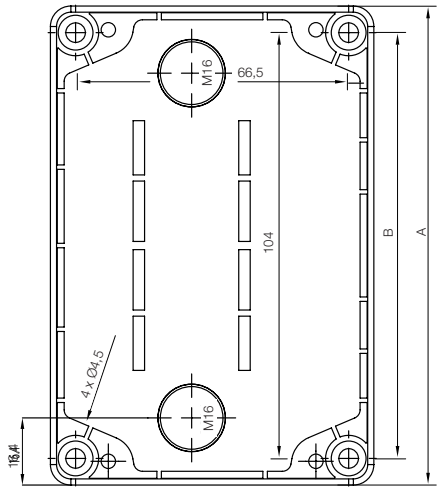



### Side




### Base




PBW decentralized control station

| Number of holes | A | B | Cable entry holes | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Bottom | | | Top | | | Side | | | Base | | |
| | | | Size | | Cable gland thread length | Size | | Cable gland thread length | Size | | Cable gland thread length | Size | | Cable gland thread length |
| 1 | 74 | 66,7 | 1 x | ØM20 ØPG13,5 Ø½ NPT | 9 to 16 mm | 1 x | ØM20 ØPG13,5 Ø½NPT | 9 to 16 mm | 1 x | ØM20 ØPG13,5 Ø½NPT | 9 to 16 mm | 2 x | ØM16 ØPG9 | 7 to 10 mm |
| 2 | 104 | 117 | | | | | | | | | | | | |
| 3 | 137 | 150 | | | | | | | 2 x | | | | | |
| 4 | 170 | 183 | | | | | | | | | | | | |
| 6 | 236 | 249 | | | | | | | | | | | | |

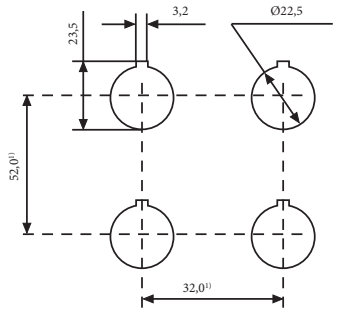




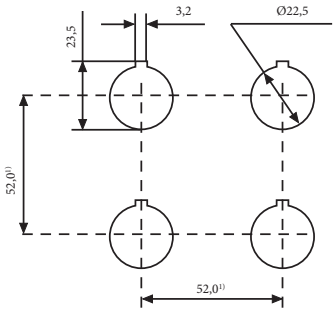
Data is subject to change without notice.

## Installation Distances (mm)

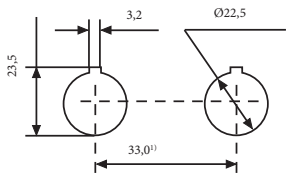
### AF3/AF3F Flange




### AF5 Flange




### PBW Control Stations




*Note: 1) Minimum distance to use Pushbuttons (Flush/Extended/Guarded) or Selectors (Knob). To use others Pushbuttons or Selectors is necessary to evaluate the head dimensions.*

# Pushbutton and Pilot Light - CSW30 Series (30mm)

The WEG 30mm pushbuttons, selector switches, and indicators have been designed to offer the ruggedness required for severe industrial applications and environments. These modular devices offer superior quality at an affordable price.

Our hazardous duty series CSW30H also offers a wide selection of operators and pilot devices for hazardous duty applications (Class 1, Division, 2 and Zone 2). This series offers a wide selection of hermetically sealed reed and factory sealed contact blocks for superior corrosion resistance.




UL File No. E330817

## Standard Features

- NEMA 4, IP65 Rated;
- Fits 1-13/64 (30.5mm) hole without notch required
- Contact blocks snap-in (fast & easy assembly)
- Up to 8 contact blocks for non-illuminated operators and up to 4 contact blocks for illuminated operators
- LED lamps with built-in leakage protection
- Same simple part numbering system as 22mm series



Data is subject to change without notice.

## Pushbuttons

Types
**BF -** Flush
**BS -** Extended
**BC -** Mushroom
**BGA -** Recessed
**BGAI -** Illuminated Recessed
**BSI -** Illuminated Extended
**BCI -** Illuminated Mushroom

**CSW30-__ __ __**
Voltage (see Voltage Code)
Color (see Color Code)

**For illuminated only**

MULTIPLIER FOR CSW-30 SERIES - Z55

### NON-ILLUMINATED FLUSH

CSW30 - __

| | LIST PRICE |
|---|---|
| BF0 | $26 |
| BF1 | |
| BF2 | |
| BF3 | |
| BF4 | |
| BF5 | |



### NON-ILLUMINATED (Extended)

CSW30 - __

| | LIST PRICE |
|---|---|
| BS0 | $26 |
| BS1 | |
| BS2 | |
| BS3 | |
| BS4 | |
| BS5 | |



### MUSHROOM (40mm HEAD)

CSW30 - __

| | LIST PRICE |
|---|---|
| BC1 | $37 |
| BC2 | |
| BC5 | |



### NON-ILLUMINATED RECESSED

CSW30 -__

| | LIST PRICE |
|---|---|
| BGA0 | $32 |
| BGA1 | |
| BGA2 | |
| BGA3 | |
| BGA4 | |
| BGA5 | |



### ILLUMINATED EXTENDED

CSW30 -__ *

| | LIST PRICE |
|---|---|
| BSI0 | $93 |
| BSI1 | |
| BSI2 | |
| BSI3 | |
| BSI4 | |



### ILLUMINATED MUSHROOM (40mm HEAD)

CSW30 - __ *

| | LIST PRICE |
|---|---|
| BCI0 | $100 |
| BCI1 | |
| BCI2 | |
| BCI3 | |
| BCI4 | |



### ILLUMINATED RECESSED

CSW30 -__ *

| | LIST PRICE |
|---|---|
| BGAI0 | $100 |
| BGAI1 | |
| BGAI2 | |
| BGAI3 | |
| BGAI4 | |



* Illuminated operators are supplied with LED block. To complete selection, replace "*" with desired voltage: E26 (24Vac/Vdc), D61 (120Vac/Vdc) or D66 (240Vac/Vdc).

## Emergency-Stop Pushbuttons

Types
G - Twist release

**CSW-__**

### E-STOP - TWIST RELEASE

| | LIST PRICE |
|---|---|
| CSW30-BEG | $81 |
| CSW30-BEG2 | |



### E-STOP - PUSH PULL

| | LIST PRICE |
|---|---|
| CSW30-BEP | $75 |
| CSW-30-BEP2 | |



Note: Contact blocks ordered separately. See page 313.

## Pilot Lights

**CSW30- __ __**
Voltage (see Voltage Code)
Color (see Color Code)

### PILOT LIGHTS

CSW30 - __ *

| | LIST PRICE |
|---|---|
| SD0 | $89 |
| SD1 | |
| SD2 | |
| SD3 | |
| SD4 | |



### Code Chart

| Color | Clear/White | Red | Green | Yellow | Blue | Black |
|---|---|---|---|---|---|---|
| Code | 0 | 1 | 2 | 3 | 4 | 5 |
| Symbol | ○ | ● | ● | ● | ● | ● |

| LED Block Voltage | |
|---|---|
| E26 | 24Vac/Vdc |
| D61 | 120Vac/Vdc |
| D66 | 240Vac/Vdc |

# Pushbuttons and Pilot Lights

CSW Series (30mm)

## Selector Switches

Types
**CK** - Knob
**CA** - Lever
**CY** - Key

**CSW30-** ___ ___ ___ ___

No. of Positions
**2** - Two positions
**3** - Three positions
**4** - Four positions

Angle
45 - 45º
90 - 90º

Handle
F - Maintained
R - Spring return
RE - Spring return from left
RD - Spring return from right

| KNOB | LEVER | with KEY(1) | POSITION | DIAGRAM |
|---|---|---|---|---|
| 2)  LIST PRICE Maintained **$39** Spring Return **$57** | 2)  LIST PRICE Maintained **$39** Spring Return **$57** | 2)  LIST PRICE Maintained **$110** Spring Return **$128** | | |
| CSW30-CK2F90 | CSW30-CA2F90 | CSW30-CY2F90 |  | 1 |
| CSW30-CK2R90 | CSW30-CA2R90 | CSW30-CY2R90 |  | 1 |
| CSW30-CK3F45 | CSW30-CA3F45 | CSW30-CY3F45 |  | 2 |
| CSW30-CK3R45 | CSW30-CA3R45 | CSW30-CY3R45 |  | 2 |
| CSW30-CK3RE45 | CSW30-CA3RE45 | CSW30-CY3RE45 |  | 2 |
| CSW30-CK3RD45 | CSW30-CA3RD45 | CSW30-CY3RD45 |  | 2 |
| CSW30-CK4F18 | CSW30-CA4F18 | CSW30-CY4F18 |  | 3 |

*1) Key is released on any position. Consult WEG for other configuration.*
*2) Contact blocks ordered seperately*

**DIAGRAM 1**

| HANDLE POSITION I | HANDLE POSITION II | Auxiliary Contact | Mouting Position |
|---|---|---|---|
| 0 | X | NO | Either |
| X | 0 | NC | Either |
| 0 | X | early make | Either |
| X | 0 | late break | Either |

*X = CLOSED*
*O = OPEN*

**DIAGRAM 2**

| HANDLE POSITION I | HANDLE POSITION 0 | HANDLE POSITION II | Auxiliary Contact | Mouting Position |
|---|---|---|---|---|
| X | 0 | 0 | NO | Left |
| 0 | 0 | X | NO | Right |
| 0 | X | 0 | NC | Either |
| X | 0 | X | early make | Either |
| 0 | X | X | late break | Left |
| X | X | 0 | late break | Right |

**DIAGRAM 3**

| HANDLE POSITION I | HANDLE POSITION II | HANDLE POSITION III | HANDLE POSITION IV | Auxiliary Contact | Mouting Position |
|---|---|---|---|---|---|
| X | 0 | 0 | 0 | NO | Left |
| 0 | 0 | 0 | X | NO | Right |
| 0 | 0 | X | 0 | NC | Left |
| 0 | X | 0 | 0 | NC | Right |
| X | X | 0 | X | early make | Left |
| X | 0 | X | X | early make | Right |
| 0 | X | X | X | late break | Left |
| X | X | X | 0 | late break | Right |



Data is subject to change without notice.

## Auxiliary Contacts

Our standard contact blocks are color coded for easy circuit identification to minimize wiring errors. WEG's contact blocks are stackable up to 4 deep (for a total of up to 8 circuits per operator) without the need of any additional accessory. Combining different contact blocks types enable several functions to be achieved.



### CONTACT BLOCKS

**Normally Open**
BC10-CSW30
LIST PRICE $13



**Normally Closed**
BC01-CSW30
LIST PRICE $13



**Early Make**
BCA10-CSW30
LIST PRICE $17



**Late Break**
BCR01-CSW30
LIST PRICE $17



## Accessories

### CLAMP RING WRENCH

CPAW30



LIST PRICE $30

Simplifies the tighening or loosening of polyester and aluminum 1-3/8" clamp rings.

### 30MM HOLE PLUG

ATR30



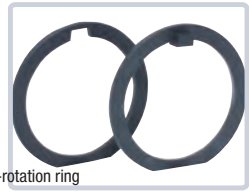
LIST PRICE $25

NEMA 4X rated plug to seal up unwanted panel holes.

### THRUST AND TRIM WASHER

CSW30-TTW

LIST PRICE $4



Anti-rotation ring

### GUARD & LOCK-OFF ATTACHMENT



| WEG P/N | Description | List |
|---|---|---|
| CSW30-GAPB | 30MM GUARD ATTACHMENT FOR MAINTAINED PUSH BUTTONS | $40 |
| CSW30-L01 | 30MM LOCK OFF ATTACHMENT FOR STANDARD EXTENDED CAP | $32 |
| CSW30-L02 | 30MM LOCK OFF ATTACHMENT FOR STANDARD MOMENTARY MUSHROOM CAP | $32 |
| CSW30-L03 | 30MM LOCK OFF ATTACHMENT FOR PUSH-PULL MTD MUSHROOM CAP OR PUSH MTD EXTENDED CAP | $32 |
| CSW30-L04 | 30MM LOCK OFF ATTACHMENT FOR MOST PUSH BUTTONS AND SELECTOR SWITCHES | $50 |

### EMERGENCY PLATE

APE30-03




LIST PRICE $8.30

### PANEL GASKETS

CSW30-PG2 (1/16')
CSW30-PG6 (3/16')

LIST PRICE $10



# Pushbuttons and Pilot Lights

CSW Series (30mm)

## Special Operators

POTENTIOMETER

**CSW30-POT_W**

LIST PRICE $145



**CSW30-POT __ W** — Resistance

| | | | | | |
|---|---|---|---|---|---|
| **1** | - | 1kΩ | **10** | - | 10kΩ |
| **2** | - | 2kΩ | **50** | - | 50kΩ |
| **5** | - | 5kΩ | | | |

RESET

**CSW30-RSBW**

LIST PRICE $22

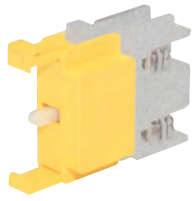



*Note: Plunger included as standard.*

PUSH ON / PUSH OFF BLOCK

**BR3P-CSW30**

LIST PRICE $37



WOBBLE STICK

**CSW30-WS**

LIST PRICE $65



BOOTED CABLE PULL

**CSW30-CPBT**

LIST PRICE $130



## LED Bulbs



| Catalog Number | Description | List Price |
|---|---|---|
| CSW30-BIDL3E26 | Yellow 24vac/24vdc | $28 |
| CSW30-BIDL4E26 | Blue 24vac/24vdc | $28 |
| CSW30-BIDL2E26 | Green 24vac/24vdc | $28 |
| CSW30-BIDL1E26 | Red 24vac/24vdc | $28 |
| CSW30-BIDL0E26 | White 24vac/24vdc | $28 |
| | | |
| CSW30-BIDL3D61 | Yellow 120vac/120vdc | $28 |
| CSW30-BIDL4D61 | Blue 120vac/120vdc | $28 |
| CSW30-BIDL2D61 | Green 120vac/120vdc | $28 |
| CSW30-BIDL1D61 | Red 120vac/120vdc | $28 |
| CSW30-BIDL0D61 | White 120vac/120vdc | $28 |

*Replacement LED bulbs for 240Vac/Vdc illuminated operators are the "E26" (24Vac/Vdc) bulbs. Please refer to the correct color when ordering.*



Data is subject to change without notice.

## Engraved Legend Plates

| Catalog Number | Marking | Description | List Price Package with 1 unit |
|---|---|---|---|
| | | **For Pushbuttons & Indicating Lights** | |
| APP30S-01 | Close | 30mm Legend Plate & Holder - Close | $6 |
| APP30S-02 | Down | 30mm Legend Plate & Holder - Down | $6 |
| APP30S-03 | Emergency Stop | 30mm Legend Plate & Holder - Emergency Stop | $6 |
| APP30S-04 | Forward | 30mm Legend Plate & Holder - Forward | $6 |
| APP30S-05 | Jog | 30mm Legend Plate & Holder - Jog | $6 |
| APP30S-06 | Jog Forward | 30mm Legend Plate & Holder - Jog Forward | $6 |
| APP30S-07 | Jog Reverse | 30mm Legend Plate & Holder - Jog Reverse | $6 |
| APP30S-08 | Lower | 30mm Legend Plate & Holder - Lower | $6 |
| APP30S-09 | Off | 30mm Legend Plate & Holder - Off | $6 |
| APP30S-10 | On | 30mm Legend Plate & Holder - On | $6 |
| APP30S-11 | Open | 30mm Legend Plate & Holder - Open | $6 |
| APP30S-12 | Power On | 30mm Legend Plate & Holder - Power On | $6 |
| APP30S-13 | Raise | 30mm Legend Plate & Holder - Raise | $6 |
| APP30S-14 | Reset | 30mm Legend Plate & Holder - Reset | $6 |
| APP30S-15 | Reverse | 30mm Legend Plate & Holder - Reverse | $6 |
| APP30S-16 | Run | 30mm Legend Plate & Holder - Run | $6 |
| APP30S-17 | Start | 30mm Legend Plate & Holder - Start | $6 |
| APP30S-18 | Stop | 30mm Legend Plate & Holder - Stop | $6 |
| APP30S-19 | Up | 30mm Legend Plate & Holder - Up | $6 |
| APP30S-147 | Fault | 30mm Legend Plate & Holder - Fault | $6 |
| APP30S-100 | Auto | 30mm Legend Plate & Holder - Auto | $6 |
| APP30S-101 | Fast | 30mm Legend Plate & Holder - Fast | $6 |
| APP30S-102 | Hand | 30mm Legend Plate & Holder - Hand | $6 |
| APP30S-103 | Low | 30mm Legend Plate & Holder - Low | $6 |
| APP30S-104 | Manual | 30mm Legend Plate & Holder - Manual | $6 |
| APP30S-105 | Out | 30mm Legend Plate & Holder - Out | $6 |
| APP30S-106 | Overload | 30mm Legend Plate & Holder - Overload | $6 |
| APP30S-107 | Push-to-Reset | 30mm Legend Plate & Holder - Push-to-Reset | $6 |
| APP30S-108 | Slow | 30mm Legend Plate & Holder - Slow | $6 |
| APP30S-109 | Trip | 30mm Legend Plate & Holder - Trip | $6 |
| APP30S-148 | Motor Run | 30mm Legend Plate & Holder - Motor Run | $6 |
| APP30S-149 | Power Off | 30mm Legend Plate & Holder - Power Off | $6 |
| APP30S-150 | Push-to-Test | 30mm Legend Plate & Holder - Push-to-Test | $6 |
| APP30S-151 | Test | 30mm Legend Plate & Holder - Test | $6 |
| | | **For two-position Selector Switch** | |
| APP30S-20 | Forward -Reverse | 30mm Legend Plate & Holder - Forward Reverse | $6 |
| APP30S-21 | Hand - Auto | 30mm Legend Plate & Holder - Hand Auto | $6 |
| APP30S-22 | Jog - Run | 30mm Legend Plate & Holder - Jog Run | $6 |
| APP30S-23 | Manual - Auto | 30mm Legend Plate & Holder - Manual Auto | $6 |
| APP30S-24 | Off - On | 30mm Legend Plate & Holder - Off On | $6 |
| APP30S-25 | Open - Close | 30mm Legend Plate & Holder - Open Close | $6 |
| APP30S-26 | Run - Jog | 30mm Legend Plate & Holder - Run Jog | $6 |
| APP30S-27 | Start - Stop | 30mm Legend Plate & Holder - Start Stop | $6 |
| APP30S-28 | Up - Down | 30mm Legend Plate & Holder - Up Down | $6 |
| APP30S-153 | Down - Up | 30mm Legend Plate & Holder - Down Up | $6 |
| APP30S-154 | Local - Remote | 30mm Legend Plate & Holder - Local Remote | $6 |
| APP30S-156 | Reverse - Forward | 30mm Legend Plate & Holder - Reverse Forward | $6 |
| APP30S-157 | Stop - Start | 30mm Legend Plate & Holder - Stop Start | $6 |
| APP30S-110 | Auto - Hand | 30mm Legend Plate & Holder - Auto Hand | $6 |

# Pushbuttons and Pilot Lights

## CSW Series (30mm)

### Engraved Legend Plates

| Catalog Number | Marking | Description | List Price Package with 1 unit |
|---|---|---|---|
| | | **For two-position Selector Switch** | |
| APP30S-111 | Auto -Manual | 30mm Legend Plate & Holder - Auto Manual | $6 |
| APP30S-112 | Fast - Slow | 30mm Legend Plate & Holder - Fast Slow | $6 |
| APP30S-113 | High - Low | 30mm Legend Plate & Holder - High Low | $6 |
| APP30S-114 | Inch - Run | 30mm Legend Plate & Holder - Inch Run | $6 |
| APP30S-115 | Left - Right | 30mm Legend Plate & Holder - Left Right | $6 |
| APP30S-116 | On - Off | 30mm Legend Plate & Holder - On Off | $6 |
| APP30S-119 | Raise - Lower | 30mm Legend Plate & Holder - Raise Lower | $6 |
| APP30S-120 | Slow - Fast | 30mm Legend Plate & Holder - Slow Fast | $6 |
| APP30S-121 | Summer - Winter | 30mm Legend Plate & Holder - Summer Winter | $6 |
| | | **For three-position Selector Switch** | |
| APP30S-29 | Auto - Off - Hand | 30mm Legend Plate & Holder - Auto Off Hand | $6 |
| APP30S-30 | Forward - Off - Reverse | 30mm Legend Plate & Holder - For Off Rev | $6 |
| APP30S-31 | Hand - Off - Auto | 30mm Legend Plate & Holder - Hand Off Aut | $6 |
| APP30S-32 | Manual - Off - Auto | 30mm Legend Plate & Holder - Man Off Auto | $6 |
| APP30S-33 | Open - Off - Auto | 30mm Legend Plate & Holder - Open Off Auto | $6 |
| APP30S-34 | Open - Off - Close | 30mm Legend Plate & Holder - Open Off Close | $6 |
| APP30S-35 | Up - Off - Down | 30mm Legend Plate & Holder - Up Off Down | $6 |
| APP30S-198 | Low - Med - High | 30mm Legend Plate & Holder - Low Med High | $6 |
| APP30S-199 | Low - Off - High | 30mm Legend Plate & Holder - Low Off High | $6 |
| APP30S-158 | Down - Off - Up | 30mm Legend Plate & Holder - Down Off Up | $6 |
| APP30S-159 | Jog - Off - Auto | 30mm Legend Plate & Holder - Jog Off Auto | $6 |
| APP30S-160 | Raise - Off - Lower | 30mm Legend Plate & Holder - Raise Off Lower | $6 |
| APP30S-161 | Local - Off - Remote | 30mm Legend Plate & Holder - Local Off Remote | $6 |
| APP30S-162 | Forward - Auto - Rev | 30mm Legend Plate & Holder - Fwd Auto Rev | $6 |
| APP30S-122 | Auto - Manual - Off | 30mm Legend Plate & Holder - Auto Manual Off | $6 |
| APP30S-123 | High - Off - Low | 30mm Legend Plate & Holder - High Off Low | $6 |
| APP30S-124 | Off - Run - Start | 30mm Legend Plate & Holder - Off Run Start | $6 |
| APP30S-125 | Off - Start - Run | 30mm Legend Plate & Holder - Off Start Run | $6 |
| APP30S-126 | Off - 1 - 2 | 30mm Legend Plate & Holder - Off 1 2 | $6 |
| APP30S-127 | Slow - Off - Fast | 30mm Legend Plate & Holder - Slow Off Fast | $6 |
| APP30S-128 | Summer - Off -Winter | 30mm Legend Plate & Holder - Summer Off Winter | $6 |
| APP30S-129 | 1 - Off - 2 | 30mm Legend Plate & Holder - 1 Off 2 | $6 |
| APP30S-130 | 1 - 2 - 3 | 30mm Legend Plate & Holder - 1 2 3 | $6 |
| | | **For Push/Pull units** | |
| APP30S-36 | On - Off | 30mm Legend Plate & Holder - On / Off | $6 |
| APP30S-37 | Open - Close | 30mm Legend Plate & Holder - Open / Close | $6 |
| APP30S-38 | Up - Down | 30mm Legend Plate & Holder - Up / Down | $6 |
| APP30S-152 | Pull Start - Push Stop | 30mm Legend Plate & Holder - Pull Start / Push Stop | $6 |
| APP30S-155 | Push to Stop - Pull to Start | 30mm Legend Plate & Holder - Push to Stop / Pull to Start | $6 |
| APP30S-117 | Push Off - Pull On | 30mm Legend Plate & Holder - Push Off / Pull On | $6 |
| APP30S-118 | Push On - Push Off | 30mm Legend Plate & Holder - Push On / Push Off | $6 |
| | | **For Potentiometers** | |
| APP30S-P00 | 0 - 100 | 30mm Legend Plate & Holder - (Blank 0 - 100) | $6 |
| APP30S-P01 | 0 - 10 | 30mm Legend Plate & Holder - (Blank 1 - 10) | $6 |
| APP30S-P02 | Speed 0 - 10 | 30mm Legend Plate & Holder - (Speed 1 - 10) | $6 |
| APP30S-P03 | Speed 0 - 100 | 30mm Legend Plate & Holder - (Speed 1 - 100) | $6 |



Data is subject to change without notice.

# Technical Data

## ELECTRICAL RATINGS - 30MM INDUSTRIAL PILOT DEVICES

| Lamp | Industry Number | Rated Volts | Lumens (MSCD) | Design Life (Hrs.) | Current Draw (mA) | Lamp Type | Shock & Vibration | Leakage Protection |
|---|---|---|---|---|---|---|---|---|
| BIDL6 | ** | 6V | Varies w/ Color | 100,000 | 50 | LED | Excellent | 14 mA |
| BIDL12 | ** | 12V | Varies w/ Color | 100,000 | <20 | LED | Excellent | 4 mA |
| BIDL24 | ** | 24V | 2000 mcd | 100,000 | <20 | LED | Excellent | 4 mA |
| BIDL130 | ** | 120/130V | Typical | 100,000 | <10 | LED | Excellent | 2 mA |

**Specify lamp color when ordering.*

**Dielectric Strength (Terminal to Ground) 2200V for 1 Minute**

| Standard Contacts | | | Utilization Category | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | IEC | UL | Make Rating | Break Rating | Ith-Thermal Current | |
| | | AC | AC-15 | A600 | 7200VA | 720VA | 10A | |
| | | DC | DC-13 | P300 | 138VA | 138VA | 5A | |

*Note: For AC voltage below 72V AC the max. allowed switching current is 10A = Ith. For DC voltages below 28V DC the max. allowed switching current is 5A =Ith.*
*For switching applications below 24V/40mA - Hermetic REED contacts are recommended. Hermetic Reeds are also excellent in environments containing chemical vapors, oxidizing agents, and explosive gases. Please refer to the HAZARDOUS section of the 30mm devices for more information.*

### Environmental Ratings

Operating Temperature
-40 to +131° F ( -40 to +55° C )

Storage Temperature
-40 to +185° F ( -40 to +85° C )

Operating environments below freezing temperatures are assumed to be absent of freezing liquids or pollutants.

### Terminal & Wiring Consideration

Wire - AWG 22-12 CU
(Copper Only - Solid & Stranded [.5~4 $mm^2$]
One or Two wires permitted per termination

Recommended Tightening Torque
7 lb-in (+3.0/-0.0 lb-in – [.8 Nm]

### Mechanical Design Life Cycles

| | |
|---|---|
| Push Buttons | |
| Momentary | 5,000,000 |
| Maintained | 250,000 |
| Selector Switches | 500,000 |
| All Other Devices | 250,000 |
| Standard Contact Blocks | 10,000,000 |
| Indicating Lights - Refer to the appropriate Lamp Data | |

### Materials

**Thermoplastic Polyester and Polyester Blends (UV Stabilized for outdoor use)**
- Operator Housings
- Operator Caps and Handles - Non-illuminated (Glass Reinforced Grades)
- Mounting Rings and Nuts
- Thrust Washer
- Trim Washer

**High Impact Polycarbonate (UV Stabilized for outdoor use)**
- Pilot Light Lens
- Transparent Pushbutton and Mushroom Caps

**Custom Polymers**
- Certain CAM and Bearing parts are Teflon, Silicone, & Moly-Disulfide Impregnated for improved wearability
- Fluorosilicone and Thermoplastic Neoprene Boot Accessories

**Seals**
- Neoprene Gaskets
- Thermoplastic - Molded Neoprene and alloy derivities
- BUNA N - Rubber - Teflon Coated
- Thermoplastic - Elastomer Molded Seals
- Fluorosilicone - Boots

**Metal: Brass & Stainless Steel**
- Push Pull Bushings
- Internal tubes for Maintained Devices
- Detents for Maintained Devices
- Springs (Stainless Steel throughout)

**Aluminum**
- Optional Mounting Nut

### Materials

| | |
|---|---|
| **Pushbuttons (Operator Only)** | |
| Momentary | 1.3 lbs. [5.8N] |
| Illuminated Momentary | 2.8 lbs. [12.4N] |
| Maintained | 4 to 6 lbs [17.9~26.7 N] |
| Illuminated Maintained | 4.6 lbs. [20.5 N] |
| **Reset Push Button** | 1.5 lbs. [6.7 N] |
| **Selector Switches** | |
| Maintained | 1.7 in-lbs [.19 Nm] |
| Momentary | 1.7 in-lbs [.19 Nm] |
| Key Operated | 1.7 in-lbs [.19 Nm] |
| **Cable Pull** | |
| Standard | 4 to 6 lbs [17.9~26.7 N] |
| Heavy Duty | 13 lbs. [57.8 N] |
| **Push-Twist Release** | 4.7 lbs [20.9 N] |
| **Potentiometer** | |
| 2 Watt "J" Series | 3-12 in-oz [.11 Nm Max.] (300° Rotation) |
| **Standard Contact Blocks** | 1 lb. [4.45 N] |
| **Indicating Lights** | Refer to the appropriate Lamp Data |
| **Multi-Voltage Light** | 20-140 VAC/VDC (Burden .65W max.) |
| **Transformer** | 2 VA |

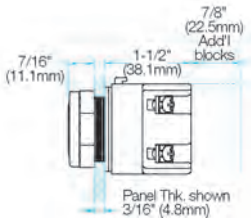
# Pushbuttons and Pilot Lights

## CSW Series (30mm)

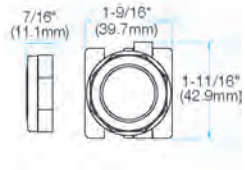
### Momentary & Maintained Non-Illuminated Push Buttons

**Fully-assembled operators come standard with one 3/16" (4.8mm) and three 1/16" (1.6mm) gaskets.**

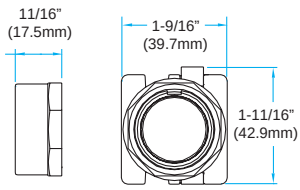
*Non-Illuminated Operator (shown with Flush Cap)*



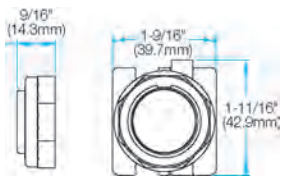

*Momentary Flush Cap*



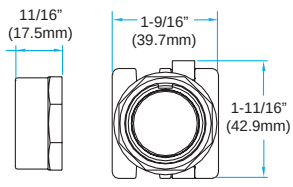

*Momentary Guarded Flush Cap*



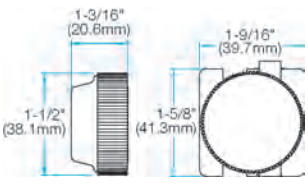

*Momentary Extended Cap*



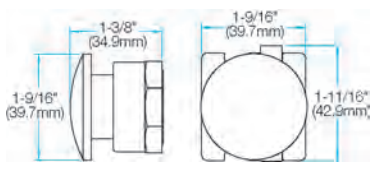

*Momentary Guarded Extended Cap*



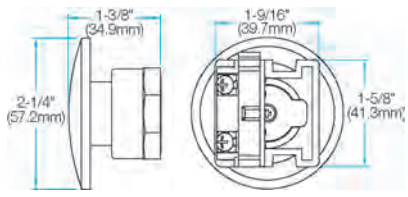

*Momentary Standard Rubber Boot*



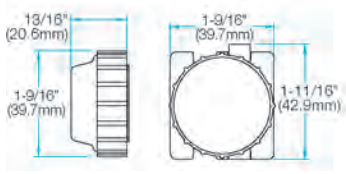

*Momentary 1-1/2" (38mm) Mushroom Cap*



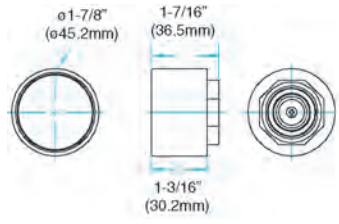

*Momentary 2-1/4" (57.2mm) Jumbo Mushroom Cap*



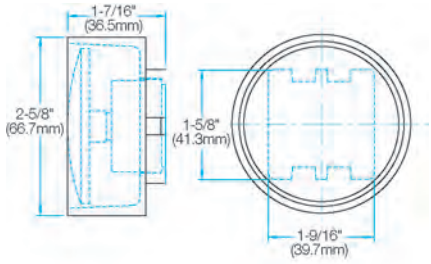

*Momentary Fluorosilicone Rubber Boot*



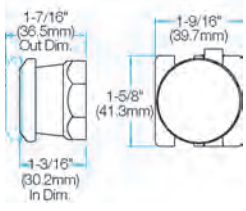

*Momentary 1-1/2" (38mm) Shrouded Mushroom Cap*



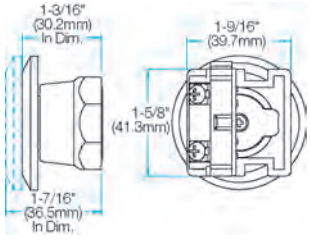

*Momentary 2-1/4" (57.2mm) Shrouded Jumbo Mushroom Cap*



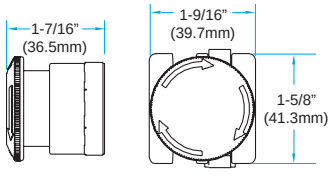

*2-Position Push-Pull Maintained 1-1/2" (38mm) Mushroom Cap*




*2-Position Push-Pull Maintained 2-1/4" (57.2mm) Jumbo Mushroom Cap*




*2-Position Push-Twist Maintained 1-1/2" (38mm) Mushroom Cap*



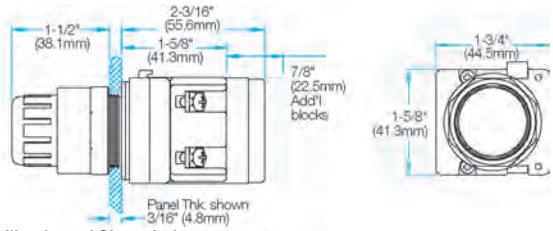



Data is subject to change without notice.

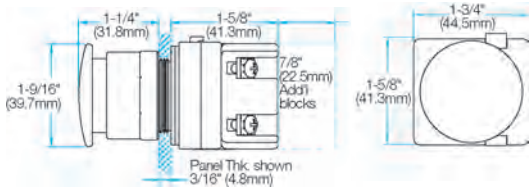
## Momentary Illuminated Push Buttons

**Fully-assembled operators come standard with one 3/16" (4.8mm) and three 1/16" (1.6mm) gaskets.**

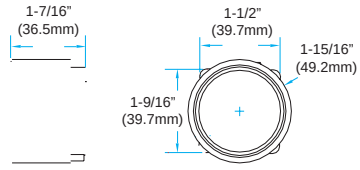
*Illuminated Full Voltage, Resistor and Dual-Input Operators*



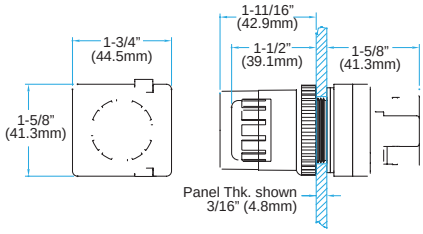

*Illuminated Full Voltage Operators*




*Illuminated Shrouded Mushroom Lens*



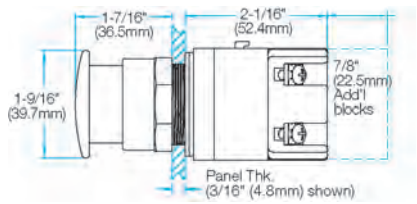

*Illuminated Guarded Lens*

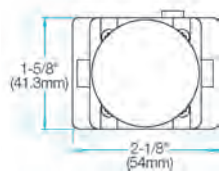



## 2 & 3 Position Push-Pull Maintained Illuminated Push Buttons

**Fully-assembled operators come standard with one 3/16" (4.8mm) and three 1/16" (1.6mm) gaskets.**

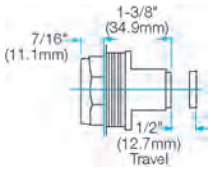
*Illuminated Full Voltage Operator*



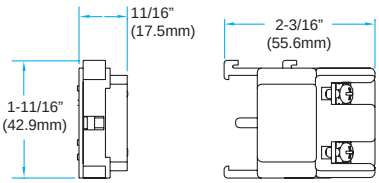




## Reset Push Button

**Fully-assembled operators come standard with one 3/16" (4.8mm) and three 1/16" (1.6mm) gaskets.**




## Alternate Action Block

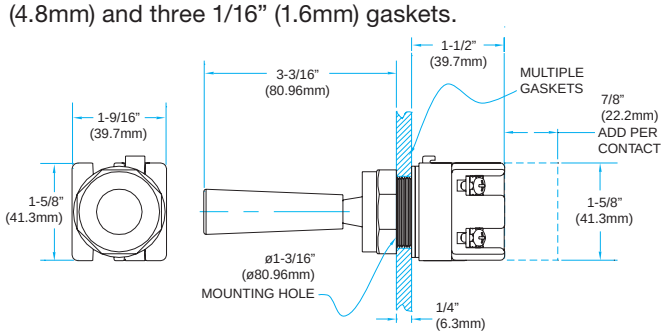


# Pushbuttons and Pilot Lights

## CSW Series (30mm)

### Wobble stick

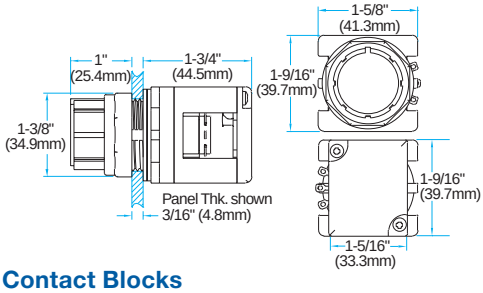
Fully-assembled operators come standard with one 3/16" (4.8mm) and three 1/16" (1.6mm) gaskets.



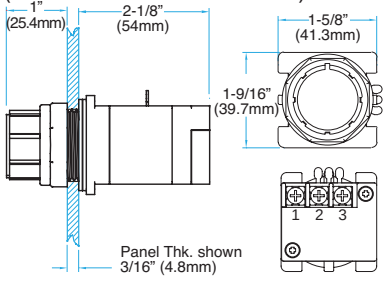

### Potentiometer with & without Terminal Block

Fully-assembled operators come standard with one 3/16" (4.8mm) and three 1/16" (1.6mm) gaskets.

Potentiometer Operator
(shown without Terminal Block)

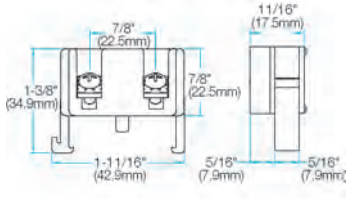



Potentiometer Operator
(shown with Terminal Block)

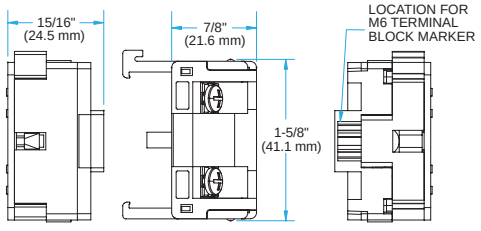



### Contact Blocks

Contact Block



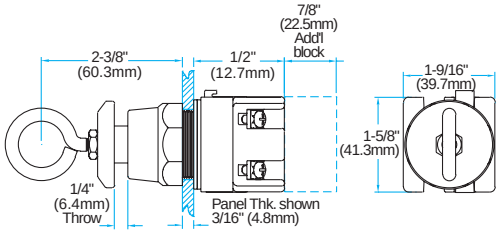

Contact Block
(shown with IP20 Terminal Guard)




### Cable Pull Operators

**Fully-assembled operators come standard with one 3/16" (4.8mm) and three 1/16" (1.6mm) gaskets.**

***Push-Pull Maintained Cable Pull Operator***




***Momentary and Heavy Duty Cable Pull Operators***

***Momentary Booted Cable Pull Operator***

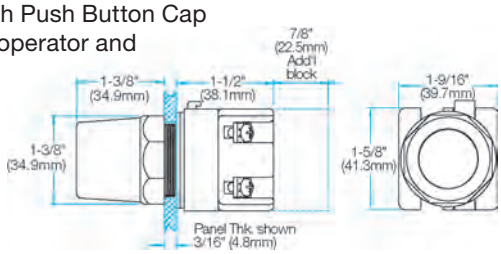


Data is subject to change without notice.

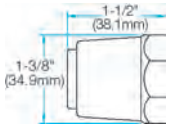
## Maintained flush & extended push button caps

Fully-assembled operators come standard with one 3/16” (4.8mm) and three 1/16” (1.6mm) gaskets.

Maintained Flush Push Button Cap (shown with an operator and contact block)



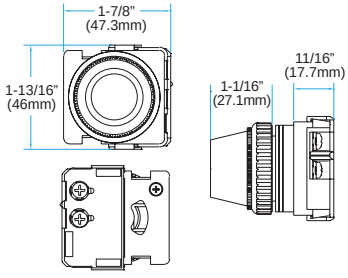

Maintained Extended Push Button Cap



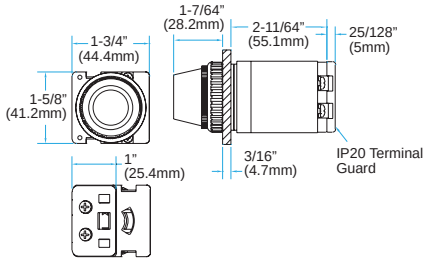

## Pilot Lights

Fully-assembled operators come standard with one 3/16” (4.8mm) and two 1/16” (1.6mm) gaskets.

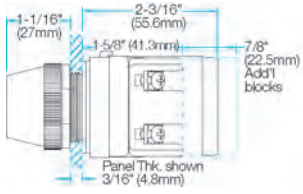
Full Voltage Pilot Light Operator




Resistor Pilot Light Operators



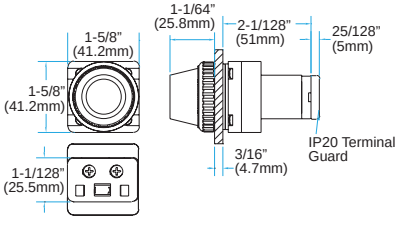

Dual Input Pilot Light Operator




## Multi-Voltage Pilot Light

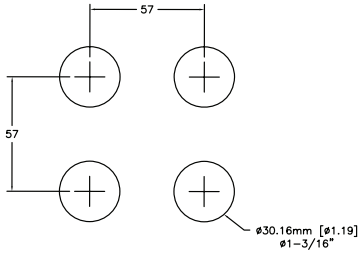
Fully-assembled operators come standard with four 1/16” (1.6mm) gaskets.

Multi-Voltage Pilot Light




## Drilling

CSW30 Panel Cutout




30mm
DRILLING PLAN
MINIMUM DISTANCES

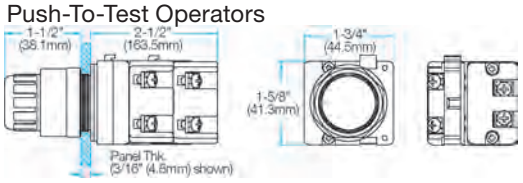
# Pushbuttons and Pilot Lights

## CSW Series (30mm)

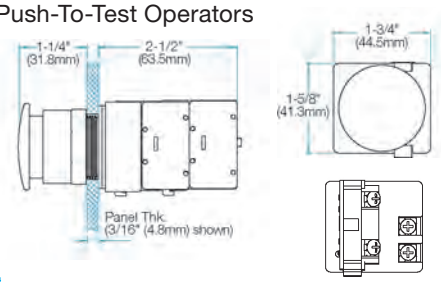
### Push-To-Test Pilot Lights

Fully-assembled operators come standard with one 3/16” (4.8mm) and three 1/16” (1.6mm) gaskets.

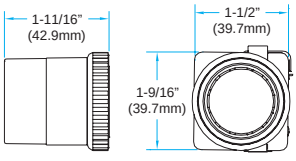
Full Voltage, Resistor
Push-To-Test Operators



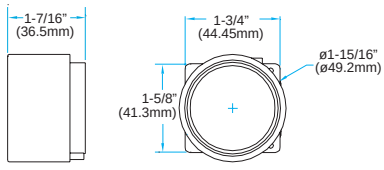

Full Voltage, Resistor
Push-To-Test Operators




Guarded Lens



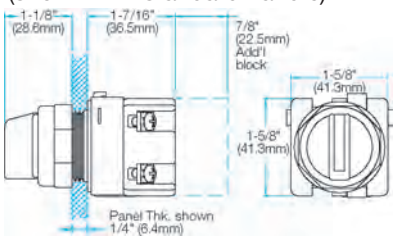

Shrouded Mushrooms Lens



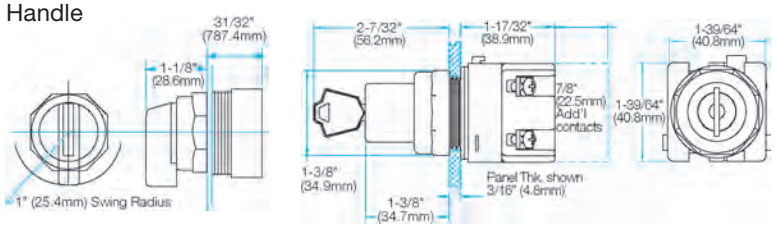

### Selector switches

Fully-assembled operators come standard with one 3/16” (4.8mm) and three 1/16” (1.6mm) gaskets.

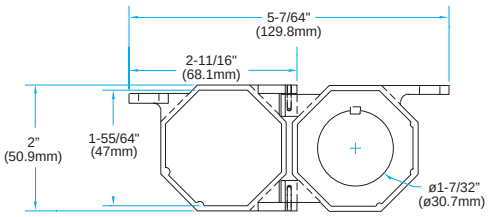
Selector Switch Operator
(shown with standard handle)

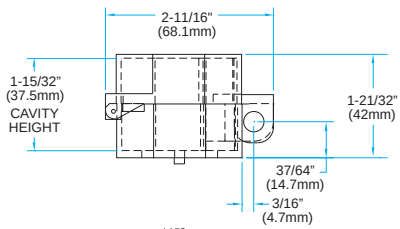


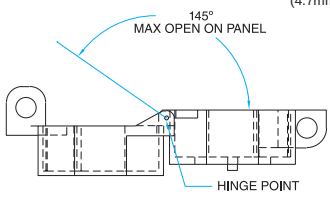

Selector Switch Lever
Handle




### lock-off attachment






Data is subject to change without notice.

# CSW30H Series (30mm) Hazardous Duty General Standards

WEG hazardous duty series CSW30H also offers a wide selection of operators and pilot devices for hazardous duty applications (Class 1, Division 2 and Zone 2). This series offers a wide selection of hermetically sealed reed and factory sealed contact blocks for superior corrosion resistance.

- NEMA 4, IP65 Rated[1]
- Fits 1-13/64 (30.5mm) hole without notch required
- Contact blocks snap-in (fast & easy assembly)
- Up to 8 contact blocks for non-illuminated operators and up to 4 contact blocks for illuminated operators
- LED lamps with built-in leakage protection
- Same simple part numbering system as 22mm series

WEG Hazardous duty Pilots Devices are specially engineered for Class 1, Division 2 and Zone 2.

Wide selection of hermetically sealed reed and factory sealed contact block.

An all-polyester construction with nickel-plated or stainles steel metal parts for superior corrision resistance.

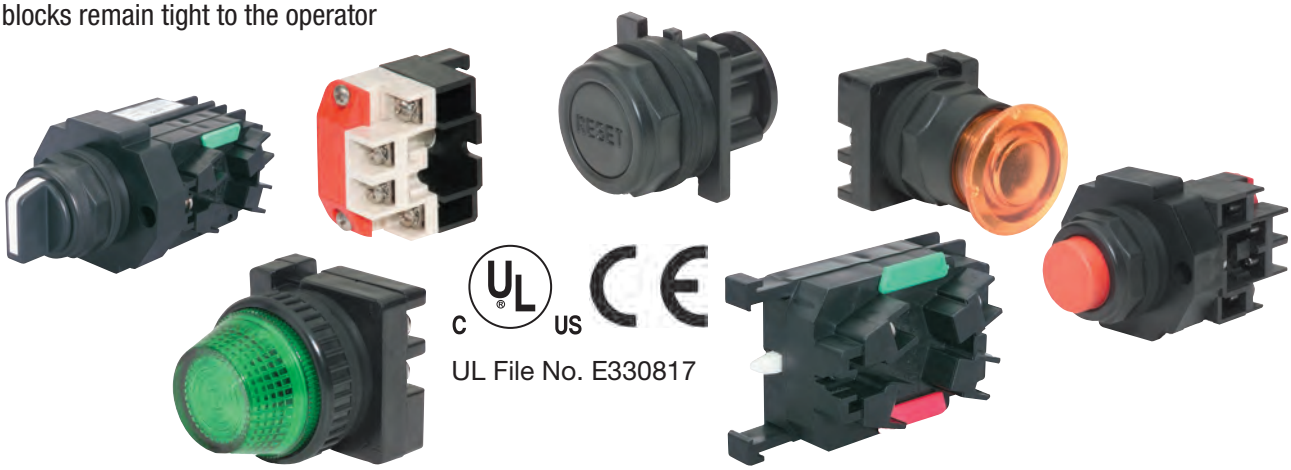
Logic Reeds are hermetically sealed, Providing needed dependability for harsh environments.

Logic Reeds provide great operation for low power level ( resistive loads only ), especially PLC inputs.

**Added Security - Optional Features**
Rubber Boots add an additional layer of protection from corrisive chemicals left behind from hands on operations or washdown environments.

## Added Security - Standard Features

All Hazardous duty Push Buttons comes standard with a screw tightening mounting bracket to ensure the contact blocks remain tight to the operator




C UL US

UL File No. E330817

# Pushbuttons and Pilot Lights

## CSW30H Series (30mm) Hazardous Duty

### Pushbuttons

Types
**BF** - Flush
**BS** - Extended
**BC** - Mushroom
**BGA** - Recessed
**BGAI** - Illuminated Recessed
**BSI** - Illuminated Extended
**BCI** - Illuminated Mushroom

**CSW30H-__ __ __**
Voltage (see Voltage Code)
Color (see Color Code)

MULTIPLIER SYMBOL FOR CSW30H SERIES - Z55

**NON-ILLUMINATED FLUSH**
CSW30H - __
BF0
BF1
BF2
BF3
BF4
BF5
LIST PRICE $31



**NON-ILLUMINATED (Extended)**
CSW30H - __
BS0
BS1
BS2
BS3
BS4
BS5
LIST PRICE $31



**NON-ILLUMINATED MUSHROOM (40mm HEAD)**
CSW30H - __
BC1
BC2
BC5
LIST PRICE $42



**NON-ILLUMINATED RECESSED**
CSW30H -__
BGA0
BGA1
BGA2
BGA3
BGA4
BGA5
LIST PRICE $37



* Illuminated operators are supplied with LED block. To complete selection, replace "*" with desired voltage: E26 (24Vac/Vdc), D61 (120Vac/Vdc) or D66 (240Vac/Vdc).

Note: Contact blocks ordered separately. See page 326.

**ILLUMINATED EXTENDED**
CSW30H -__ *
BSI0
BSI1
BSI2
BSI3
BSI4
LIST PRICE $110



**ILLUMINATED MUSHROOM (40mm HEAD)**
CSW30H - __ *
BCI0
BCI1
BCI2
BCI3
BCI4
LIST PRICE $120



**ILLUMINATED RECESSED**
CSW30H -__ *
BGAI0
BGAI1
BGAI2
BGAI3
BGAI4
LIST PRICE $115



### Emergency-Stop Pushbuttons

**CSW30H-__**
Types
G - Twist release
P - Pull release

**CSW30H- __ __**
Voltage (see Voltage Code)
Color (see Color Code)

**E-STOP - TWIST RELEASE**
CSW30H-BEG
CSW30H-BEG2
LIST PRICE $86



**E-STOP - PUSH PULL**
CSW30H-BEP
CSW30H-BEP2
LIST PRICE $80



**PILOT LIGHTS**
CSW30H - __ *
SD0
SD1
SD2
SD3
SD4
LIST PRICE $107



#### Code Chart

| Color | Clear/White | Red | Green | Yellow | Blue | Black |
|---|---|---|---|---|---|---|
| Code | 0 | 1 | 2 | 3 | 4 | 5 |
| Symbol | ○ | ● | ● | ● | ● | ● |

| LED Block Voltage | |
|---|---|
| E26 | 24Vac/Vdc |
| D61 | 120Vac/Vdc |
| D66 | 240Vac/Vdc |

Note: Contact blocks ordered separately. See page 326



Data is subject to change without notice.

## Selector Switches

Types
**CK** - Knob
**CA** - Lever

**CSW30H-** ___ ___ ___ ___

No. of Positions
**2** - Two positions
**3** - Three positions

Angle
45 - 45º
90 - 90º

Handle
**F** - Maintained
**R** - Spring return
**RE** - Spring return from left
**RD** - Spring return from right

| KNOB | LEVER | POSITION | DIAGRAM |
|---|---|---|---|
|  LIST PRICE Maintained **$44** Spring Return **$62.00** |  LIST PRICE Maintained **$44** Spring Return **$62** | | |
| CSW30H-CK2F90 | CSW30H-CA2F90 |  | 1 |
| CSW30H-CK2R90 | CSW30H-CA2R90 |  | 1 |
| CSW30H-CK3F45 | CSW30H-CA3F45 |  | 2 & 3 |
| CSW30H-CK3R45 | CSW30H-CA3R45 |  | 2 & 3 |
| CSW30H-CK3RE45 | CSW30H-CA3RE45 |  | 2 & 3 |
| CSW30H-CK3RD45 | CSW30H-CA3RD45 |  | 2 & 3 |

Note: Contact blocks ordered separately. See page 326

CSW30H-CY3RE45

CSW30H-CY3RD45

| Catalog Number | List Price | Multiplier |
|---|---|---|
| CSW30-FCR | $15 | Z5 |
| CSW30-ECR | $15 | |
| CSW30-PLCR | $15 | |

**DIAGRAM 1 - Hermetically & Factory Sealed Block**

| HANDLE POSITION I | HANDLE POSITION II | Auxiliary Contact | Mouting Position |
|---|---|---|---|
| 0 | X | NO | Either |
| X | 0 | NC | Either |
| 0 | X | NO & NC | Either |
| X | 0 | | |

**DIAGRAM 2 - Factory Sealed Block**

| HANDLE POSITION I | HANDLE POSITION 0 | HANDLE POSITION II | Auxiliary Contact | Mouting Position |
|---|---|---|---|---|
| X | 0 | 0 | NO & NC | Left |
| 0 | X | 0 | | |
| 0 | 0 | X | NO & NC | Right |
| 0 | X | 0 | | |

**DIAGRAM 3 - Hermetically Sealed Block**

| HANDLE POSITION I | HANDLE POSITION 0 | HANDLE POSITION II | Auxiliary Contact | Mouting Position |
|---|---|---|---|---|
| X | 0 | 0 | NO | Left |
| 0 | 0 | X | NO | Right |
| 0 | X | X | NC | Left |
| X | X | 0 | NC | Right |
| X | 0 | X | 2NO | wired in parallel |
| 0 | X | 0 | 2NC | wired in series |
| X | 0 | X | early make | Either |
| 0 | X | X | late break | Left |
| X | X | 0 | late break | Right |

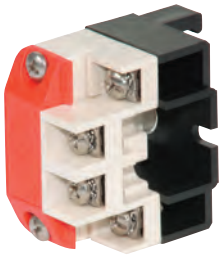
**X = CLOSED**

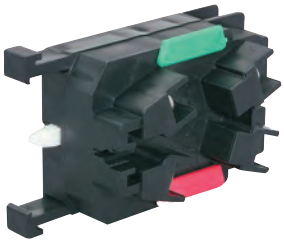
**0 = OPEN**

# Pushbuttons and Pilot Lights

CSW30H Series (30mm) Hazardous Duty

## Factory Sealed / Hermetically Sealed Contact Blocks







| Auxiliary Contact Blocks - Factory Sealed (720VA) Product Decsription | Catalog Number | List Price | Multiplier |
|---|---|---|---|
| Linear devices - 1NO & 1NC | BC11FS-CSW30H | $120 | Z55 |
| For rotary devices only - 1NO & 1NC | BC11FSR-CSW30H | | |
| **Auxiliary Contact Blocks - Hermetically Sealed (360VA inductive) Product Decsription** | | | |
| Power reed - 1NO | BC10PR-CSW30H | $95 | Z55 |
| Power reed - 1NC | BC01PR-CSW30H | | |
| Power reed - 2NO | BC20PR-CSW30H | $150 | |
| Power reed - 2NC | BC02PR-CSW30H | | |
| Power reed - 1NO & 1NC | BC11PR-CSW30H | | |
| **Auxiliary Contact Blocks - Hermetically Sealed (180VA inductive) Product Decsription** | | | |
| Mid-power reed - 1NO | BC10MP-CSW30H | $75 | Z55 |
| Mid-power reed - 1NC | BC01MP-CSW30H | | |
| Mid-power reed - 2NO | BC20MP-CSW30H | $130 | |
| Mid-power reed - 2NC | BC02MP-CSW30H | | |
| Mid-power reed - 1NO & 1NC | BC11MP-CSW30H | | |
| **Auxiliary Contact Blocks - Hermetically Sealed (40VA inductive / 100W resistive) Product Decsription** | | | |
| Mid-logic reed - 1NO | BC10ML-CSW30H | $45 | Z55 |
| Mid-logic reed - 1NC | BC01ML-CSW30H | | |
| Mid-logic reed - 2NO | BC20ML-CSW30H | $70 | |
| Mid-logic reed - 2NC | BC02ML-CSW30H | | |
| Mid-logic reed - 1NO & 1NC | BC11ML-CSW30H | | |
| **Auxiliary Contact Blocks - Hermetically Sealed (40W resistive) Product Decsription** | | | |
| Logic reed - 1NO | BC10LR-CSW30H | $28 | Z55 |
| Logic reed - 1NC | BC01LR-CSW30H | | |



Data is subject to change without notice.

## Technical Data

FACTORY SEALED: Contact Blocks are Certified as "Explosion Proof". Devices employing this method of protection are designed so that all electrical parts are enclosed in a switch housing that is capable of withstanding, without damage, an explosion of a specified gas or vapor/air mixture which may occur during the operation of the switch. Further, the explosion internal to the switch body is controlled so that the hot gases are extinguished and cooled before they are allowed to escape to the surrounding atmosphere.

HERMETICALLY SEALED: Contact Blocks are Certified as "Non-Incendive". Devices employing this method of protection are designed so that all electrical parts are a bonded part of the switch housing that forms an arcing chamber that is evacuated of all oxygen, filled with an inert gas, and then sealed to prohibit the exchange of gases with the surrounding environment. These devices are incapable of igniting the surrounding gases or vapor/air mixtures under normal operation. Devices of this type are suitable for use in Div. 2/ Zone 2 applications. Hermetically Sealed contact blocks are also extremely useful for switching low energy circuits or circuits applied in atmospheres containing oxidizing agents and pollutants that might effect the performance of silver switching and metal contact elements. Hermetically Sealed Switch performance is consistent and repeatable in almost any environment.

DIELECTRIC STRENGTH (MECHANICAL CONTACTS) 2200V for 1 Minute

**Factory Sealed Contact Block**

**Class I Div. 2 Gr. B,C, & D / Zone 2 Gr. IIB +H2**

| | Utilization Category | | | | |
|---|---|---|---|---|---|
| | IEC | UL | Make | Break | Ith-Thermal |
| | | | Rating | Rating | Current |
| AC | AC-15 | A600 | 7200VA | 720VA | 10A |
| DC | DC-13 | Q300 | 69VA | 69VA | 2.5A |

*NOTE: For AC voltage below 72V AC the max. allowed switching current is 10A = Ith.*
*For DC voltages below 28V DC the max. allowed switching current is 2.5A = Ith.*
*For switching applications below 24V/40mA, Hermetic REED contacts are recommended.*

**Hermetically Sealed Mid-Power Reed Contact Block**

**Class I Div. 2 Gr. A, B, C, & D/Zone 2 Gr. IIC**

| | Utilization Category | | | | |
|---|---|---|---|---|---|
| | IEC | UL | Make | Break | Ith-Thermal |
| | | | Rating | Rating | Current |
| AC | AC-15 | C300 | 1800VA | 180VA | 2.5A |
| DC | DC-13 | Q150 | 69VA | 69VA | 2.5A |

*NOTE: For AC voltage below 72VAC the max. allowed switching current is 2.5A = Ith.*
*For DC voltages below 28VDC the max. allowed switching current is 2.5A = Ith.*
*Suitable for switching DRY Circuits and Low Energy Circuits (Less than 24V-40mA).*

**Hermetically Sealed Power Reed Contact Block**

**Class I Div. 2 Gr. A, B, C, & D/Zone 2 Gr. IIC**

| | Utilization Category | | | | |
|---|---|---|---|---|---|
| | IEC | UL | Make | Break | Ith-Thermal |
| | | | Rating | Rating | Current |
| AC | AC-15 | B300 | 3600VA | 360VA | 5A |
| | AC-15 | C600 | 1800VA | 180V | 2.5A |
| DC | DC-13 | Q300 | 69VA | 69VA | 2.5A |

*NOTE: For AC voltage below 72V AC the max. allowed switching current is 5A = Ith.*
*For DC voltages below 28V DC the max. allowed switching current is 2.5A = Ith.*
*Suitable for switching DRY Circuits and Low Energy Circuits (Less than 24V-40mA).*

**Hermetically Sealed logic reed Contact Block**

**Class I Div. 2 Gr. A, B, C, & D/Zone 2 Gr. IIC**

| | Utilization Category | | | | |
|---|---|---|---|---|---|
| | IEC | UL | Inductive | Resistive | Ith-Thermal Current |
| AC | | 220V Max. | N/A | 40 Watt | 2A |

*Suitable for switching DRY Circuits and Low Energy Circuits (Less than 24V-40mA).*

**Hermetically Sealed mid-logic reed Contact Block**

**Class I Div. 2 Gr. A, B, C, & D/Zone 2 Gr. IIC**

| | Utilization Category | | | | |
|---|---|---|---|---|---|
| | IEC | UL | Inductive | Resistive | Ith-Thermal Current |
| AC | AC-12 | 250V Max. | 40VA | 100 Watt | 3A |

*Suitable for switching DRY Circuits and Low Energy Circuits (Less than 24V-40mA).*

| Indicating Lights | |
|---|---|
| **Light Unit** | **T-Code** |
| FV Incandescent Lights | T4A |
| FV LED Lights | T6 [No marking required] |
| Resistor Lights | T3C |
| **Light Unit** | **T-Code** |
| Resistor LED Lights | T6 |
| Transformer Lights Incd. & LED | T4A |
| Multi-Voltage 20V-240V LED Light | T4A |

| Materials | |
|---|---|
| **Thermoplastic Polyester and Polyester Blends (UV Stabilized for outdoor use)** | **Seals** |
| Operator Housings | Neoprene Gaskets |
| Operator Caps and Handles – | Thermoplastic – Molded Neoprene and alloy de-rivitives |
| Non-Illuminated (Glass Reinforced Grades) | BUNA N – Rubber – Teflon Coated |
| Mounting Rings and Nuts | Thermoplastic – Elastomer Molded Seals |
| Thrust Washer | Fluorosilicone – Boots |
| Trim Washer | **Metal: Stainless Steel** |
| **High Impact Polycarbonate (UV Stabilized for outdoor use)** | Push Pull Bushings |
| Pilot Light Lens | Internal tubes for Maintained Devices |
| Transparent PB and Mushroom Caps | Detents for Maintained Devices |
| **Custom Polymers** | Stainless Steel Springs and Screws throughout |
| Certain CAM and Bearing parts are Teflon, Silicone, & Moly-Disulfide Impregnated for improved wearability | **Aluminum** Optional Mounting Nut |
| Fluorosilicone and Thermoplastic | |
| Neoprene Boot Accessories | |

| Environmental Ratings |
|---|
| Type 1, 2, 3, 3R, 4/4X, 12, 13, and IP65 |
| Operating Temperature |
| -40 to +131° F ( -40 to +55° C ) |
| Storage Temperature |
| -40 to +185° F ( -40 to +85° C ) |
| Operating environments below freezing temperatures are assumed to be absent of freezing liquids or pollutants. |

| Terminal & Wiring Consideration |
|---|
| Wire- AWG 22-12 CU |
| (Copper Only – Solid & Stranded) [.5 ~ 4 mm2 ] |
| One or Two wires permitted per termination |
| Recommended Tightening Torque |
| 7 lb-in (+3.0/-0.0 lb-in) — [ .8 Nm ] |

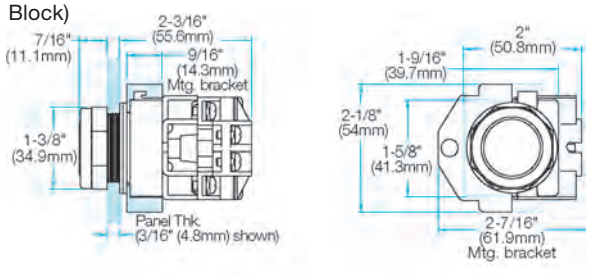
# Pushbuttons and Pilot Lights

CSW30H Series (30mm) Hazardous Duty

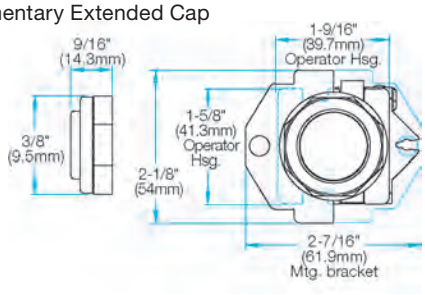
## Momentary Non-Illuminated H-Line Push Buttons

**Fully-assembled operators come standard with one 3/16" (4.8mm) and three 1/16" (1.6mm) gaskets.**

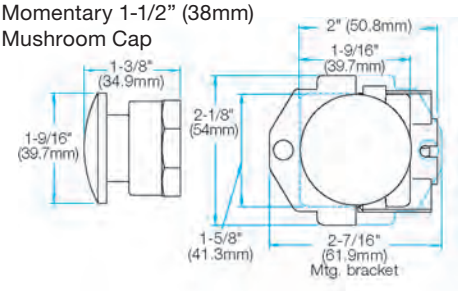
Non-Illuminated Operator
(shown with Flush Cap & Factory Sealed Contact Block)



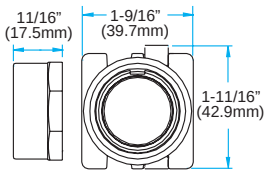

Momentary Extended Cap



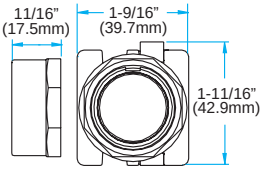

Momentary 1-1/2" (38mm) Mushroom Cap



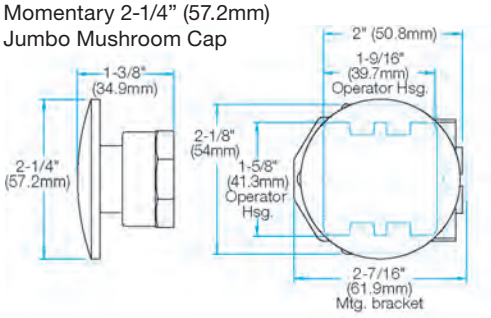

Momentary Guarded Flush Cap



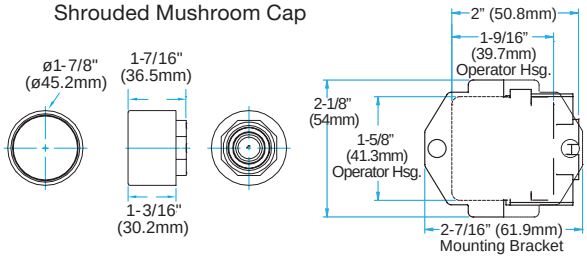

Momentary Guarded Extended Cap



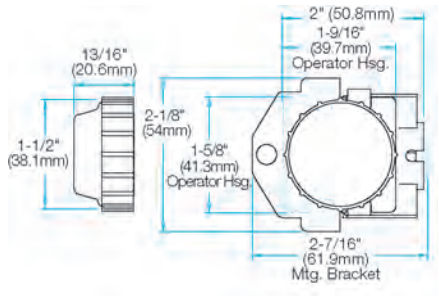

Momentary 2-1/4" (57.2mm) Jumbo Mushroom Cap



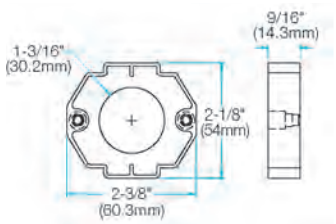

Momentary 1-1/2" (38mm) Shrouded Mushroom Cap



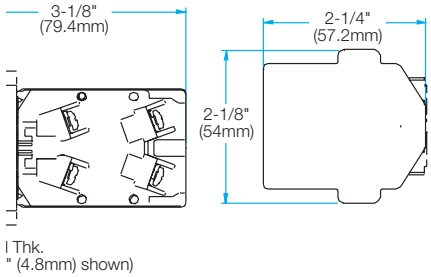

Momentary Fluorosilicone Rubber Boot




Non-Illuminated Push Button Mounting Bracket




Momentary 2-1/4" (57.2mm) Shrouded Jumbo Mushroom Cap



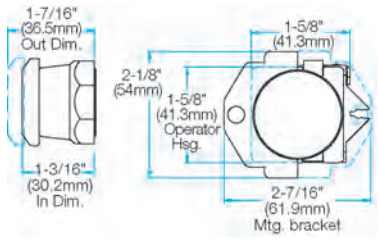



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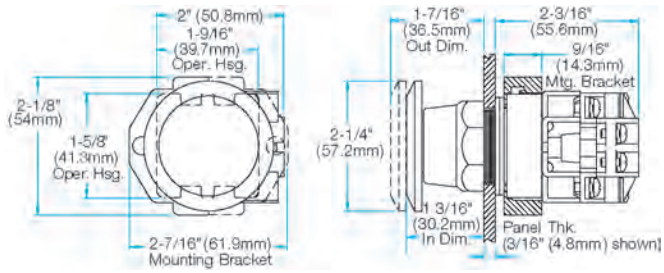
## Maintained non-Illuminated H-Line Push Buttons

Fully-assembled operators come standard with one 3/16" (4.8mm) and three 1/16" (1.6mm) gaskets.

2-Position Push-Pull Maintained
1-1/2" (38mm) Mushroom Cap



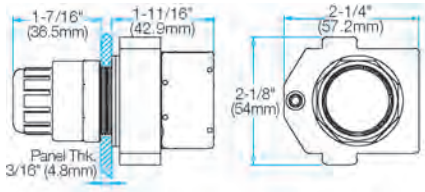

2-Position Push-Pull Maintained Operator
(shown with 2-1/4" (57.2mm) Jumbo Mushroom Cap)



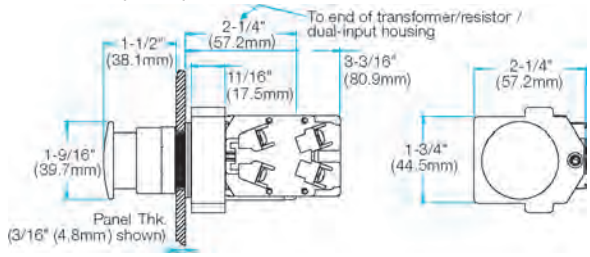

## Momentary Illuminated H-Line Push Buttons

Fully-assembled operators come standard with one 3/16" (4.8mm) and three 1/16" (1.6mm) gaskets.

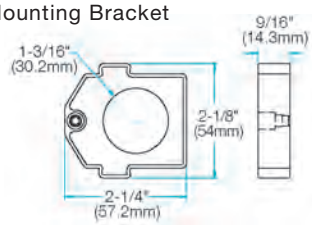
Illuminated Full Voltage Operator



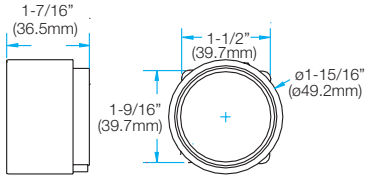

Illuminated Transformer, Resistor
and Dual Input Operators



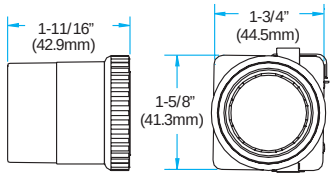

Illuminated Push Button
Mounting Bracket




Illuminated Shrouded
Mushroom Lens



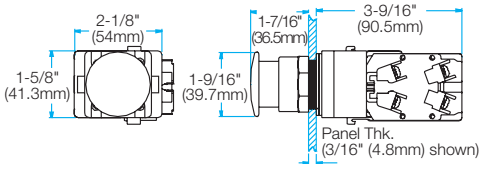

Illuminated Guarded Lens



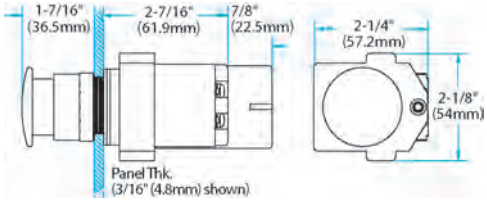

## 2-Position Push-Pull Maintained Illuminated H-Line Push Buttons

Fully-assembled operators come standard with one 3/16" (4.8mm) and three 1/16" (1.6mm) gaskets.

Illuminated Full Voltage Operator




Illuminated Transformer and Resistor
Operators



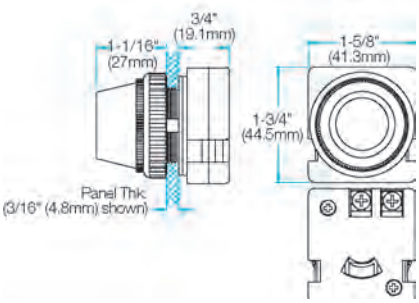
# Pushbuttons and Pilot Lights

## CSW30H Series (30mm) Hazardous Duty

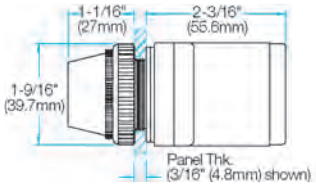
### H-Line Pilot Lights

**Fully-assembled operators come standard with one 3/16" (4.8mm) and two 1/16" (1.6mm) gaskets.**

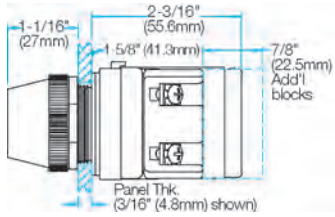
Full Voltage Pilot Light Operator




Transformer & Resistor Pilot Light Operators



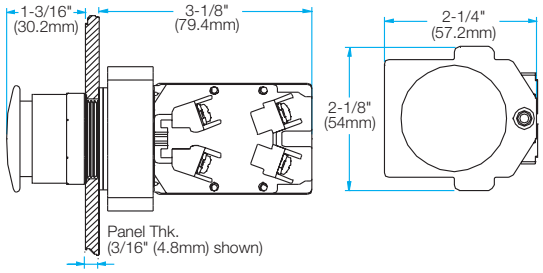

Dual Input Pilot Light Operator



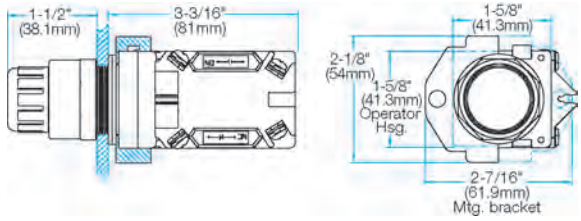

### Push-To-Test H-Line Pilot Lights

**Fully-assembled operators come standard with one 3/16" (4.8mm) and three 1/16" (1.6mm) gaskets.**

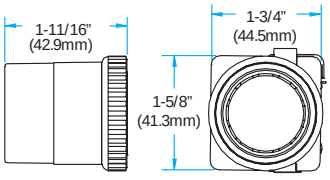
Full Voltage Push-To-Test Operator



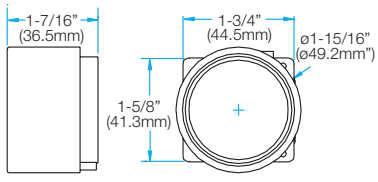

Transformer & Resistor Push-To-Test Operators



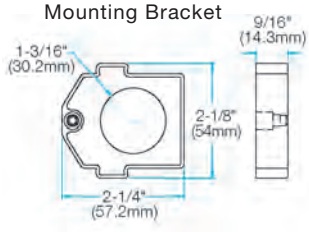

Guarded Lens




Shrouded Mushroom Lens



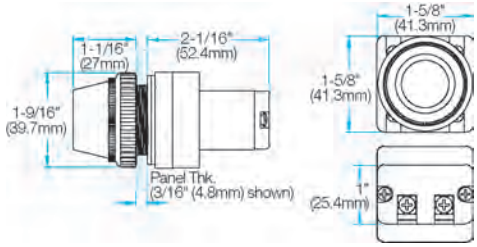

Illuminated Push-To-Test Mounting Bracket




### Multi-Voltage H-Line Pilot Light

**Fully-assembled operators come standard with four 1/16" (1.6mm) gaskets.**

Multi-Voltage Pilot Light



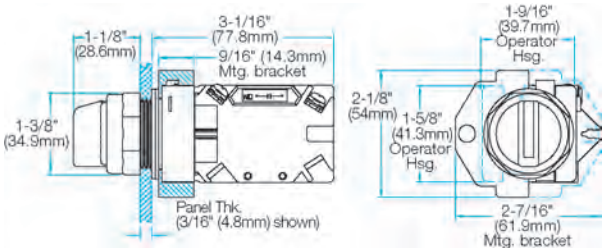



Data is subject to change without notice.

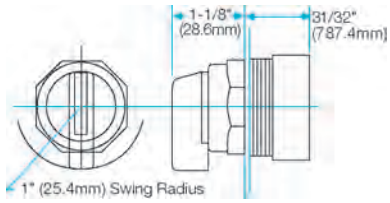
## H-line Selector Switches

**Fully-assembled operators come standard with one 3/16" (4.8mm) and three 1/16" (1.6mm) gaskets.**

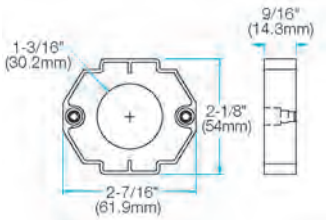
Selector Switch Operator
(shown with standard handle)




Selector Switch Lever Handle

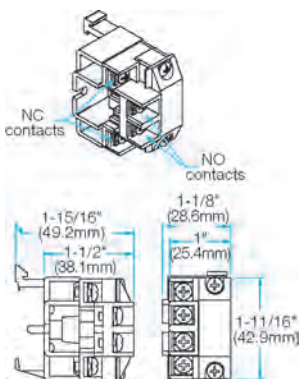



Selector Switch Mounting Bracket

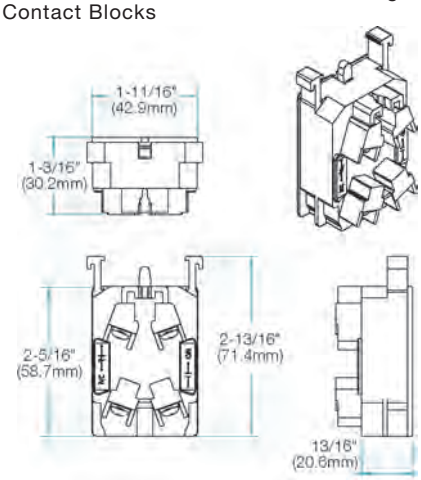



### H-line contact blocks

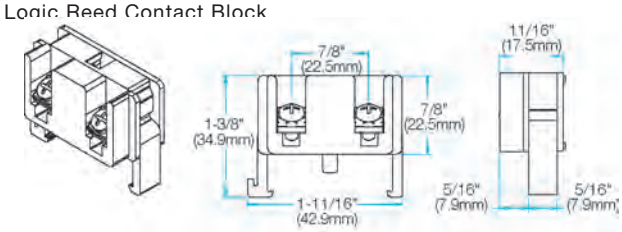
Factory Sealed Contact Block




Power Reed, Mid-Power Reed & Medium Logic Reed Contact Blocks




Logic Reed Contact Block



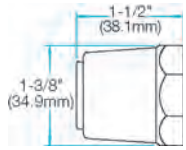
# Pushbuttons and Pilot Lights

## CSW30H Series (30mm) Hazardous Duty

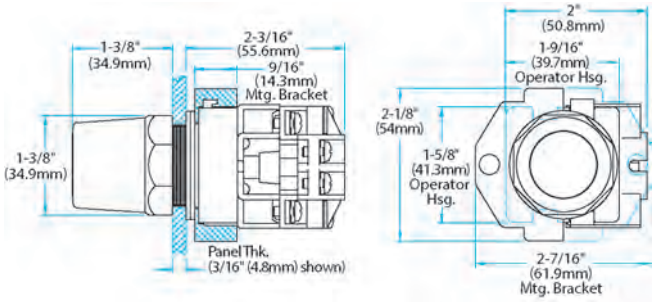
### Maintained Flush & Extended h-line Push Button Caps

**Fully-assembled operators come standard with one 3/16" (4.8mm) and three 1/16" (1.6mm) gaskets.**

Maintained Extended Push Button Cap



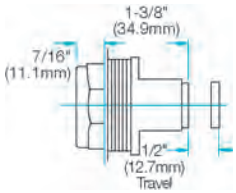

Maintained Flush Push Button Cap
(shown with an operator and contact block)



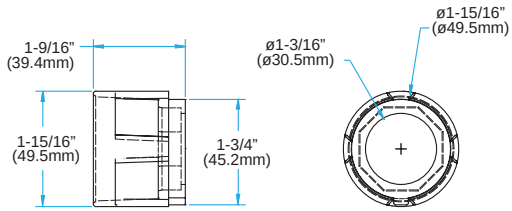

### H-line Reset Push Button

**Fully-assembled operators come standard with one 3/16" (4.8mm) and three 1/16" (1.6mm) gaskets.**

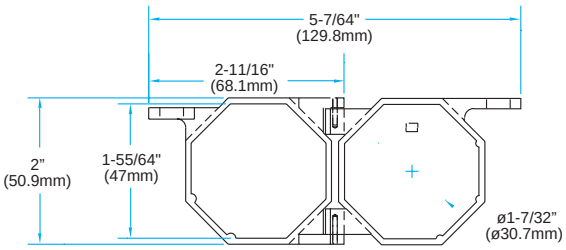
Reset Push Button

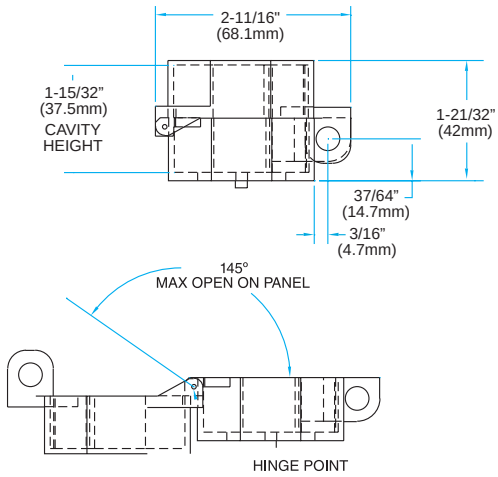



### GUARD ATTACHMENT




### Lock-off attachment



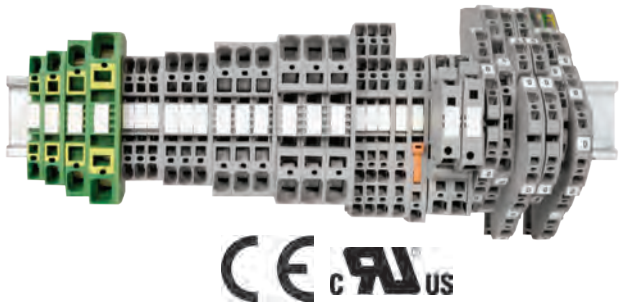






Data is subject to change without notice.

# BTW Series Terminal Blocks

Terminal blocks are devices designed to provide safe and secure electrical and mechanical conductor connections. Among all available connectors, terminal blocks are the most commonly used to their specific characteristics. All parts were developed to assure side-by-side assembly, thus saving space inside panels. Easy assembly of these terminal blocks on DIN Rails reduces panel assembly time.



UL File No. E320231

Two versions are currently available:

1) Screw Type Connection
2) Spring-Clamp Type Connection

## Standard Features:

- Wide Range of Accessories
- Easy Installation
- Unlosable Terminal Screws PA66 Polyamide body with high mechanical resistance
- Inlet tapered cable for easy insertion of conductors
- Stainless Steel Spring on Spring-Clamp type Terminals

# Terminal Blocks

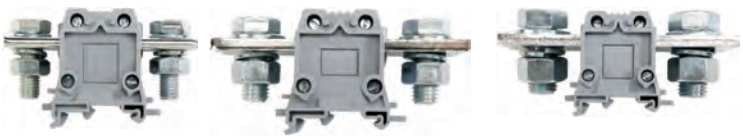
## BTWP

### Terminal Blocks w/ Screw-Type Terminals



*BTWP 2,5* *BTWP 4* *BTWP 6* *BTWP 10* *BTWP 16* *BTWP 35* *BTWP 70*

### Power terminal blocks



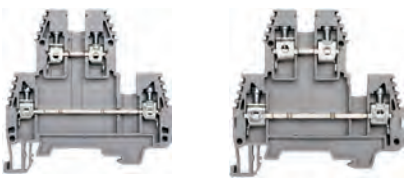
*BTWP 95B* *BTWP 150B* *BTWP 240B*

### Ground terminal blocks



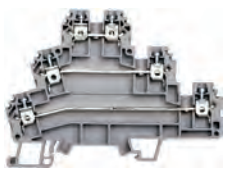
*BTWP 2,5/4T* *BTWP 6/10T* *BTWP 16T*

### Double terminal blocks



*BTWD 2,5N* *BTWD 4N*

### Triple terminal blocks



*BTWT*

### Double terminal block + ground



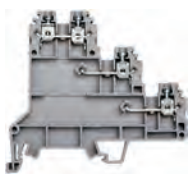
*BTWT 2T*

### Triple terminal block + ground



*BTWT 3T*

### Terminal block for detectors



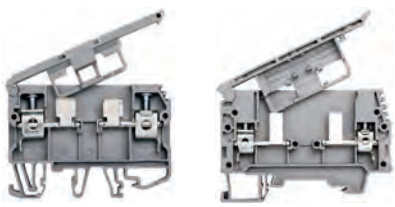
*BTWT 3S*

### Disconnect terminal



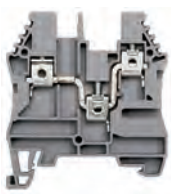
*BTWS 3A*

### Terminal blocks for fuses



*BTWS 2S* *BTWS 4S*

### 1in-2out terminal block



*BTWP 4C*



Data is subject to change without notice.

MULTIPLIER for BTW Series- -Z9

# BTWP Series - Terminal Blocks with screw connection terminals

| | | BTWP 2.5<br>5 mm width | | | BTWP 4<br>6 mm width | | | BTWP 6<br>6 mm width | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Technical data** | | **Voltage / Current / Cross section** | | | **Voltage / Current / Cross section** | | | **Voltage / Current / Cross section** | | |
| IEC 60947-7-1 | | 750 V~ / 24 A / 2.5 mm² | | | 750 V~ / 32 A / 4 mm² | | | 630 V~ / 41 A / 6 mm² | | |
| UL / CSA | | 600 V~ / 20 A / AWG 26 ... 12 | | | 600 V~ / 30 A / AWG 26 ... 10 | | | 600 V~ / 50 A / AWG 26 ... 8 | | |
| Rated Surge Voltage | | 8kV | | | 8kV | | | 8kV | | |
| Pollution degree | | 3 | | | 3 | | | 3 | | |
| Cable stripping | | 10 mm | | | 10 mm | | | 12 mm | | |
| Tightening torque | | 0.4 Nm / 3.54 lb - in | | | 0.5 Nm / 4.42 lb - in | | | 0.8 Nm / 7.08 lb - in | | |
| Connection capacity | | Connection capacity | | | Connection capacity | | | Connection capacity | | |
| Rigid wire | | 0.5 ... 4 mm² | | | 0.5 ... 6 mm² | | | 0.5 ... 10 mm² | | |
| Flexible cable | | 1.5 ... 2.5 mm² | | | 1.5 ... 4 mm² | | | 1.5 ... 6 mm² | | |
| AWG Conductor | | 26 ... 12 | | | 26 ... 10 | | | 26 ... 8 | | |
| **Terminal Block** | **Color** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** |
| | Gray | BTWP 2.5 | 100 | $130 | BTWP 4 | 100 | $160 | BTWP 6 | 100 | $210 |
| | Blue | BTWP 2.5 (AZ) | 100 | $130 | BTWP 4 (AZ) | 100 | $160 | BTWP 6 (AZ) | 100 | $210 |
| | Green | BTWP 2.5 (VD) | 100 | $130 | BTWP 4 (VD) | 100 | $160 | BTWP 6 (VD) | 100 | $210 |
| **Accessories** | | | | | | | | | | |
| **End plate** | **Color** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** |
| 1.5 mm width  | Gray | TF-BTWP 2.5-10 | 100 | $65 | TF-BTWP 2.5-10 | 100 | $65 | TF-BTWP 2.5-10 | 100 | $65 |
| | Blue | TF-BTWP 2.5-10 (AZ) | 100 | $65 | TF-BTWP 2.5-10 (AZ) | 100 | $65 | TF-BTWP 2.5-10 (AZ) | 100 | $65 |
| **Separating Board** | Green | TF-BTWP 2.5-10 (VD) | 100 | $65 | TF-BTWP 2.5-10 (VD) | 100 | $65 | TF-BTWP 2.5-10 (VD) | 100 | $65 |
|  | **Color** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** |
| | Gray | PD-BTWP 2.5-10 | 25 | $17.50 | PD-BTWP 2.5-10 | 25 | $17.50 | PD-BTWP 2.5-10 | 25 | $17.50 |
| **Connecting bridge** | **N°. of poles** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** |
|  | 2 | PC-BTWP 2.5/2 | 25 | $47.50 | PC-BTWP 4/2 | 25 | $47.50 | PC-BTWP 6/2 | 25 | $47.50 |
| | 3 | PC-BTWP 2.5/3 | 20 | $56 | PC-BTWP 4/3 | 20 | $56 | PC-BTWP 6/3 | 20 | $56 |
| | 4 | PC-BTWP 2.5/4 | 15 | $57 | PC-BTWP 4/4 | 15 | $57 | PC-BTWP 6/4 | 15 | $57 |
| | 10 | PC-BTWP 2.5/10 | 5 | $44 | PC-BTWP 4/10 | 5 | $44 | PC-BTWP 6/10 | 5 | $44 |
| **End bracket** | **Color** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** |
| 8 mm width  | Gray | PF3-BTW | 100 | $120 | PF3-BTW | 100 | $120 | PF3-BTW | 100 | $120 |
|  | Gray | PF4-BTW | 100 | $120 | PF4-BTW | 100 | $120 | PF4-BTW | 100 | $120 |
| **Din rail / Support** | **Type** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** |
|  | Flat | MR 35x7.5 | 2 m busbars | $14 | MR 35x7.5 | 2 m busbars | $14 | MR 35x7.5 | 2 m busbars | $14 |
| Din EN 50022  | Support | ST-BTW | 25 | $75 | ST-BTW | 25 | $75 | ST-BTW | 25 | $75 |
| **Group indentifier** | **Assembly** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** |
|  | Din rail | IG-BTW | 50 | $75 | IG-BTW | 50 | $75 | IG-BTW | 50 | $75 |
|  | End Bracket | IG22-BTW (1) | 25 | $37.50 | IG22-BTW (1) | 25 | $37.50 | IG22-BTW (1) | 25 | $37.50 |
| **Identifier (2)** | | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** |
|  | | IDG10/5-BTW | 440 | $60 | IDG10/6-BTW | 360 | $60 | IDG10/6-BTW | 360 | $60 |
| | | IDB5-BTW | 500 | $50 | IDG10/5-BTW | 440 | $60 | IDG10/5-BTW | 440 | $60 |
| | | IDG6/5-BTW | 400 | $50 | IDB5-BTW | 500 | $50 | IDB5-BTW | 500 | $50 |
| | | | | | IDG6/5-BTW | 400 | $50 | IDG6/5-BTW | 400 | $50 |

*(1) For assembly on PF4-BTW end bracket only.*
*(2) Further details about identifiers on page 349.*

# Terminal Blocks

## BTWP

### BTWP Series - Terminal blocks with screw connection terminals

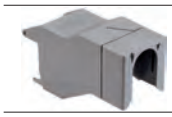
| | | BTWP 10<br>10 mm width | | | BTWP 16<br>12 mm width | | | BTWP 35<br>16 mm width | | | BTWP 70<br>22 mm width | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Technical data** | | **Voltage / Current / Cross section** | | | **Voltage / Current / Cross section** | | | **Voltage / Current / Cross section** | | | **Voltage / Current** | | |
| IEC 60947-7-1 | | 630 V~ / 57 A / 10 mm² | | | 750 V~ / 76 A / 16 mm² | | | 750 V~ / 125 A / 35 mm² | | | 750 V~ / 192 A / 70 mm² | | |
| UL / CSA | | 600 V~ / 65 A / AWG 16 ... 6 | | | 600 V~ / 85 A / AWG 12 ... 4 | | | 600 V~ / 115 A / AWG 10 ... 2 | | | 600 V~ / 175 A / AWG 6...2/0 | | |
| Rated Surge Voltage | | 8kV | | | 8kV | | | 8kV | | | - | | |
| Pollution degree | | 3 | | | 3 | | | 3 | | | - | | |
| Cable stripping | | 12 mm | | | 16 mm | | | 18 mm | | | 20 mm | | |
| Tightening torque | | 1.2 Nm / 10.62 lb - in | | | 1.2 Nm / 10.62 lb - in | | | 2.5 Nm / 22.12 lb - in | | | 6 Nm / 53.10 lb - in | | |
| Connection capacity | | Connection capacity | | | Connection capacity | | | Connection capacity | | | Connection capacity | | |
| Rigid wire | | 1.5 ... 16 mm² | | | 1.5 ... 16 mm² | | | 6 ... 16 mm² | | | 10 ... 16 mm² | | |
| Flexible cable | | 1.5 ... 10 mm² | | | 1.5 ... 16 mm² | | | 10 ... 35 mm² | | | 10 ... 70 mm² | | |
| AWG Conductor | | 16 ... 6 | | | 12 ... 4 | | | 10 ... 2 | | | 6 ... 2/0 | | |
| **Terminal Block** | **Color** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** |
| | Gray | **BTWP 10** | 100 | $270 | **BTWP 16** | 50 | $210 | **BTWP 35** | 50 | $400 | **BTWP 70** | 10 | $300 |
| | Blue | **BTWP 10 (AZ)** | 100 | $270 | **BTWP 16 (AZ)** | 50 | $210 | **BTWP 35 (AZ)** | 50 | $400 | **BTWP 70 (AZ)** | 10 | $300 |
| | Green | **BTWP 10 (VD)** | 100 | $270 | **BTWP 16 (VD)** | 50 | $210 | **BTWP 35 (VD)** | 50 | $400 | **BTWP 70 (VD)** | 10 | $300 |
| **Accessories** | | | | | | | | | | | | | |
| **End plate** | **Color** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | - | | | - | | |
| 1.5 mm width | Gray | TF-BTWP 2.5-10 | 100 | $65 | TF-BTWP 16 | 100 | $100 | - | | | - | | |
| | Blue | TF-BTWP 2.5-10 (AZ) | 100 | $65 | TF-BTWP 16 (AZ) | 100 | $100 | - | | | - | | |
| | Green | TF-BTWP 2.5-10 (VD) | 100 | $65 | TF-BTWP 16 (VD) | 100 | $100 | - | | | - | | |
| **Separating board** | **Color** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Qty/Pack.** | **List Price/Pack** | | | | | | | |
| | Gray | PD-BTWP 2.5-10 | 25 | $17.50 | PD-BTWP 2.5-10 | 25 | $25 | - | | | - | | |
| **Connecting bridge** | **N°. of poles** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | | | |
| | 2 | **PC-BTWP 10/2** | 25 | $75 | **PC-BTWP 16/2** | 25 | $75 | **PC-BTWP 35/2** | 25 | $150 | - | | |
| | 3 | **PC-BTWP 10/3** | 20 | $100 | **PC-BTWP 16/3** | 20 | $100 | **PC-BTWP 35/3** | 20 | $160 | - | | |
| | 4 | **PC-BTWP 10/4** | 15 | $90 | **PC-BTWP 16/4** | 15 | $90 | **PC-BTWP 35/4** | 15 | $150 | - | | |
| | 10 | **PC-BTWP 10/10** | 5 | $70 | PC-BTWP 16/10 | 5 | $70 | PC-BTWP 35/10 | 5 | $100 | - | | |
| **End bracket** | **Color** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** |
| 8 mm width | Gray | **PF3-BTW** | 100 | $120 | **PF3-BTW** | 100 | $120 | **PF3-BTW** | 100 | $120 | **PF3-BTW** | 100 | $120 |
| | Gray | **PF4-BTW** | 100 | $120 | **PF4-BTW** | 100 | $120 | **PF4-BTW** | 100 | $120 | **PF4-BTW** | 100 | $120 |
| **Din rail / Support** | **Type** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** |
| | Flat | MR 35x7.5 | 2 m bus bars | $14 | MR 35x7.5 | 2 m bus bars | $14 | MR 35x7.5 | 2 m bus bars | $14 | **MR 35x7.5** | 2 m bus bars | $14 |
| | Support | ST-BTWw | 25 | $75 | ST-BTW | 25 | $75 | ST-BTW | 25 | $75 | **ST-BTW** | 25 | $75 |
| **Group identifier** | **Assembly** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** |
| | Din Rail | **IG-BTW** | 50 | $75 | **IG-BTW** | 50 | $75 | **IG-BTW** | 50 | $75 | **IG-BTW** | 50 | $75 |
| | End Bracket | **IG22-BTW** (1) | 25 | $37.50 | **IG22-BTW** (1) | 25 | $37.50 | **IG22-BTW** (1) | 25 | $37.50 | **IG22-BTW** (1) | 25 | $37.50 |
| **Identifier** (2) | | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/ Pack** |
| | | **IDG10/6-BTW** | 360 | $60 | **IDG10/6-BTW** | 360 | $60 | **IDG10/6-BTW** | 360 | $60 | **IDG10/6-BTW** | 360 | $60 |
| | | **IDG10/5-BTW** | 440 | $60 | **IDG10/5-BTW** | 440 | $60 | **IDG10/5-BTW** | 440 | $60 | **IDG10/5-BTW** | 440 | $60 |
| | | **IDB5-BTW** | 500 | $50 | **IDB5-BTW** | 500 | $50 | **IDB5-BTW** | 500 | $50 | **IDB5-BTW** | 500 | $50 |
| | | **IDG6/5-BTW** | 400 | $50 | **IDG6/5-BTW** | 400 | $50 | **IDG6/5-BTW** | 400 | $50 | **IDG6/5-BTW** | 400 | $50 |

*(1) For assembly on PF4-BTW end bracket only.*
*(2) Further details about identifiers on page 349.*



Data is subject to change without notice.

## BTWP Series - Power terminal blocks

| | | BTWP 95B<br>40 mm width | | | BTWP 150B<br>48 mm width | | | BTWP 240B<br>53 mm width | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Technical data** | | **Voltage / Current /Cross section** | | | **Voltage / Current / Cross section** | | | **Voltage / Current / Cross section** | | |
| IEC 60947-7-1 | | 1000 V~ / 232 A / 95 mm² | | | 1000 V~ / 309 A / 150 mm² | | | 1000 V~ / 415 A / 240 mm² | | |
| UL/CSA | | (3) | | | (3) | | | (3) | | |
| Rated Surge Voltage | | 8kV | | | 8kV | | | 8kV | | |
| Pollution degree | | 3 | | | 3 | | | 3 | | |
| Screw | | M10x30 | | | M12x30 | | | M16x35 | | |
| Tightening torque | | 6 Nm / 53.10 lb - in | | | 8 Nm / 70.80 lb - in | | | 10 Nm / 88.50 lb - in | | |
| **Terminal Block** | **Color** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack.** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack.** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack.** |
| | Gray | **BTWP 95B** | 4 | $188 | **BTWP 150B** | 4 | $244 | **BTWP 240B** | 4 | $324 |
| **Accessories** | | | | | | | | | | |
| **Isolation cover** | **Color** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack.** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack.** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack.** |
|  | Gray | **TI-BTWP 95** | 4 | $40 | **TI-BTWP 150** | 4 | $48 | **TI-BTWP 240** | 4 | $68 |
| **Din rail / Support** | **Type** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack.** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack.** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack.** |
| DIN EN 50022<br>  | Flat | **MR 35x7.5** | 2 m bus bars | $14 | **MR 35x7.5** | 2 m bus bars | $14 | **MR 35x7.5** | 2 m bus bars | $14 |
|  | Support | **ST-BTW** | 25 | $75 | **ST-BTW** | 25 | $75 | **ST-BTW** | 25 | $75 |
| **Group identifier** | **Assembly** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack.** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack.** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack.** |
|  | Din Rail | **IG-BTW** | 50 | $75 | **IG-BTW** | 50 | $75 | **IG-BTW** | 50 | $75 |
| **Identifier** [2] | | **Catalog Number** | **Qty/Pack.** | **List Price/Pack.** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack.** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack.** |
|  | | **IDG10/6-BTW** | 360 | $60 | **IDG10/6-BTW** | 360 | $60 | **IDG10/6-BTW** | 360 | $60 |
| | | **IDG10/5-BTW** | 440 | $60 | **IDG10/5-BTW** | 440 | $60 | **IDG10/5-BTW** | 440 | $60 |
| | | **IDB5-BTW** | 500 | $50 | **IDB5-BTW** | 500 | $50 | **IDB5-BTW** | 500 | $50 |
| | | **IDG6/5-BTW** | 400 | $50 | **IDG6/5-BTW** | 400 | $50 | **IDG6/5-BTW** | 400 | $50 |

*(2) Further details about identifiers on page 349.*
*(3) UL/CSA pending*

# Terminal Blocks

## BTWP

### BTWP Series - Ground terminal blocks

| | BTWP 2.5/4T<br>6 mm width | BTWP 6/10T<br>10 mm width | BTWP 16T<br>16 mm width |
|---|---|---|---|
| |  |  |  |

| Technical data | Cross section | Cross section | Cross section |
|---|---|---|---|
| IEC 60947-7-1 | 4 mm² | 10 mm² | 16 mm² |
| UL / CSA | AWG 26 ... 10 | AWG 16 ... 8 | [3] |
| Rated Surge Voltage | 8kV | 8kV | 8kV |
| Pollution degree | 3 | 3 | 3 |
| Cable stripping | 10 mm | 12 mm | 18 mm |
| Tightening torque | 0.5 Nm / 4.42 lb - in | 1.2 Nm / 10.62 lb - in | 2.5 Nm / 22.12 lb - in |
| Connection capacity | Connection capacity | Connection capacity | Connection capacity |
| Rigid wire | 0.5 ... 6 mm² | 1.5 ... 16 mm² | 6 ... 16 mm² |
| Flexible cable | 1.5 ... 4 mm² | 1.5 ... 10 mm² | 10 ... 35 mm² |
| AWG conductor | 26 ... 10 | 16 ... 8 | 10 ... 2 |

| Terminal Block | Color | Catalog Number | Qty/Pack. | List Price/Pack | Catalog Number | Qty/Pack. | List Price/Pack | Catalog Number | Qty/Pack. | List Price/Pack |
|---|---|---|---|---|---|---|---|---|---|---|
| | Gr/Ye | BTWP 2.5/4T | 50 | $275 | BTWP 6/10T | 25 | $187.50 | BTWP 16T | 25 | $325 |

## Accessories

| Din rail / Support | Type | Catalog Number | Qty/Pack. | List Price/Pack | Catalog Number | Qty/Pack. | List Price/Pack | Catalog Number | Qty/Pack. | List Price/Pack |
|---|---|---|---|---|---|---|---|---|---|---|
| DIN EN 50022  | Flat | MR 35x7.5 | 2 m bus bars | $14 | MR 35x7.5 | 2 m bus bars | $14 | MR 35x7.5 | 2 m bus bars | $14 |
| | Support | ST-BTW | 25 | $75 | ST-BTW | 25 | $75 | ST-BTW | 25 | $75 |

| Group identifier | Assembly | Catalog Number | Qty/Pack. | List Price/Pack | Catalog Number | Qty/Pack. | List Price/Pack | Catalog Number | Qty/Pack. | List Price/Pack |
|---|---|---|---|---|---|---|---|---|---|---|
|  | Din Rail | IG-BTW | 50 | $75 | IG-BTW | 50 | $75 | IG-BTW | 50 | $75 |

| Identifier [2] | Catalog Number | Qty/Pack. | List Price/Pack | Catalog Number | Qty/Pack. | List Price/Pack | Catalog Number | Qty/Pack. | List Price/Pack |
|---|---|---|---|---|---|---|---|---|---|
|  | IDG10/6-BTW | 360 | $60 | IDG10/6-BTW | 360 | $60 | IDG10/6-BTW | 360 | $60 |
| | IDG10/5-BTW | 440 | $60 | IDG10/5-BTW | 440 | $60 | IDG10/5-BTW | 440 | $60 |
| | IDB5-BTW | 500 | $50 | IDB5-BTW | 500 | $50 | IDB5-BTW | 500 | $50 |
| | IDG6/5-BTW | 400 | $50 | IDG6/5-BTW | 400 | $50 | IDG6/5-BTW | 400 | $50 |

*(2) Further details about identifiers on page 349.*
*(3) UL/CSA pending*



Data is subject to change without notice.

## BTWP Series - Double and triple terminal blocks

| | | Double Terminal Block | | | | | | Triple Terminal Block | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | BTWD 2.5N<br>5 mm width  | | | BTWD 4N<br>6 mm width  | | | BTWT 3<br>6 mm width  | | |
| **Technical data** | | **Voltage / Current / Cross section** | | | **Voltage / Current / Cross section** | | | **Voltage / Current / Cross section** | | |
| IEC 60947-7-1 | | 500 V~ / 24 A / 2.5 mm² | | | 500 V~ / 32 A / 4 mm² | | | 440 V~ / 24 A / 2.5 mm² | | |
| UL / CSA | | 300 V~ / 20 A / AWG 26 ... 12 | | | 300 V~ / 30 A / AWG 26 ... 10 | | | 300 V~ / 24 A / AWG 24 ... 12 | | |
| Rated Surge Voltage | | 8kV | | | 8kV | | | 8kV | | |
| Pollution degree | | 3 | | | 3 | | | 3 | | |
| Cable stripping | | 9 mm | | | 9 mm | | | 9 mm | | |
| Tightening torque | | 0.4 Nm / 13.54 lb - in | | | 0.5 Nm / 14.42 lb - in | | | 0.4 Nm / 13.54 lb - in | | |
| Connection capacity | | Connection capacity | | | Connection capacity | | | Connection capacity | | |
| Rigid wire | | 0.5 ... 4 mm² | | | 0.5 ... 6 mm² | | | 0.5 ... 4 mm² | | |
| Flexible cable | | 1.5 ... 2.5 mm² | | | 1.5 ... 4 mm² | | | 1.5 ... 2.5 mm² | | |
| AWG Conductor | | 26 ... 12 | | | 26 ... 10 | | | 24 ... 12 | | |
| **Terminal Block** | **Color** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** |
| | Gray | **BTWD 2.5N** | 100 | $430 | **BTWD 4N** | 100 | $460 | **BTWT 3** | 25 | $185 |

## Accessories

| **End plate** | **Color** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** |
|---|---|---|---|---|---|---|---|---|---|---|
| 1.5 mm width  | Gray | **TF-BTWD 2.5-4N** | 25 | $32.50 | **TF-BTWD 2.5-4N** | 25 | $32.50 | **TF-BTWT 3** | 10 | $13 |
| **Connecting bridge** | **Nº. of poles** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** |
|  | 2 | **PC-BTWP 2.5/2** | 25 | $47.50 | **PC-BTWP 4/2** | 25 | $47.50 | **PC-BTWT 2.5/2** | 25 | $47.50 |
| | 3 | **PC-BTWP 2.5/3** | 20 | $56 | **PC-BTWP 4/3** | 20 | $56 | **PC-BTWT 2.5/3** | 20 | $56 |
| | 4 | **PC-BTWP 2.5/4** | 15 | $57 | **PC-BTWP 4/4** | 15 | $57 | **PC-BTWT 2.5/4** | 15 | $57 |
| | 10 | **PC-BTWP 2.5/10** | 5 | $44 | **PC-BTWP 4/10** | 5 | $44 | **PC-BTWT 2.5/10** | 5 | $44 |
| **End bracket** | **Color** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** |
| 8 mm width  | Gray | **PF3-BTW** | 100 | $120 | **PF3-BTW** | 100 | $120 | **PF3-BTW** | 100 | $120 |
|  | Gray | **PF4-BTW** | 100 | $120 | **PF4-BTW** | 100 | $120 | **PF4-BTW** | 100 | $120 |
| **Din rail / Support** | **Type** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** |
| DIN EN 50022  | Flat | **MR 35x7.5** | 2 m bus bars | $14 | **MR 35x7.5** | 2 m bus bars | $14 | **MR 35x7.5** | 2 m bus bars | $14 |
| | Supoort | **ST-BTW** | 250 | $75 | **ST-BTW** | 250 | $75 | **ST-BTW** | 250 | $75 |
| **Identifier group** | **Assembly** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** |
|  | Din Rail | **IG-BTW** | 50 | $75 | **IG-BTW** | 50 | $75 | **IG-BTW** | 50 | $75 |
| | End Bracket | **IG22-BTW** (1) | 25 | $37.50 | **IG22-BTW** (1) | 25 | $37.50 | **IG22-BTW** (1) | 25 | $37.50 |
| **Identifier** (2) | | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** |
|  | | **IDG10/5T-BTW** | 440 | $60 | **IDG10/6T-BTW** | 360 | $60 | **IDB5-BTW** | 500 | $50 |
| | | **IDB5-BTW** | 500 | $50 | **IDG10/5T-BTW** | 440 | $60 | | | |
| | | **IDG6/5-BTW** | 400 | $50 | **IDB5-BTW** | 500 | $50 | | | |
| | | | | | **IDG6/5-BTW** | 400 | $50 | | | |

*(1) For assembly on PF4-BTW end bracket.*
*(2) Further details about identifiers on page 349.*
*(3) UL/CSA pending*

# Terminal Blocks

## BPWT

### Double and Triple terminal block + ground
### Terminal block for detectors

| | BTWT 2T<br>6 mm width | BTWT 3T<br>6 mm width | BTWT 3S<br>6 mm width | BTWS 3A<br>6 mm width |
|---|---|---|---|---|
| Technical data | Voltage / Current / Cross Section | Voltage / Current / Cross Section | Voltage / Current / Cross Section | Voltage / Current / Cross Section |
| IEC 60947-7-1 | 440 V~ / 24 A / 2.5 mm² | 440 V~ / 24 A / 2.5 mm² | 500 V~ / 24 A / 2.5 mm² | 500 V~ / 16 A / 4 mm² |
| UL / CSA | 300 V~ / 24 A / AWG 24 ... 12 | 300 V~ / 24 A / AWG 24 ... 12 | (3) | 600 V~ / 16 A / AWG 26...10 |
| Rated Surge Voltage | 8kV | 8kV | 8kV | 8kV |
| Pollution degree | 3 | 3 | 3 | 3 |
| Cable stripping | 9 mm | 9 mm | 9 mm | 10 mm |
| Tightening torque | 0.4 Nm / 13.54 lb - in | 0.4 Nm / 13.54 lb - in | 0.4 Nm / 13.54 lb - in | 0.5 Nm / 4.42 lb - in |
| Connection capacity | Connection capacity | Connection capacity | Connection capacity | Connection capacity |
| Rigid wire | 0.5 ... 4 mm² | 0.5 ... 4 mm² | 0.5 ... 4 mm² | 0.5 ... 6 mm² |
| Flexible cable | 1.5 ... 2.5 mm² | 1.5 ... 2.5 mm² | 1.5 ... 2.5 mm² | 1.5 ... 4 mm² |
| AWG Conductor | 24 ... 12 | 24 ... 12 | 24 ... 12 | 26 ... 10 |

| Terminal Block | Color | Catalog Number | Qty/Pack. | List Price/Pack | Catalog Number | Qty/Pack. | List Price/Pack | Catalog Number | Qty/Pack. | List Price/Pack | Catalog Number | Qty/Pack. | List Price/Pack |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gray | BTWT 2T | 25 | $200 | BTWT 3T | 25 | $287.50 | BTWT 3S | 20 | $100 | BTWS 3A | 20 | $100 |

### Accessories

| End plate | Color | Catalog Number | Qty/Pack. | List Price/Pack | Catalog Number | Qty/Pack. | List Price/Pack | Catalog Number | Qty/Pack. | List Price/Pack | Catalog Number | Qty/Pack. | List Price/Pack |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.5 mm width  | Gray | TF-BTWT 2T | 10 | $13 | TF-BTWT 3T | 10 | $13 | TF-BTWT 3S | 10 | $13 | TF-BTWS 3 | 10 | $10 |

| Connecting bridge | No.Poles | Catalog Number | Qty/Pack. | List Price/Pack | Catalog Number | Qty/Pack. | List Price/Pack | Catalog Number | Qty/Pack. | List Price/Pack | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | 2 | PC-BTWT 2.5/2 | 25 | $47.50 | PC-BTWT 2.5/2 | 25 | $47.50 | PC-BTWT 2.5/2 | 25 | $47.50 | - | | |
| | 3 | PC-BTWT 2.5/3 | 20 | $56 | PC-BTWT 2.5/3 | 20 | $56 | PC-BTWT 2.5/3 | 20 | $56 | - | | |
| | 4 | PC-BTWT 2.5/4 | 15 | $57 | PC-BTWT 2.5/4 | 15 | $57 | PC-BTWT 2.5/4 | 15 | $57 | - | | |
| | 10 | PC-BTWT 2.5/10 | 5 | $44 | PC-BTWT 2.5/10 | 5 | $44 | PC-BTWT 2.5/10 | 5 | $44 | - | | |

| End bracket | Color | Catalog Number | Qty/Pack. | List Price Pack | Catalog Number | Qty/Pack. | List Price/ Pack | Catalog Number | Qty/Pack. | List Price Pack | Catalog Number | Qty/Pack. | List Price/ Pack |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8 mm width  | Gray | PF3-BTW | 100 | $120 | PF3-BTW | 100 | $120 | PF3-BTW | 100 | $120 | PF3-BTW | 100 | $120 |
| | Gray | PF4-BTW | 100 | $120 | PF4-BTW | 100 | $120 | PF4-BTW | 100 | $120 | PF4-BTW | 100 | $120 |

| Rail / Support | Type | Catalog Number | Qty/Pack. | List Price/Pack | Catalog Number | Qty/Pack. | List Price/Pack | Catalog Number | Qty/Pack. | List Price/Pack | Catalog Number | Qty/Pack. | List Price/Pack |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Din EN 50022  | Flat | MR 35x7.5 | 2 m busbars | $14 | MR 35x7.5 | 2 m busbars | $14 | MR 35x7.5 | 2 m busbars | $14 | MR 35x7.5 | 2 m busbars | $14 |
| | Support | ST-BTW | 25 | $75 | ST-BTW | 25 | $75 | ST-BTW | 25 | $75 | ST-BTW | 25 | $75 |

| Identifier group | Assembly | Catalog Number | Qty/Pack. | List Price/Pack | Catalog Number | Qty/Pack. | List Price/Pack | Catalog Number | Qty/Pack. | List Price/Pack | Catalog Number | Qty/Pack. | List Price/Pack |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | Din Rail | IG-BTW | 50 | $75 | IG-BTW | 50 | $75 | IG-BTW | 50 | $75 | IG-BTW | 50 | $75 |
| | End Bracket | IG22-BTW (1) | 25 | $37.50 | IG22-BTW (1) | 25 | $37.50 | IG22-BTW (1) | 25 | $37.50 | IG22-BTW (1) | 25 | $37.50 |

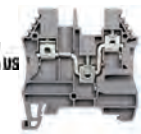
| Identifier (2) | Catalog Number | Qty/Pack. | List Price/Pack | Catalog Number | Qty/Pack. | List Price/Pack | Catalog Number | Qty/Pack. | List Price/Pack | Catalog Number | Qty/Pack. | List Price/Pack |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | IDB5-BTW | 500 | $50 | IDB5-BTW | 500 | $50 | IDB5-BTW | 500 | $50 | IDG10/6-BTW | 360 | $60 |
| | | | | | | | | | | IDG10/5-BTW | 440 | $60 |
| | | | | | | | | | | IDB5-BTW | 500 | $50 |
| | | | | | | | | | | IDG6/5-BTW | 400 | $50 |

Note: (1) For assembly on PF4-BTW end bracket.
(2) Further information about identifiers on page 349.
(3) UL/CSA pending



Data is subject to change without notice.

## BTWS Series - Terminal blocks for fuses
## BWWP Series - 1IN-2OUT terminal block

| | | Terminal Block for fuses | | | | | | 1 IN / 2 OUT Terminal Block | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | BTWS 2S<br>8 mm width | | | BTWS 4S<br>10 mm width | | | BTWP 4C<br>6 mm width | | |
| | |  | | |  | | |  | | |
| Technical data | | Voltage / Current / Cross section | | | Voltage / Current / Cross section | | | Voltage / Current / Cross section | | |
| IEC 60947-7-1 | | 500 V~ / 6.3 A / 6 mm² | | | 750 V~ / 6.3 A / 6 mm² | | | 750 V~ / 32 A / 4 mm² | | |
| UL / CSA | | 300 V~ / 6.3 A / AWG 26 ... 8 | | | 600 V~ / 6.3 A / AWG 22 ... 8 | | | 3 | | |
| Rated Surge Voltage | | 8kV | | | | | | | | |
| Pollution degree | | 3 | | | | | | | | |
| Fuse dimensions | | 5x20 ou 5x25 mm | | | 6.35x31.75 mm (1/4"x1 1/4") | | | - | | |
| Cable stripping | | 12 mm | | | 12 mm | | | 10 mm | | |
| Tightening torque | | 0.8 Nm / 7.08 lb - in | | | 0.8 Nm / 7.08 lb - in | | | 0.5 Nm / 4.42 lb - in | | |
| Connection capacity | | Connection capacity | | | Connection capacity | | | Connection capacity | | |
| Rigid wire | | 0.5 ... 10 mm² | | | 0.5 ... 10 mm² | | | 0.5 ... 6 mm² | | |
| Flexible cable | | 1.5 ... 6 mm² | | | 1.5 ... 6 mm² | | | 1.5 ... 4 mm² | | |
| AWG Conductor | | 26 ... 8 | | | 22 ... 8 | | | 26 ... 10 | | |
| Terminal Block | Color | Catalog Number | Qty/Pack. | List Price/Pack | Catalog Number | Qty/Pack. | List Price/Pack | Catalog Number | Qty/Pack. | List Price/Pack |
| | Gray | BTWS 2S | 50 | $525 | BTWS 4S<br>Note!<br>Accept reserve fuse disconnect lever. | 20 | $210 | BTWP 4C | 50 | $250 |
| Accessories | | | | | | | | | | |
| End plate | Color | Catalog Number | Qty/Pack. | List Price/Pack | Catalog Number | Qty/Pack. | List Price/Pack | Catalog Number | Qty/Pack. | List Price/Pack |
| 1.5 mm width  | Gray | TF-BTWS 2 | 10 | $10 | Supplied with end plate as standard | | | TF-BTWP 4C | 10 | $10 |
| End bracket | Color | Catalog Number | Qty/Pack. | List Price/Pack | Catalog Number | Qty/Pack. | List Price/Pack | Catalog Number | Qty/Pack. | List Price/Pack |
| 8 mm width  | Gray | PF3-BTW | 100 | $120 | PF3-BTW | 100 | $120 | PF3-BTW | 100 | $120 |
| | Gray | PF4-BTW | 100 | $120 | PF4-BTW | 100 | $120 | PF4-BTW | 100 | $120 |
| Rail / Support | Type | Catalog Number | Qty/Pack. | List Price/Pack | Catalog Number | Qty/Pack. | List Price/Pack | Catalog Number | Qty/Pack. | List Price/Pack |
| DIN EN 50022  | Flat | MR 35x7.5 | 2 m busbars | $14 | MR 35x7.5 | 2 m busbars | $14 | MR 35x7.5 | 2 m busbars | $14 |
| | Support | ST-BTW | 25 | $75 | ST-BTW | 25 | $75 | ST-BTW | 25 | $75 |
| Group identifier | Assembly | Catalog Number | Qty/Pack. | List Price/Pack | Catalog Number | Qty/Pack. | List Price/Pack | Catalog Number | Qty/Pack. | List Price/Pack |
|  | Din Rail | IG-BTW | 50 | $75 | IG-BTW | 50 | $75 | IG-BTW | 50 | $75 |
| | End Bracket | IG22-BTW (1) | 25 | $37.50 | IG22-BTW (1) | 25 | $37.50 | IG22-BTW (1) | 25 | $37.50 |
| Identifier(2) | | Catalog Number | Qty/Pack. | List Price/Pack | Catalog Number | Qty/Pack. | List Price/Pack | Catalog Number | Qty/Pack. | List Price/Pack |
|  | | IDB5-BTW | 500 | $50 | IDG10/6-BTW | 360 | $60 | IDG10/6-BTW | 360 | $60 |
| | | | | | IDG10/5-BTW | 440 | $60 | IDG10/5-BTW | 440 | $60 |
| | | | | | IDB5-BTW | 500 | $50 | IDB5-BTW | 500 | $50 |
| | | | | | IDG6/5-BTW | 400 | $50 | IDG6/5-BTW | 400 | $50 |

*Note: (1) For assembly on PF4-BTW end bracket.*
*(2) Further information about identifiers on page 349.*
*(3) UL/CSA pending*

# Terminal Blocks

## BTWM

### Terminal Blocks w/ Spring Connections


*BTWM 2,5*


*BTWM 4*


*BTWM 6*

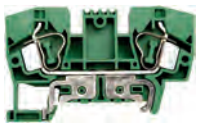

*BTWM 10*

### Ground terminal blocks


*BTWM 2,5T*


*BTWM 4T*


*BTWM 6T*


*BTWM 10T*

### Double terminal blocks


*BTWM 2F*


*BTWM 4-2F*

### Triple terminal blocks


*BTWM 2,5-3F*

### Terminal block for detectors


*BTWM 3S*

### Double terminal block + ground


*BTWM 2,5-2FT*

### Triple terminal block + ground

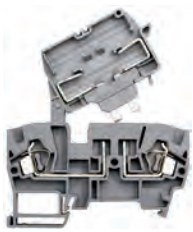

*BTWM 2,5-3FT*

### Disconnect terminal

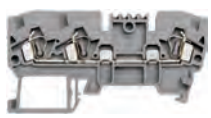

*BTWM 2, 5A*

### Terminal blocks for fuses


*BTWM S*
*pg.163*


*BTWM I*
*pg.163*

### 1in-2out terminal block


*BTWM 2E*
*pg.154*

### 2in-2out terminal block


*BTWM 2,5C*
*pg.164*

### Double earth terminal block


*BTWM 2,5CT*
*pg.164*



Data is subject to change without notice.

# Selection Guide

## Spring clamp terminals

| | | BTWM 2.5<br>5 mm width | | | BTWM 4<br>6 mm width | | | BTWM 6<br>8 mm width | | | BTWM 10<br>10 mm width | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Technical data | | Voltage / Current / Cross section | | | Voltage / Current / Cross section | | | Voltage / Current / Cross section | | | Voltage / Current / Cross section. | | |
| IEC 60947-7-1 | | 750 V~ / 24 A / 2.5 mm² | | | 750 V~ / 32 A / 4 mm² | | | 750 V~ / 41 A / 6 mm² | | | 750 V~ / 57 A / 10 mm² | | |
| Rated Surge Voltage | | 8kV | | | 8kV | | | 8kV | | | 8kV | | |
| Pollution degree | | 3 | | | 3 | | | 3 | | | 3 | | |
| UL / CSA | | 600 V~ / 20 A / AWG 22 ... 12 | | | 600 V~ / 26 A / AWG 22 ... 10 | | | 600 V~ / 35 A / AWG 22 ... 8 | | | 600 V~ / 55 A / AWG 20 ... 6 | | |
| Cable stripping | | 10 mm | | | 12 mm | | | 12 mm | | | 13 mm | | |
| Connection capacity | | Connection capacity | | | Connection capacity | | | Connection capacity | | | Connection capacity | | |
| Rigid wire | | 0.5 ... 4 mm² | | | 0.5 ... 6 mm² | | | 0.5 ... 10 mm² | | | 0.5 ... 16 mm² | | |
| Flexible cable | | 0.5 ... 2.5 mm² | | | 0.5 ... 4 mm² | | | 0.5 ... 6 mm² | | | 0.5 ... 10 mm² | | |
| AWG Conductor | | 22...12 | | | 22...10 | | | 22...8 | | | 20...6 | | |
| **Terminal Block** | **Color** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** |
| | Gray | BTWM 2.5 | 100 | $160 | BTWM 4 | 100 | $210 | BTWM 6 | 100 | $330 | BTWM 10 | 100 | $450 |
| | Blue | BTWM 2.5 (AZ) | 100 | $160 | BTWM 4 (AZ) | 100 | $210 | BTWM 6 (AZ) | 100 | $330 | BTWM 10 (AZ) | 100 | $450 |
| | Green | BTWM 2.5 (VD) | 100 | $160 | BTWM 4 (VD) | 100 | $210 | BTWM 6 (VD) | 100 | $330 | BTWM 10 (VD) | 100 | $450 |
| Accessories | | | | | | | | | | | | | |
| **End plate** | **Color** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** |
| 1.2 mm width | Gray | TF-BTWM 2.5 | 100 | $75 | TF-BTWM 4 | 100 | $75 | TF-BTWM 6 | 100 | $75 | TF-BTWM 10 | 100 | $75 |
| | Blue | TF-BTWM 2.5 (AZ) | 100 | $75 | TF-BTWM 4 (AZ) | 100 | $75 | TF-BTWM 6 (AZ) | 100 | $75 | TF-BTWM 10 (AZ) | 100 | $75 |
| | Green | TF-BTWM 2.5 (VD) | 100 | $75 | TF-BTWM 4 (VD) | 100 | $75 | TF-BTWM 6 (VD) | 100 | $75 | TF-BTWM 10 (VD) | 100 | $75 |
| **Connecting bridge** | **Nº. of poles** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** |
| | 2 | PC-BTWM 2.5/2 | 25 | $35 | PC-BTWM 4/2 | 25 | $35 | PC-BTWM 6/2 | 25 | $35 | PC-BTWM 10/2 | 25 | $35 |
| | 3 | PC-BTWM 2.5/3 | 20 | $46 | PC-BTWM 4/3 | 20 | $46 | PC-BTWM 6/3 | 20 | $46 | PC-BTWM 10/3 | 20 | $46 |
| | 4 | PC-BTWM 2.5/4 | 15 | $49.50 | PC-BTWM 4/4 | 15 | $49.50 | PC-BTWM 6/4 | 15 | $49.50 | PC-BTWM 10/4 | 15 | $49.50 |
| | 10 | PC-BTWM 2.5/10 | 5 | $41.50 | PC-BTWM 4/10 | 5 | $41.50 | PC-BTWM 6/10 | 5 | $41.50 | PC-BTWM 10/10 | 5 | $41.50 |
| **End bracket** | **Color** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** |
| 8 mm width | Gray | PF3-BTW | 100 | $120 | PF3-BTW | 100 | $120 | PF3-BTW | 100 | $120 | PF3-BTW | 100 | $120 |
| | Gray | PF4-BTW | 100 | $120 | PF4-BTW | 100 | $120 | PF4-BTW | 100 | $120 | PF4-BTW | 100 | $120 |
| **Rail / Support** | **Type** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** |
| Din EN 50022 | Flat | MR 35x7.5 | 2 m busbars | $14 | MR 35x7.5 | 2 m busbars | $14 | MR 35x7.5 | 2 m busbars | $14 | MR 35x7.5 | 2 m busbars | $14 |
| | Support | ST-BTW | 25 | $75 | ST-BTW | 25 | $75 | ST-BTW | 25 | $75 | ST-BTW | 25 | $75 |
| **Group identifier** | **Assembly** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** |
| | Din Rail | IG-BTW | 50 | $75 | IG-BTW | 50 | $75 | IG-BTW | 50 | $75 | IG-BTW | 50 | $75 |
| | End Bracket | IG22-BTW (1) | 25 | $37.50 | IG22-BTW (1) | 25 | $37.50 | IG22-BTW (1) | 25 | $37.50 | IG22-BTW (1) | 25 | $37.50 |
| **Identifier(2)** | | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** |
| | | IDG10/5-BTW | 440 | $60 | IDG10/6-BTW | 360 | $60 | IDG10/6-BTW | 360 | $60 | IDG10/6-BTW | 360 | $60 |
| | | IDB5-BTW | 500 | $50 | IDG10/5-BTW | 440 | $60 | IDG10/5-BTW | 440 | $60 | IDG10/5-BTW | 440 | $60 |
| | | IDG6/5-BTW | 400 | $50 | IDB5-BTW | 500 | $50 | IDB5-BTW | 500 | $50 | IDB5-BTW | 500 | $50 |
| | | | | | IDG6/5-BTW | 400 | $50 | IDG6/5-BTW | 400 | $50 | IDG6/5-BTW | 400 | $50 |

*Note:*
*(1) For assembly on PF4-BTW end bracket.*
*2) Further information about identifiers on page 349.*

# Terminal Blocks

## BTWM

### Ground terminal blocks spring type

| | | BTWM 2.5T<br>5 mm width | | | BTWM 4T<br>6 mm width | | | BTWM 6T<br>8 mm width | | | BTWM 10T<br>10 mm width | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Technical data | | Cross section | | | Cross section | | | Cross section | | | Cross section | | |
| IEC 60947-7-1 | | 2.5 mm² | | | 4 mm² | | | 6 mm² | | | 10 mm² | | |
| UL / CSA | | AWG 22 ... 12 | | | AWG 22 ... 10 | | | AWG 22 ... 8 | | | AWG 20 ... 6 | | |
| Rated Surge Voltage | | 8kV | | | 8kV | | | 8kV | | | 8kV | | |
| Pollution degree | | 3 | | | 3 | | | 3 | | | 3 | | |
| Cable stripping | | 10 mm | | | 12 mm | | | 12 mm | | | 13 mm | | |
| Connection capacity | | Connection capacity | | | Connection capacity | | | Connection capacity | | | Connection capacity | | |
| Rigid wire | | 0.5 ... 4 mm² | | | 0.5 ... 6 mm² | | | 0.5 ... 10 mm² | | | 0.5 ... 16 mm² | | |
| Flexible cable | | 0.5 ... 2.5 mm² | | | 0.5 ... 4 mm² | | | 0.5 ... 6 mm² | | | 0.5 ... 10 mm² | | |
| AWG Condutor | | 22 ... 12 | | | 22 ... 10 | | | 22 ... 8 | | | 20 ... 6 | | |
| **Terminal Block** | **Color** | **Catalog Number** | **Qty/Pack.** | **List Price/ Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/ Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/ Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/ Pack** |
| | Green | **BTWM 2.5T** | 50 | $300 | **BTWM 4T** | 50 | $300 | **BTWM 6T** | 40 | $240 | **BTWM 10T** | 30 | $285 |
| Accessories | | | | | | | | | | | | | |
| **End plate** | **Color** | **Catalog Number** | **Qty/Pack.** | **List Price/ Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/ Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/ Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/ Pack** |
| 1.2 mm width  | Green | **TF-BTWM 2.5 (VD)** | 10 | $7.50 | **TF-BTWM 4 (VD)** | 10 | $7.50 | **TF-BTWM 6 (VD)** | 10 | $7.50 | **TF-BTWM 10 (VD)** | 10 | $7.50 |
| **End bracket** | **Color** | **Catalog Number** | **Qty/Pack.** | **List Price/ Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/ Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/ Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/ Pack** |
| 8 mm width  | Gray | **PF3-BTW** | 100 | $120 | **PF3-BTW** | 100 | $120 | **PF3-BTW** | 100 | $120 | **PF3-BTW** | 100 | $120 |
| | Gray | **PF4-BTW** | 100 | $120 | **PF4-BTW** | 100 | $120 | **PF4-BTW** | 100 | $120 | **PF4-BTW** | 100 | $120 |
| **Din Rail / Support** | **Type** | **Catalog Number** | **Qty/Pack.** | **List Price/ Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/ Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/ Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/ Pack** |
| DIN EN 50022  | Flat | **MR 35x7.5** | 2 m busbars | $14 | **MR 35x7.5** | 2 m busbars | $14 | **MR 35x7.5** | 2 m busbars | $14 | **MR 35x7.5** | 2 m busbars | $14 |
| | Support | **ST-BTW** | 25 | $75 | **ST-BTW** | 25 | $75 | **ST-BTW** | 25 | $75 | **ST-BTW** | 25 | $75 |
| **Group identifier** | **Assembly** | **Catalog Number** | **Qty/Pack.** | **List Price/ Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/ Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/ Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/ Pack** |
|  | Din Rail | **IG-BTW** | 50 | $75 | **IG-BTW** | 50 | $75 | **IG-BTW** | 50 | $75 | **IG-BTW** | 50 | $75 |
| | End Bracket | **IG22-BTW** (1) | 25 | $37.50 | **IG22-BTW** (1) | 25 | $37.50 | **IG22-BTW** (1) | 25 | $37.50 | **IG22-BTW** (1) | 25 | $37.50 |
| **Identifier** (2) | | **Catalog Number** | **Qty/Pack.** | **List Price/ Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/ Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/ Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/ Pack** |
|  | | **IDG10/5-BTW** | 440 | $60 | **IDG10/6-BTW** | 360 | $60 | **IDG10/6-BTW** | 360 | $60 | **IDG10/6-BTW** | 360 | $60 |
| | | **IDB5-BTW** | 500 | $50 | **IDG10/5-BTW** | 440 | $60 | **IDG10/5-BTW** | 440 | $60 | **IDG10/5-BTW** | 440 | $60 |
| | | **IDG6/5-BTW** | 400 | $50 | **IDB5-BTW** | 500 | $50 | **IDB5-BTW** | 500 | $50 | **IDB5-BTW** | 500 | $50 |
| | | | | | **IDG6/5-BTW** | 400 | $50 | **IDG6/5-BTW** | 400 | $50 | **IDG6/5-BTW** | 400 | $50 |

*Note:*
*(1) For assembly on PF4-BTW end bracket.*
*(2) Further information about identifiers on page 349.*



Data is subject to change without notice.

## BTWM Series - Double terminal blocks - Triple terminal blocks spring type

| | | Double Terminal Blocks | | | | | | Triple Terminal Blocks | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | **BTWM 2.5-2F**<br>5 mm width | | | **BTWM 4-2F**<br>6 mm width | | | **BTWM 2.5-3F**<br>5 mm width | | |
| Technical data | | Voltage / Current / Cross section | | | Voltage / Current / Cross section | | | Voltage / Current / Cross section | | |
| IEC 60947-7-1 | | 500 V~ / 24 A / 2.5 mm² | | | 750 V~ / 30 A / 4 mm² | | | 500 V~ / 24 A / 2.5 mm² | | |
| Rated Surge Voltage | | 8kV | | | 8kV | | | 8kV | | |
| Pollution degree | | 3 | | | 3 | | | 3 | | |
| UL / CSA | | 600 V~ / 20 A / AWG 22 ... 12 | | | 600 V~ / 26 A / AWG 22 ... 10 | | | 600 V~ / 20 A / AWG 22 ... 12 | | |
| Cable stripping | | 10 mm | | | 12 mm | | | 10 mm | | |
| Connection capacity | | Connection capacity | | | Connection capacity | | | Connection capacity | | |
| Rigid wire | | 0.5 ... 4 mm² | | | 0.5 ... 6 mm² | | | 0.5 ... 4 mm² | | |
| Flexible cable | | 0.5 ... 2.5 mm² | | | 0.5 ... 4 mm² | | | 0.5 ... 2.5 mm² | | |
| AWG Conductor | | 22 ... 12 | | | 22 ... 10 | | | 22 ... 12 | | |
| **Terminal Block** | **Color** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** |
| | Gray | **BTWM 2.5-2F** | 50 | $225 | **BTWM 4-2F** | 50 | $300 | **BTWM 2.5-3F** | 20 | $160 |
| Accessories | | | | | | | | | | |
| **End plate** | **Color** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** |
| 1.5 mm width | Gray | **TF-BTWM 2.5-2F** | 50 | $65 | **TF-BTWM 4-2F** | 25 | $32.50 | **TF-BTWM 2.5-3F** | 10 | $13 |
| **Connecting bridge** | **Nº. of poles** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** |
| | 2 | **PC-BTWM 2.5/2** | 25 | $35 | **PC-BTWM 4/2** | 25 | $35 | **PC-BTWM 2.5/2** | 25 | $35 |
| | 3 | **PC-BTWM 2.5/3** | 20 | $46 | **PC-BTWM 4/3** | 20 | $46 | **PC-BTWM 2.5/3** | 20 | $46 |
| | 4 | **PC-BTWM 2.5/4** | 15 | $49.50 | **PC-BTWM 4/4** | 15 | $49.50 | **PC-BTWM 2.5/4** | 15 | $49.50 |
| | 10 | **PC-BTWM 2.5/10** | 5 | $41.50 | **PC-BTWM 4/10** | 5 | $41.50 | **PC-BTWM 2.5/10** | 5 | $41.50 |
| **End bracket** | **Color** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** |
| 8 mm width | Gray | **PF3-BTW** | 100 | $120 | **PF3-BTW** | 100 | $120 | **PF3-BTW** | 100 | $120 |
| | Gray | **PF4-BTW** | 100 | $120 | **PF4-BTW** | 100 | $120 | **PF4-BTW** | 100 | $120 |
| **Rail / Support** | **Type** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** |
| Din EN 50022 | Flat | **MR 35x7.5** | 2 m busbars | $14 | **MR 35x7.5** | 2 m busbars | $14 | **MR 35x7.5** | 2 m busbars | $14 |
| | Support | **ST-BTW** | 25 | $75 | **ST-BTW** | 25 | $75 | **ST-BTW** | 25 | $75 |
| **Identifier group** | **Assembly** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** |
| | Din Rail | **IG-BTW** | 50 | $75 | **IG-BTW** | 50 | $75 | **IG-BTW** | 50 | $75 |
| | End Bracket | **IG22-BTW** (1) | 25 | $37.50 | **IG22-BTW** (1) | 25 | $37.50 | **IG22-BTW** (1) | 25 | $37.50 |
| **Identifier** (2) | | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** |
| | | **IDB5-BTW** | 500 | $50 | **IDG10/6-BTW** | 360 | $60 | **IDB5-BTW** | 500 | $50 |
| | | | | | **IDG10/5-BTW** | 440 | $60 | | | |
| | | | | | **IDB5-BTW** | 500 | $50 | | | |
| | | | | | **IDG6/5-BTW** | 400 | $50 | | | |

*Note:*
*(1) For assembly on PF4-BTW end bracket.*
*(2) Further information about identifiers on page 349.*

# Terminal Blocks

## BTWM

### BTWM Series - Double and Triple terminal block + ground spring type
### BTWM Series - Terminal block for detectors spring type

| | | Double Terminal Block + ground | | | Triple Terminal Block + ground | | | Terminal block for detectors | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | **BTWM 2.5-2FT**<br>5 mm width | | | BTWM 2.5-3FT<br>5 mm width | | | BTWM 3S<br>5 mm width | | |
| Technical data | | Voltage / Current / Cross section | | | Voltage / Current / Cross section | | | Voltage / Current / Cross section | | |
| IEC 60947-7-1 | | 500 V~ / 24 A / 2.5 mm² | | | 500 V~ / 24 A / 2.5 mm² | | | 500 V~ / 24 A / 2.5 mm² | | |
| Rated Surge Voltage | | 8kV | | | 8kV | | | 8kV | | |
| Pollution degree | | 3 | | | 3 | | | 3 | | |
| UL / CSA | | 600 V~ / 20 A / AWG 22 ... 12 | | | 600 V~ / 20 A / AWG 22 ... 12 | | | [3] | | |
| Cable stripping | | 10 mm | | | 10 mm | | | 10 mm | | |
| Connection capacity | | Connection capacity | | | Connection capacity | | | Connection capacity | | |
| Rigid wire | | 0.5 ... 4 mm² | | | 0.5 ... 4 mm² | | | 0.5 ... 4 mm² | | |
| Flexible cable | | 0.5 ... 2.5 mm² | | | 0.5 ... 2.5 mm² | | | 0.5 ... 2.5 mm² | | |
| AWG Conductor | | 22 ... 12 | | | 22 ... 12 | | | 22 ... 12 | | |
| **Terminal Block** | **Color** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** |
| | Gray | **BTWM 2.5-2FT** | 20 | $210 | **BTWM 2.5-3FT** | 20 | $260 | **BTWM 3S** | 20 | $100 |
| Accessories | | | | | | | | | | |
| **End plate** | **Color** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** |
| 1.5 mm width  | Gray | **TF-BTWM 2.5-2FT** | 10 | $13 | **TF-BTWM 2.5-3FT** | 10 | $13 | **TF-BTWM 3S** | 10 | $13 |
| Connecting bridge | N°. of poles | Catalog Number | Qty/Pack. | List Price/Pack | Catalog Number | Qty/Pack. | List Price/Pack | Catalog Number | Qty/Pack. | List Price/Pack |
|  | 2 | **PC-BTWM 2.5/2** | 25 | $35 | - | | | **PC-BTWM 2.5/2** | 25 | $35 |
| | 3 | **PC-BTWM 2.5/3** | 20 | $46 | - | | | **PC-BTWM 2.5/3** | 20 | $46 |
| | 4 | **PC-BTWM 2.5/4** | 15 | $49.50 | - | | | **PC-BTWM 2.5/4** | 15 | $49.50 |
| | 10 | **PC-BTWM 2.5/10** | 5 | $41.50 | - | | | **PC-BTWM 2.5/10** | 5 | $41.50 |
| **End bracket** | Color | Catalog Number | Qty/Pack. | List Price/Pack | Catalog Number | Qty/Pack. | List Price/Pack | Catalog Number | Qty/Pack. | List Price/Pack |
| 8 mm width  | Gray | **PF3-BTW** | 100 | $120 | **PF3-BTW** | 100 | $120 | **PF3-BTW** | 100 | $120 |
| | Gray | **PF4-BTW** | 100 | $120 | **PF4-BTW** | 100 | $120 | **PF4-BTW** | 100 | $120 |
| **Din rail / Support** | Type | Catalog Number | Qty/Pack. | List Price/Pack | Catalog Number | Qty/Pack. | List Price/Pack | Catalog Number | Qty/Pack. | List Price/Pack |
| DIN EN 50022  | Flat | **MR 35x7.5** | 2 m busbars | $14 | **MR 35x7.5** | 2 m busbars | $14 | **MR 35x7.5** | 2 m busbars | $14 |
| | Support | **ST-BTW** | 25 | $75 | **ST-BTW** | 25 | $75 | **ST-BTW** | 25 | $75 |
| **Group identifier** | Assembly | Catalog Number | Qty/Pack. | List Price/Pack | Catalog Number | Qty/Pack. | List Price/Pack | Catalog Number | Qty/Pack. | List Price/Pack |
|  | Din Rail | **IG-BTW** | 50 | $75 | **IG-BTW** | 50 | $75 | **IG-BTW** | 50 | $75 |
| | End Bracket | **IG22-BTW** [1] | 25 | $37.50 | **IG22-BTW** [1] | 25 | $37.50 | **IG22-BTW** [1] | 25 | $37.50 |
| **Identifier** [2] | | Catalog Number | Qty/Pack. | List Price/Pack | Catalog Number | Qty/Pack. | List Price/Pack | Catalog Number | Qty/Pack. | List Price/Pack |
|  | | **IDB5-BTW** | 500 | $50 | **IDB5-BTW** | 500 | $50 | **IDB5-BTW** | 500 | $50 |

*Note:*
*(1) For assembly on PF4-BTW end bracket*
*(2) Further details about identifiers on page 349.*
*(3) UL/CSA pending*



Data is subject to change without notice.

## Disconnect terminals spring type
## Terminal blocks for fuses spring type

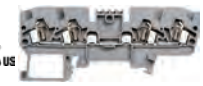
| | | Disconnect Terminal | | | Terminal Block for fuses | | | Terminal blocks for fuses | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | **BTWM 2.5A**<br>5 mm width | | | **BTWM S**<br>8 mm width | | | **BTWM I**<br>8 mm width | | |
| Technical data | | Voltage / Current / Cross section | | | Voltage / Current / Cross section | | | Voltage / Current /Cross section | | |
| IEC 60947-7-1 | | 750 V~ / 16 A / 2.5 mm² | | | 500 V~ / 10 A / 4 mm² | | | 500 V~ / 10 A / 4 mm² | | |
| UL / CSA | | 600 V~ / 10 A / AWG 22 ... 12 | | | 600 V~ / 10 A / AWG 22 ... 10 | | | 600 V~ / 10 A / AWG 22 ... 10 | | |
| Rated Surge Voltage | | 8kV | | | 8kV | | | 8kV | | |
| Pollution degree | | 3 | | | 3 | | | 3 | | |
| Fuse dimensions | | - | | | 5x20 or 5x25 mm | | | 6.35x31.75 mm (1/4"x1 1/4") | | |
| Cable stripping | | 10 mm | | | 12 mm | | | 12 mm | | |
| Connection capacity | | Connection capacity | | | Connection capacity | | | Connection capacity | | |
| Rigid wire | | 0.5 ... 4 mm² | | | 0.5 ... 6 mm² | | | 0.5 ... 6 mm² | | |
| Flexible cable | | 0.5 ... 2.5 mm² | | | 0.5 ... 4 mm² | | | 0.5 ... 4 mm² | | |
| AWG Conductor | | 22 ... 12 | | | 22 ... 10 | | | 22 ... 10 | | |
| **Terminal Block** | **Color** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** |
| | Gray | **BTWM 2.5A** | 50 | $350 | **BTWM S** | 20 | $210 | **BTWM I** | 20 | $210 |
| | | | | | Note!<br>Reserve fuse housed in disconnect lever. | | | Note!<br>Reserve fuse housed in disconnect lever. | | |
| Accessories | | | | | | | | | | |
| **End plate** | **Color** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** |
| 1.5 mm width  | Gray | **TF-BTWM 2.5A** | 10 | $13 | **TF-BTWM S-I** | 10 | $13 | **TF-BTWM S-I** | 10 | $13 |
| **Connecting bridge** | **Nº. of Poles** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** |
|  | 2 | **PC-BTWM 2.5/2** | 25 | $35 | **PC-BTWM 6/2** | 25 | $35 | **PC-BTWM 6/2** | 25 | $35 |
| | 3 | **PC-BTWM 2.5/3** | 20 | $46 | **PC-BTWM 6/3** | 20 | $46 | **PC-BTWM 6/3** | 20 | $46 |
| | 4 | **PC-BTWM 2.5/4** | 15 | $49.50 | **PC-BTWM 6/4** | 15 | $49.50 | **PC-BTWM 6/4** | 15 | $49.50 |
| | 10 | **PC-BTWM 2.5/10** | 5 | $41.50 | **PC-BTWM 6/10** | 5 | $41.50 | **PC-BTWM 6/10** | 5 | $41.50 |
| **End bracket** | **Color** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** |
| 8 mm width  | Gray | **PF3-BTW** | 100 | $120 | **PF3-BTW** | 100 | $120 | **PF3-BTW** | 100 | $120 |
| | Gray | **PF4-BTW** | 100 | $120 | **PF4-BTW** | 100 | $120 | **PF4-BTW** | 100 | $120 |
| **Din rail / Suppoty** | **Type** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** |
| DIN EN 50022  | Flat | **MR 35x7.5** | 2 m busbars | $14 | **MR 35x7.5** | 2 m busbars | $14 | **MR 35x7.5** | 2 m busbars | $14 |
| | Support | **ST-BTW** | 25 | $75 | **ST-BTW** | 25 | $75 | **ST-BTW** | 25 | $75 |
| **Group identifier** | **Assembly** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** |
|  | Din Rail | **IG-BTW** | 50 | $75 | **IG-BTW** | 50 | $75 | **IG-BTW** | 50 | $75 |
| | End Bracket | **IG22-BTW** (1) | 25 | $37.50 | **IG22-BTW** (1) | 25 | $37.50 | **IG22-BTW** (1) | 25 | $37.50 |
| **Identifier** (2) | | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** |
|  | | **IDG10/5-BTW** | 440 | $60 | **IDB5-BTW** | 500 | $50 | **IDB5-BTW** | 500 | $50 |
| | | **IDB5-BTW** | 500 | $50 | | | | | | |
| | | **IDG6/5-BTW** | 400 | $50 | | | | | | |

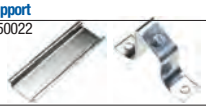
*Note:*
*(1) For assembly on PF4-BTW end bracket.*
*(2) Further information about identifiers on page 349.*

# Terminal Blocks

## BTWM

### 1IN-2OUT and 2IN-2OUT Terminal block - spring type
### Double ground terminal block - spring type

| | 1IN-2OUT Terminal block | 2IN-2OUT Terminal block | Double ground terminal block |
|---|---|---|---|
| | BTWM 2.5E<br>5 mm width  | BTWM 2.5C<br>5 mm width  | BTWM 2.5CT<br>5 mm width  |
| Technical data | Voltage / Current / Cross section | Voltage / Current / Cross section | Cross section |
| IEC 60947-7-1 | 750 V~ / 24 A / 2.5 mm² | 750 V~ / 24 A / 2.5 mm² | 2.5 mm² |
| UL / CSA | 600 V~ / 20 A / AWG 22 ... 12 | 600 V~ / 20 A / AWG 22 ... 12 | AWG 22 ... 12 |
| Rated Surge Voltage | 8kV | 8kV | 8kV |
| Pollution degree | 3 | 3 | 3 |
| Cable stripping | 13 mm | 13 mm | 13 mm |
| Connection capacity | Connection capacity | Connection capacity | Connection capacity |
| Rigid wire | 0.5 ... 4 mm² | 0.5 ... 4 mm² | 0.5 ... 4 mm² |
| Flexible cable | 0.5 ... 2.5 mm² | 0.5 ... 2.5 mm² | 0.5 ... 2.5 mm² |
| AWG Conductor | 22 ... 12 | 22 ... 12 | 22 ... 12 |

| Terminal Block | Color | Catalog Number | Qty/Pack. | List Price/ Pack | Catalog Number | Qty/Pack. | List Price/ Pack | Catalog Number | Qty/Pack. | List Price/Pack |
|---|---|---|---|---|---|---|---|---|---|---|
| | Gray | BTWM 2.5E | 50 | $250 | BTWM 2.5C | 50 | $250 | | | - |
| | Green | - | | | - | | | BTWM 2.5CT | 50 | $400 |
| Accessories | | | | | | | | | | |
| **End plate** | **Color** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** |
| 1.2 mm width  | Gray | TF-BTWM 2.5E | 10 | $13 | TF-BTWM 2.5C | 10 | $13 | - | | |
| | Green | - | | | - | | | TF-BTWM 2.5CT | 10 | 13 |
| **Connecting bridge** | **Nº. of Poles** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/ Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** |
|  | 2 | PC-BTWM 2.5/2 | 25 | $35 | PC-BTWM 2.5/2 | 25 | $35 | - | | |
| | 3 | PC-BTWM 2.5/3 | 20 | $46 | PC-BTWM 2.5/3 | 20 | $46 | - | | |
| | 4 | PC-BTWM 2.5/4 | 15 | $49.50 | PC-BTWM 2.5/4 | 15 | $49.50 | - | | |
| | 10 | PC-BTWM 2.5/10 | 5 | $41.50 | PC-BTWM 2.5/10 | 5 | $41.50 | - | | |
| **End bracket** | **Color** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/ Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** |
| 8 mm width  | Gray | PF3-BTW | 100 | $120 | PF3-BTW | 100 | $120 | PF3-BTW | 100 | $120 |
| | Gray | PF4-BTW | 100 | $120 | PF4-BTW | 100 | $120 | PF4-BTW | 100 | $120 |
| **Rail / Support** | **Type** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** |
| DIN EN 50022  | Flat | MR 35x7.5 | 2 m busbars | $14 | MR 35x7.5 | 2 m busbars | $14 | MR 35x7.5 | 2 m busbars | $14 |
| | Support | ST-BTW | 25 | $75 | ST-BTW | 25 | $75 | ST-BTW | 25 | $75 |
| **Group identifier** | **Assembly** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** |
|  | Din Rail | IG-BTW | 50 | $75 | IG-BTW | 50 | $75 | IG-BTW | 50 | $75 |
| | End Bracket | IG22-BTW (1) | 25 | $37.50 | IG22-BTW (1) | 25 | $37.50 | IG22-BTW (1) | 25 | $37.50 |
| **Identifier (2)** | | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/ Pack** | **Catalog Number** | **Qty/Pack.** | **List Price/Pack** |
|  | | IDG10/5-BTW | 440 | $60 | IDG10/5-BTW | 440 | $60 | IDG10/5-BTW | 440 | $60 |
| | | IDB5-BTW | 500 | $50 | IDB5-BTW | 500 | $50 | IDB5-BTW | 500 | $50 |
| | | IDG6/5-BTW | 400 | $50 | IDG6/5-BTW | 400 | $50 | IDG6/5-BTW | 400 | $50 |

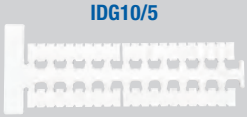
*Note:*
*(1) For assembly on PF4-BTW end bracket.*
*(2) Further information about identifiers on page 349.*



Data is subject to change without notice.

## Selection Guide

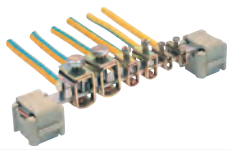
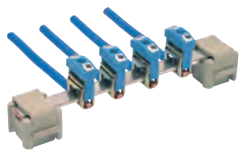
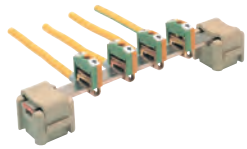
Identifiers are supplied in specific packaging and quantity for each type.
Markings shown below are standards and stockable. For any custom markings, please consult WEG.

| Identifiers | IDG5 | | | IDG6/5 | | | IDG10/5 | | | IDG10/6 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| |  | | |  | | |  | | |  | | |
| Technical data | Technical data | | | Technical data | | | Technical data | | | Technical data | | |
| Identifier dimensions | 5 x 5 mm | | | 6 x 5 mm | | | 10 x 5 mm | | | 10 x 6 mm | | |
| Identifier color | White | | | White | | | White | | | White | | |
| Marking color | Black | | | Black | | | Black | | | Black | | |
| Number of pieces (tags) per identifier | 50 | | | 40 | | | 44 | | | 36 | | |
| **Marking** | **Catalog Number** | **Ident./ Pack** | **List Price/ Pack.** | **Catalog Number** | **Ident./ Pack** | **List Price/ Pack.** | **Catalog Number** | **Ident./ Pack** | **List Price/ Pack.** | **Catalog Number** | **Ident./ Pack** | **List Price/Pack.** |
| Without marking | IDB5-BTW | 500 | $50 | IDG6/5-BTW | 400 | $50 | IDG10/5T-BTW | 440 | $60 | IDG10/6T-BTW | 360 | $60 |
| 0 | IDB5-BTWH-0 | 50 | $5 | IDG6/5-BTWH-0 | 40 | $5 | IDG10/5T-BTWH-0 | 44 | $6 | IDG10/6-BTW (0) | 36 | $6 |
| 1 | IDB5-BTWH-1 | 50 | $5 | IDG6/5-BTWH-1 | 40 | $5 | IDG10/5T-BTWH-1 | 44 | $6 | IDG10/6-BTW (1) | 36 | $6 |
| 2 | IDB5-BTWH-2 | 50 | $5 | IDG6/5-BTWH-2 | 40 | $5 | IDG10/5T-BTWH-2 | 44 | $6 | IDG10/6-BTW (2) | 36 | $6 |
| 3 | IDB5-BTWH-3 | 50 | $5 | IDG6/5-BTWH-3 | 40 | $5 | IDG10/5T-BTWH-3 | 44 | $6 | IDG10/6-BTW (3) | 36 | $6 |
| 4 | IDB5-BTWH-4 | 50 | $5 | IDG6/5-BTWH-4 | 40 | $5 | IDG10/5T-BTWH-4 | 44 | $6 | IDG10/6-BTW (4) | 36 | $6 |
| 5 | IDB5-BTWH-5 | 50 | $5 | IDG6/5-BTWH-5 | 40 | $5 | IDG10/5T-BTWH-5 | 44 | $6 | IDG10/6-BTW (5) | 36 | $6 |
| 6 | IDB5-BTWH-6 | 50 | $5 | IDG6/5-BTWH-6 | 40 | $5 | IDG10/5T-BTWH-6 | 44 | $6 | IDG10/6-BTW (6) | 36 | $6 |
| 7 | IDB5-BTWH-7 | 50 | $5 | IDG6/5-BTWH-7 | 40 | $5 | IDG10/5T-BTWH-7 | 44 | $6 | IDG10/6-BTW (7) | 36 | $6 |
| 8 | IDB5-BTWH-8 | 50 | $5 | IDG6/5-BTWH-8 | 40 | $5 | IDG10/5T-BTWH-8 | 44 | $6 | IDG10/6-BTW (8) | 36 | $6 |
| 9 | IDB5-BTWH-9 | 50 | $5 | IDG6/5-BTWH-9 | 40 | $5 | IDG10/5T-BTWH-9 | 44 | $6 | IDG10/6-BTW (9) | 36 | $6 |
| 10 | IDB5-BT-WH-10 | 50 | $5 | IDG6/5-BTWH-10 | 40 | $5 | IDG10/5T-BT-WH-10 | 44 | $6 | IDG10/6-BTW (10) | 36 | $6 |
| 1, 2, 3 ... 8, 9, 10 | IDB5-BT-WH-1-10 | 1 | $5 | IDG6/5-BTWH-1-10 | 40 | $5 | | | | | | |
| 11, 12, 13 ... 18, 19, 20 | IDB5-BT-WH-11-20 | 1 | $5 | IDG6/5-BTWH-11-20 | 40 | $5 | | | | | | |
| 21, 22, 23 ... 28, 29, 30 | IDB5-BT-WH-21-30 | 1 | $5 | IDG6/5-BTWH-21-30 | 40 | $5 | | | | | | |
| 31, 32, 33 ... 38, 39, 40 | IDB5-BT-WH-31-40 | 1 | $5 | IDG6/5-BTWH-31-40 | 40 | $5 | | | | | | |
| 41, 42, 43 ... 48, 49, 50 | IDB5-BT-WH-41-50 | 1 | $5 | IDG6/5-BTWH-41-50 | 40 | $5 | | | | | | |
| 1, 2, 3 ... 20, 21, 22 | | | | | | | IDG10/5-BTWH-1-22 | 44 | $6 | | | |
| 23, 24, 25 ... 42, 43, 44 | | | | | | | IDG10/5-BTWH-23-44 | 44 | $6 | | | |
| 1, 2, 3 ... 16, 17, 18 | | | | | | | | | | IDG10/6-BT-WH-1-18 | 36 | $6 |
| 19, 20, 21 ... 34, 35, 36 | | | | | | | | | | IDG10/6-BT-WH-19-36 | 36 | $6 |
| 1, 2, 3 ... 48, 49, 50 | IDB5-BT-WH-1-50 | | $5 | | | | | | | | | |
| 51, 52, 53 ... 98, 99, 100 | IDB5-BT-WH-51-100 | 1 | $5 | | | | | | | | | |
| 1, 2, 3 ... 38, 39, 40 | | | | IDG6/5-BTWH-1-40 | 50 | $5 | | | | | | |
| 41, 42, 43 ... 78, 79, 80 | | | | IDG6/5-BTWH-41-80 | 50 | $5 | | | | | | |
| 81, 82, 83 ... 118, 119, 120 | | | | IDG6/5-BTWH-80-120 | 50 | $5 | | | | | | |
| 1, 2, 3 ... 42, 43, 44 | | | | | | | IDG10/5-BTWH-1-44 | 1 | $6 | | | |
| 45, 46, 47 ... 86, 87, 88 | | | | | | | IDG10/5-BTWH-45-88 | 1 | $6 | | | |
| 89, 90, 91 ... 130, 131, 132 | | | | | | | IDG10/5-BT-WH-89-132 | 1 | $6 | | | |
| 1, 2, 3 ... 34, 35, 36 | | | | | | | | | | IDG10/6-BTWH-1-36 | 1 | $6 |
| 37, 38, 39 ... 70, 71, 72 | | | | | | | | | | IDG10/6-BTWH-37-72 | 1 | $6 |
| 73, 74, 75 ... 106, 107, 108 | | | | | | | | | | IDG10/6-BTW-73-108 | 1 | $6 |

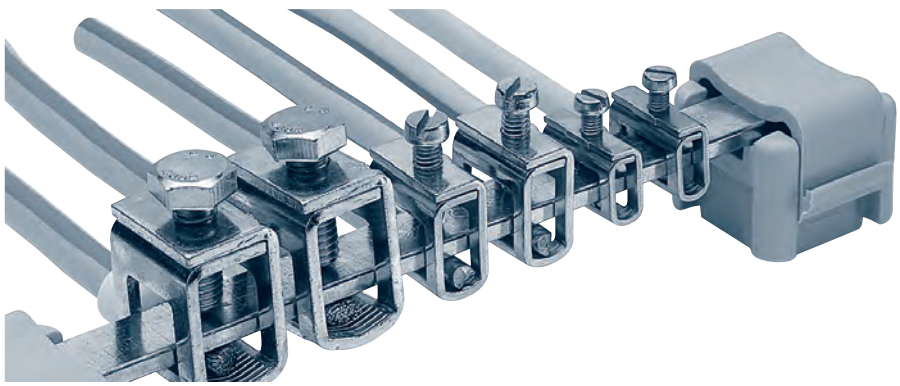
# Terminal Blocks

## BTWM

### Busbar Connectors

| CB Series Busbar connectors | | CB4 | | | CB10 | | | CB35 | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | |  | | | | | | | | |
| Technical data | | Technical data | | | Technical data | | | Technical data | | |
| Cross section | | 4 mm² | | | 10 mm² | | | 35 mm² | | |
| Screw | | M3 | | | M4 | | | M6 | | |
| Busbar dimensions | | 10 x 3 mm | | | 10 x 3 mm | | | 10 x 3 mm | | |
| Cable stripping | | 16 mm | | | 19 mm | | | 19 mm | | |
| Tightening torque | | 0.5 Nm / 4.42 lb - in | | | 1.2 Nm / 10.62 lb - in | | | 2.8 Nm / 24.78 lb - in | | |
| Connection capacity | | Connection capacity | | | Connection capacity | | | Connection capacity | | |
| Rigid wire | | 0.5 ... 6 mm² | | | 1.5 ... 10 mm² | | | 16 ... 50 mm² | | |
| Flexible cable | | 0.5 ... 4 mm² | | | 2.5 ... 10 mm² | | | 16 ... 35 mm² | | |
| **Terminal Block** | **Color** | **Catalog Number** | **Qty/Pack.** | **List Price** | **Catalog Number** | **Qty/Pack.** | **List Price** | **Catalog Number** | **Qty/Pack.** | **List Price** |
| | - | **CB4-BTW** | 200 | $200 | **CB10-BTW** | 100 | $150 | **CB35-BTW** | 50 | $150 |
| | Blue | **CB4N-BTW** | 100 | $100 | **CB10N-BTW** | 100 | $150 | **CB35N-BTW** | 50 | $150 |
| | Gr/Ye | **CB4PE-BTW** | 100 | $100 | **CB10PE-BTW** | 100 | $150 | **CB35PE-BTW** | 50 | $150 |
| Accessories | | | | | | | | | | |
| Busbar support | Color | Catalog Number | Qty/Pack. | List Price | Catalog Number | Qty/Pack. | List Price | Catalog Number | Qty/Pack. | List Price |
|  | Beige | SB-BTW (1) | 50 | $50 | **SB-BTW (1)** | 50 | $50 | **SB-BTW (1)** | 50 | $50 |
| **Copper busbar 10 x 3 mm** | | **Catalog Number** | **Qty/Pack.** | **List Price** | **Catalog Number** | **Qty/Pack.** | **List Price** | **Catalog Number** | **Qty/Pack.** | **List Price** |
| Tin plated | | **BR10x3** | 1in (3ft length) | $200 | **BR10x3** | 1in (3ft length) | $200 | **BR10x3** | 1in (3ft length) | $200 |
| Note (2) | |  | | |  | | |  | | |
| **Identifier (1)** | | **Catalog Number** | **Qty/Pack.** | **List Price** | **Catalog Number** | **Qty/Pack.** | **List Price** | **Catalog Number** | **Qty/Pack.** | **List Price** |
|  | | **IDB5-BTW** | 50 | $50 | **IDB5-BTW** | 50 | $50 | **IDB5-BTW** | 50 | $50 |

*Note:*
*(1) Further details on the identifiers on page 349.*
*2) Also fits busbars of: 15x2 mm, 15x3 mm, 12x2 mm e 6x6 mm.*
*(3) Pictures for illustration purposes only.*





Data is subject to change without notice.

# Power Factor Correction

## Product Groups

UCWT series – Three Phase Capacitor Unit

BCWT series – Bank of three phase capacitors with or without fuse protection, in NEMA 4 enclosure

CWMC series – Contactors for Capacitor Switching



WEG power factor correction capacitors were designed using self-healing metallized polypropylene film, have security protection against internal over pressure and the dielectric losses are less than 0.2 W/kVAr. The growing demand for electricity has required large investments in power generation to meet the rate of global development, both in developing countries where the population has gained greater access to consumer goods, and in developed countries, where energy efficiency has been object concern in order to reduce high investments in power generation. These investments, however, besides being planned in the medium and long term, involve the use of increasingly scarce natural resources which are subject to environmental pressures. In short term, the best way to increase the supply of electricity has been reducing waste and increasing energy efficiency. It is estimated that currently 40% of global consumption of electricity is related to the use of electric motors. Moreover, the application of new technologies has become increasingly common in many industry sectors, bringing deep changes in the form of application and control of electric motors. Within this context of technological changes and pressures for higher energy efficiency, WEG presents its line of capacitors for power factor correction.

## Standard Features:

- Self-healing metalized polypropylene film
- Internal over pressure security device
- Maximum allowed fault current of 10kA
- Dielectric losses smaller than 0,2 W/kVAr
- Internal discharge resistors in three-phase units, modules and banks
- Custom Built PFCC Banks available upon Request

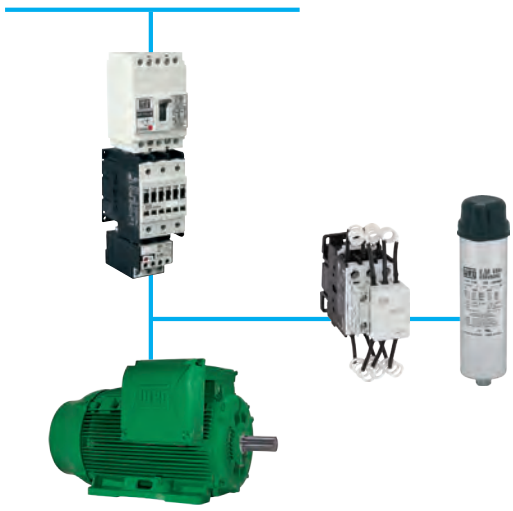
# Power Factor Correction

## Sizing Power Factor Capacitors

There are 2 methods we will use examples to show how to size power factor correction capacitors.
The simplest method uses the selected chart below. The selection chart shows the maximum KVAR based on the motor hp and rpm. The KVAR recommended is designed to improve the power factor to approximately .95.

| HP | 3600 RPM | | 1800 RPM | | 1200 RPM | | 900 RPM | | 720 RPM | | 600 RPM | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Required KVAR | Est. Amp Red. % | Required KVAR | Est. Amp Red. % | Required KVAR | Est. Amp Red. % | Required KVAR | Est. Amp Red. % | Required KVAR | Est. Amp Red. % | Required KVAR | Est. Amp Red. % |
| 1 | 0.5 | 15 | 0.75 | 24 | 1 | 29 | 1.5 | 39 | 1.5 | 42 | 2 | 42 |
| 1.5 | 0.75 | 15 | 0.75 | 24 | 1 | 29 | 1.5 | 39 | 2 | 42 | 2 | 42 |
| 2 | 1.0 | 15 | 1 | 24 | 1.5 | 29 | 2 | 39 | 2 | 42 | 2.5 | 42 |
| 3 | 1.5 | 14 | 1.5 | 23 | 2.5 | 28 | 3 | 38 | 3 | 40 | 3 | 40 |
| 5 | 2 | 14 | 2.5 | 22 | 3 | 26 | 3 | 31 | 3 | 40 | 5 | 40 |
| 7.5 | 2.5 | 14 | 3 | 20 | 3 | 21 | 5 | 28 | 5 | 38 | 5 | 45 |
| 10 | 3 | 14 | 3 | 18 | 5 | 21 | 5 | 27 | 7.5 | 36 | 7.5 | 38 |
| 15 | 5 | 12 | 5 | 18 | 5 | 20 | 7.5 | 24 | 7.5 | 32 | 10 | 34 |
| 20 | 5 | 12 | 5 | 17 | 7.5 | 19 | 7.5 | 23 | 12.5 | 25 | 17.5 | 30 |
| 25 | 7.5 | 12 | 7.5 | 17 | 7.5 | 19 | 10 | 23 | 12.5 | 25 | 17.5 | 30 |
| 30 | 7.5 | 11 | 7.5 | 16 | 10 | 19 | 12.5 | 22 | 15 | 24 | 22.5 | 30 |
| 40 | 10 | 12 | 12.5 | 15 | 15 | 19 | 17.5 | 21 | 22.5 | 24 | 25 | 30 |
| 50 | 12.5 | 12 | 17.5 | 15 | 20 | 19 | 22.5 | 21 | 22.5 | 24 | 30 | 30 |
| 60 | 15 | 12 | 20 | 14 | 22.5 | 17 | 25 | 20 | 30 | 22 | 35 | 28 |
| 75 | 20 | 12 | 22.5 | 14 | 25 | 15 | 27.5 | 17 | 30 | 14 | 40 | 19 |
| 100 | 22.5 | 11 | 30 | 14 | 30 | 12 | 35 | 16 | 40 | 15 | 45 | 17 |
| 125 | 25 | 10 | 35 | 12 | 35 | 12 | 40 | 14 | 45 | 15 | 50 | 17 |
| 150 | 30 | 10 | 40 | 12 | 40 | 12 | 50 | 14 | 50 | 14 | 60 | 17 |
| 200 | 35 | 10 | 50 | 11 | 50 | 10 | 60 | 13 | 60 | 13 | 90 | 17 |
| 250 | 40 | 11 | 60 | 10 | 60 | 10 | 75 | 13 | 85 | 13 | 100 | 17 |
| 300 | 45 | 11 | 60 | 10 | 75 | 12 | 100 | 14 | 100 | 13 | 120 | 17 |
| 350 | 50 | 12 | 75 | 8 | 90 | 12 | 120 | 13 | 120 | 13 | 135 | 15 |
| 400 | 75 | 10 | 75 | 8 | 100 | 12 | 130 | 13 | 140 | 13 | 150 | 15 |
| 450 | 75 | 8 | 90 | 8 | 120 | 10 | 140 | 12 | 160 | 14 | 160 | 15 |
| 500 | 100 | 8 | 100 | 9 | 150 | 12 | 160 | 12 | 180 | 13 | 180 | 15 |

***Example:***
For a 75 hp motor running at 3600 rpm, the maximum value would be 20 KVAR.
Important! Do not oversize the capacitors, when sizing at the motor load to avoid over voltage on the circuit.



***Note: the KVAR needed to correct the Power Factor is the same regardless of the motor voltage. The actual capacitor selection is dependant on voltage.***


Data is subject to change without notice.

## Sizing Power Factor Capacitors

The next method uses a power factor multiplier chart and formula for calculating the recommended KVAR. This method is often used when sizing power factor capacitors for a system wide approach.

| Current power factor | Desired Power factor (F) | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0.85 | 0.86 | 0.87 | 0.88 | 0.89 | 0.90 | 0.91 | 0.92 | 0.93 | 0.94 | 0.95 | 0.96 | 0.97 | 0.98 | 0.99 |
| 0.50 | 1.112 | 1.139 | 1.165 | 1.192 | 1.220 | 1.248 | 1.276 | 1.306 | 1.337 | 1.369 | 1.403 | 1.440 | 1.481 | 1.529 | 1.589 |
| 0.52 | 1.023 | 1.050 | 1.076 | 1.103 | 1.131 | 1.159 | 1.187 | 1.217 | 1.248 | 1.280 | 1.314 | 1.351 | 1.392 | 1.440 | 1.500 |
| 0.54 | 0.939 | 0.966 | 0.992 | 1.019 | 1.047 | 1.075 | 1.103 | 1.133 | 1.164 | 1.196 | 1.230 | 1.267 | 1.308 | 1.356 | 1.416 |
| 0.56 | 0.860 | 0.887 | 0.913 | 0.940 | 0.968 | 0.996 | 1.024 | 1.054 | 1.085 | 1.117 | 1.151 | 1.188 | 1.229 | 1.277 | 1.337 |
| 0.58 | 0.785 | 0.812 | 0.838 | 0.865 | 0.893 | 0.921 | 0.949 | 0.979 | 1.010 | 1.042 | 1.076 | 1.113 | 1.154 | 1.202 | 1.262 |
| 0.60 | 0.713 | 0.740 | 0.766 | 0.793 | 0.821 | 0.849 | 0.877 | 0.907 | 0.938 | 0.970 | 1.004 | 1.041 | 1.082 | 1.130 | 1.190 |
| 0.62 | 0.646 | 0.673 | 0.699 | 0.726 | 0.754 | 0.782 | 0.810 | 0.840 | 0.871 | 0.903 | 0.937 | 0.974 | 1.015 | 1.063 | 1.123 |
| 0.64 | 0.581 | 0.608 | 0.634 | 0.661 | 0.689 | 0.717 | 0.745 | 0.775 | 0.806 | 0.838 | 0.872 | 0.909 | 0.950 | 0.998 | 1.068 |
| 0.66 | 0.518 | 0.545 | 0.571 | 0.598 | 0.626 | 0.654 | 0.682 | 0.712 | 0.743 | 0.775 | 0.809 | 0.846 | 0.887 | 0.935 | 0.995 |
| 0.68 | 0.458 | 0.485 | 0.511 | 0.538 | 0.566 | 0.594 | 0.622 | 0.652 | 0.683 | 0.715 | 0.749 | 0.786 | 0.827 | 0.875 | 0.935 |
| 0.70 | 0.400 | 0.427 | 0.453 | 0.480 | 0.508 | 0.536 | 0.564 | 0.594 | 0.625 | 0.657 | 0.691 | 0.728 | 0.769 | 0.817 | 0.877 |
| 0.72 | 0.344 | 0.371 | 0.397 | 0.424 | 0.452 | 0.480 | 0.508 | 0.538 | 0.569 | 0.601 | 0.635 | 0.672 | 0.713 | 0.761 | 0.821 |
| 0.74 | 0.289 | 0.316 | 0.342 | 0.369 | 0.397 | 0.425 | 0.453 | 0.483 | 0.514 | 0.546 | 0.580 | 0.617 | 0.658 | 0.706 | 0.766 |
| 0.76 | 0.235 | 0.262 | 0.288 | 0.315 | 0.343 | 0.371 | 0.399 | 0.429 | 0.460 | 0.492 | 0.526 | 0.563 | 0.604 | 0.652 | 0.712 |
| 0.78 | 0.182 | 0.209 | 0.235 | 0.262 | 0.290 | 0.318 | 0.346 | 0.376 | 0.407 | 0.439 | 0.473 | 0.510 | 0.551 | 0.599 | 0.659 |
| 0.80 | 0.130 | 0.157 | 0.183 | 0.210 | 0.238 | 0.266 | 0.294 | 0.324 | 0.355 | 0.387 | 0.421 | 0.458 | 0.499 | 0.547 | 0.609 |
| 0.82 | 0.078 | 0.105 | 0.131 | 0.158 | 0.186 | 0.214 | 0.242 | 0.272 | 0.303 | 0.335 | 0.369 | 0.406 | 0.447 | 0.495 | 0.555 |
| 0.84 | 0.026 | 0.053 | 0.079 | 0.106 | 0.134 | 0.162 | 0.190 | 0.220 | 0.251 | 0.283 | 0.317 | 0.354 | 0.395 | 0.443 | 0.503 |
| 0.86 | - | - | 0.026 | 0.053 | 0.081 | 0.109 | 0.137 | 0.167 | 0.198 | 0.230 | 0.264 | 0.301 | 0.342 | 0.390 | 0.450 |
| 0.88 | - | - | - | - | 0.028 | 0.056 | 0.084 | 0.114 | 0.145 | 0.177 | 0.211 | 0.248 | 0.289 | 0.337 | 0.397 |
| 0.90 | - | - | - | - | - | - | 0.028 | 0.058 | 0.089 | 0.121 | 0.155 | 0.192 | 0.233 | 0.281 | 0.341 |
| 0.92 | - | - | - | - | - | - | - | - | 0.031 | 0.063 | 0.097 | 0.134 | 0.175 | 0.223 | 0.283 |
| 0.94 | - | - | - | - | - | - | - | - | - | - | 0.034 | 0.071 | 0.112 | 0.160 | 0.229 |
| 0.96 | - | - | - | - | - | - | - | - | - | - | - | - | 0.041 | 0.089 | 0.149 |
| 0.98 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.060 |

First determine the Total kW used in the system.
Second, look to the left hand column of the power factor correction multiplier chart (Table above), and select the original or existing power factor.
Third, select the desired power factor and choose the number (multiplier) that intersects the two columns.
Take the number (multiplier) and multiply it by the Total kW of the system.

***Example:***

Total kW _____= 500 kW
Existing Power Factor _____ = .78
Required Power Factor _____ = .92
Multiplier from Table above_____ = 0.376

**Formula:**
**0.376 x 500 kW = 188 kVAr**

For automatic switching or fixed units at the main, choose the closest value. If the exact kVAr is not listed, choose the next higher rating.
For the example listed above, it would be 200 kVAr.

If the existing power factor is not known, you can calculate it.
The power factor formula is: Active Power (kW) divided by the Apparent Power (kVA)
**PF = kW / kVA**

*Notes: The examples shown on this catalog are strictly for guidance. Whenever possible, the load types and load curves of the installation should be evaluated. If more than 20% of the loads to be corrected are non-linear (VSDs, Soft-Starters, rectifiers, electronic reactors, etc.), Anti-Harmonics Inductors must be installed in series with the capacitors.*
*THD limit for capacitors: THDvoltage < 5% Vrms and THDcurrent < 15%.*
*The use of capacitors in electric systems with high harmonic distortions can internally damage the capacitive cells.*

# Power Factor Correction

## Three Phase Capacitive Units - UCWT

**Power 0.37...15 (kVAr)**
**Rated Voltage 208...240 (V)**

**Power 0.37...25 (kVAr)**
**Rated Voltage 380...480 (V)**



### Three Phase Capacitors - UCWT (1) and (2)

| Rated Voltage (V) | 60 Hz | | Capacitance (uF) | Capacitance (uF) (Δ Connection) | Series (3) | Dimensions ØxH (in) | Weight (lb) | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|---|---|---|---|---|
| | Reative Power (kVAr) | Rated Current In (A) | | | | | | | | |
| 208 | 0.45 | 1.2 | 9.1 | 9.1 x 3 | D | 2.4 x 6.1 | 1.19 | UCWT0.5V25 L10 | $45.00 | Z11 |
| | 0.67 | 1.9 | 13.7 | 13.7 x 3 | D | 2.4 x 6.1 | 1.19 | UCWT0.75V25 L10 | $47.00 | |
| | 0.89 | 2.5 | 18.3 | 18.3 x 3 | D | 2.4 x 6.1 | 1.19 | UCWT1V25 L10 | $50.00 | |
| | 1.34 | 3.7 | 27.4 | 27.4 x 3 | D | 2.4 x 6.1 | 1.19 | UCWT1.5V25 L10 | $55.00 | |
| | 1.79 | 5.0 | 36.6 | 36.6 x 3 | D | 2.4 x 6.1 | 1.19 | UCWT2V25 L10 | $61.00 | |
| | 2.23 | 6.2 | 45.7 | 45.7 x 3 | D | 2.4 x 8.3 | 1.19 | UCWT2.5V25 L16 | $70.00 | |
| | 2.68 | 7.4 | 54.8 | 54.8 x 3 | D | 2.4 x 8.3 | 1.52 | UCWT3V25 L16 | $76.00 | |
| | 4.47 | 12.4 | 91.4 | 91.4 x 3 | E | 2.9 x 8.7 | 3.01 | UCWT5V25 N20 | $124.00 | |
| | 6.70 | 18.6 | 137.1 | 137.1x3 | E | 2.9 x11.1 | 3.85 | UCWT7.5V25 N22 | $148.00 | |
| | 8.94 | 24.8 | 182.8 | 182.7x3 | E | 2.9 x11.1 | 3.85 | UCWT10V25 N22 | $175.00 | |
| | 8.94 | 24.8 | 182.8 | 182.7x3 | F | 3.9x9.0 | 2.17 | UCWT10V25 Q26 | $184.00 | |
| | 11.17 | 31.0 | 228.5 | 228.3x3 | F | 3.3 x 14 | 4.40 | UCWT12.5V25 Q26 | $192.00 | |
| | 13.41 | 37.2 | 274.2 | 274 x3 | F | 3.3 x 14 | 4.40 | UCWT15V25 S26 | $246.00 | |
| | 15.64 | 43.4 | 319.7 | 319.7x3 | F | 4.5 x 11.4 | 3.50 | UCWT17.5V25 S26 | $258.00 | |
| | 17.88 | 49.6 | 385.4 | 385.4x3 | F | 4.5 x 11.4 | 3.50 | UCWT20V25 S28 | $267.00 | |
| | 22.35 | 62.0 | 456.7 | 456.7x3 | F | 5.3 x 11.4 | 4.43 | UCWT25V25 U28 | $278.00 | |
| | 26.82 | 74.4 | 548.1 | 548.1x3 | F | 5.3 x 11.4 | 4.43 | UCWT30V25 U28 | $285.00 | |
| 240 | 0.50 | 1.2 | 7.7 | 7.7x3 | D | 2.4 x 6.1 | 1.19 | UCWT0.5V29 L10 | $45.00 | |
| | 0.75 | 1.8 | 11.5 | 11.5x3 | D | 2.4 x 6.1 | 1.19 | UCWT0.75V29 L10 | $47.00 | |
| | 1.00 | 2.4 | 15.4 | 15.4x3 | D | 2.4 x 6.1 | 1.19 | UCWT1V29 L10 | $50.00 | |
| | 1.50 | 3.6 | 23.0 | 23.0x3 | D | 2.4 x 6.1 | 1.19 | UCWT1.5V29 L10 | $55.00 | |
| | 2.00 | 4.8 | 30.7 | 30.7x3 | D | 2.4 x 6.1 | 1.19 | UCWT2V29 L10 | $61.00 | |
| | 2.50 | 6.0 | 38.4 | 38.4x3 | D | 2.4 x 8.3 | 1.19 | UCWT2.5V29 L16 | $70.00 | |
| | 3.00 | 7.2 | 46.1 | 46.1x3 | D | 2.4 x 8.3 | 1.19 | UCWT3V29 L16 | $76.00 | |
| | 5.00 | 12.0 | 76.8 | 76.8x3 | E | 2.9 x 8.7 | 3.01 | UCWT5V29 N20 | $124.00 | |
| | 7.50 | 18.0 | 115.2 | 115.2x3 | E | 2.9 x 11.1 | 3.98 | UCWT7.5V29 N22 | $148.00 | |
| | 10.00 | 24.1 | 153.6 | 153.6x3 | E | 3.3 x 14 | 4.40 | UCWT10V29 N22 | $175.00 | |
| | 10.00 | 24.1 | 153.5 | 153.6x3 | F | 2.5 x 9 | 4.40 | UCWT10V29 Q26 | $184.00 | |
| | 12.50 | 30.1 | 192.0 | 192.0x3 | F | 3.3 x 14 | 4.40 | UCWT12.50 Q26 | $246.00 | |
| | 15.00 | 36.1 | 230.3 | 230.3x3 | F | 4.5 x 9 | 5.10 | UCWT15V29 S26 | $257.00 | |
| | 17.50 | 42.1 | 268.3 | 268.3x3 | F | 4.5 x9 | 7.10 | UCWT7.5V29 S28 | $269.00 | |
| | 20.00 | 48.1 | 307.0 | 307x3 | F | 4.5 x9 | 7.05 | UCWT20V29 S28 | $269.00 | |

*(1) For other voltages, please contact WEG.*

*(2) Discharge resistors sized so the voltage on the terminals of the capacitor is 1/10 of the rated voltage in 30 s.*

*(3) The D series capacitors are provided with internal resistors in the capacitive cell. The E series capacitors are provided with external resistors in the capacitive cell.*



Data is subject to change without notice.

## Three Phase Capacitors - UCWT (1) and (2)

| Rated Voltage (V) | 60 Hz | | Capacitance (uF) | Capacitance (uF) (Δ Connection) | Series (3) | Dimensions ØxH (in) | Weight (lb) | Catalog Number | List Price | Multiplier |
|---|---|---|---|---|---|---|---|---|---|---|
| | Reative Power (kVAr) | Rated Current In (A) | | | | | | | | |
| | 0.50 | 0.6 | 1.9 | 1.9 x 3 | D | 2.4 x 6.1 | 1.17 | UCWT0.5V53 L10 | $43.00 | |
| | 0.60 | 0.7 | 2.3 | 2.3 x3 | D | 2.4 x 6.1 | 1.17 | UCWT0.5V52 L10 | $43.00 | |
| | 0.75 | 0.9 | 2.9 | 2.9 x 3 | D | 2.4 x 6.1 | 1.17 | UCWT0.75V53 L10 | $45.00 | |
| | 0.90 | 1.1 | 3.5 | 3.5x3.5 | D | 2.4 x 6.1 | 1.17 | UCWT0.75V52 L10 | $46.00 | |
| | 1.00 | 1.2 | 3.8 | 3.8 x 3 | D | 2.4 x 6.1 | 1.17 | UCWT1V53 L10 | $47.00 | |
| | 1.50 | 1.8 | 5.8 | 5.8 x 3 | D | 2.4 x 6.1 | 1.17 | UCWT1.5V53 L10 | $51.00 | |
| | 1.90 | 2.2 | 6.9 | 6.9x3 | D | 2.4 x 6.1 | 1.17 | UCWT1.5V52 L10 | $51.00 | |
| | 2.00 | 2.4 | 7.7 | 7.7 x 3 | D | 2.4 x 6.1 | 1.17 | UCWT2V53 L10 | $56.00 | |
| | 2.50 | 3.0 | 9.6 | 9.6 x 3 | D | 2.4 x 6.1 | 1.17 | UCWT2.5V53 L10 | $60.00 | |
| | 3.60 | 4.3 | 13.8 | 13.8 x 3 | D | 2.4 x 6.1 | 1.63 | UCWT5V53 L10 | $80.00 | |
| | 5.00 | 6.0 | 19.2 | 19.2 x 3 | D | 2.4 x 6.1 | 1.52 | UCWT5V53 L16 | $80.00 | |
| | 7.50 | 9.0 | 28.8 | 28.8 x 3 | E | 2.9 x 8.7 | 2.93 | UCWT7.5V53 N20 | $103.00 | |
| | 9.00 | 10.8 | 34.5 | 34.5x3 | E | 2.9 x 3 | 2.93 | UCWT7.5V52 N20 | $114.00 | |
| 480 | 10.00 | 12.0 | 38.4 | 38.4 x 3 | E | 2.9 x 8.7 | 3.04 | UCWT10V53 N20 | $118.00 | Z11 |
| | 12.50 | 15.0 | 48.0 | 48.0 x 3 | E | 2.9 x 11.1 | 3.81 | UCWT12.5V53 N22 | $131.00 | |
| | 15.00 | 18.0 | 57.6 | 57.6 x 3 | E | 2.9 x 11.1 | 0.00 | UCWT12.5V52 N22 | $145.00 | |
| | 15.00 | 18.0 | 57.6 | 57.6 x 3 | E | 2.9 x 11.1 | 0.00 | UCWT12.5V53 N22 | $155.00 | |
| | 15.00 | 18.0 | 57.6 | 57.6 x 3 | E | 2.9 x 11.1 | 0.00 | UCWT12.5V53 Q26 | $155.00 | |
| | 17.50 | 21.0 | 67.2 | 67.15 x 3 | E | 3.3 x 14 | 4.40 | UCWT17.5V53 S26 | $219.00 | |
| | 18.00 | 21.7 | 69.1 | 69.1 x 3 | F | 3.3 x 14 | 4.40 | UCWT15V52 Q26 | $224.00 | |
| | 20.00 | 24.1 | 76.8 | 76.7 x 3 | F | 3.3 x 14 | 4.40 | UCWT20V53 S26 | $232.00 | |
| | 22.50 | 27.1 | 86.4 | 86.3 x 3 | F | 4.5 x 9 | 4.40 | UCWT22.5V53 S26 | $246.00 | |
| | 25.00 | 30.1 | 96.0 | 96.3 x3 | F | 4.5 x 9 | 4.40 | UCWT25V53 S26 | $259.00 | |
| | 30.00 | 36.1 | 115.1 | 115.1x3 | F | 4.5 x 9 | 4.40 | UCWT30V53 S28 | $267.00 | |
| | 35.00 | 42.1 | 134.3 | 134.3x3 | F | 4.5 x 9 | 4.40 | UCWT39V53 S28 | $274.00 | |
| | 40.00 | 48.1 | 153.5 | 153.5x3 | F | 5.3 x 9 | 45.10 | UCWT40V53 U28 | $289.00 | |
| | 50.00 | 60.1 | 191.9 | 191.9x3 | F | 5.3 x 9 | 45.10 | UCWT50V53 U29 | $325.00 | |

*(1) For other voltages, please contact WEG.*

*(2) Discharge resistors sized so the voltage on the terminals of the capacitor is 1/10 of the rated voltage in 30 s.*

*(3) The D series capacitors are provided with internal resistors in the capacitive cell. The E series capacitors are provided with external resistors in the capacitive cell.*

## Capacitive Units - Technical Data

| Technical Characteristics | D Series | E Series | F Series |
|---|---|---|---|
| Phases | Three Phase | | |
| Power | 0.37...5 [kVAr] | 3.72...25 [kVAr] | 7,45...25 [kvar] |
| Rated Voltage | 208...480 [V] | | |
| Rated Frequency | 50 or 60 [Hz] | | |
| Capacitance tolerance | ±5 [%] | | |
| Useful Life | 100.000 [h] | | |
| Temperature class | Min temperature: -13 ºF<br>Max temperature: 131 ºF<br><br>Avg. max. temp. in 24h = 13 ºF<br>Avg. max. temp. in 1 year = 95 ºF | | |
| Safety | Self-healing polypropylene film<br>Disconnection for overpressure | | |
| Max. Short Circuit Capacity | 10 [kA] @ 560V | | |
| Protection Degree | IP50 | IP20 | |
| Max. Altitude (1) | 6561 (ft) | | |
| Shield / Terminal | Plastic / Screw + Washer | Aluminum / Box | |
| Input Cable Connection | M3 Flat/Philips | Box Terminal | |
| Input Cable Section | 20…10 AWG | 10…8 AWG | |
| Input Cable Torque | 7…13 (lb-in) | 13…22 (lb-in) | |
| Discharge Resistance | Inside the product | Fast-on Terminal | |
| Discharge Resistor | Included | | |
| Capacitor Mounting Bolt | M12 bolt | | |
| Max. Torque for Capacitor | 124 (lb-in) | | |
| Impregnation | Polyurethane Resin | | |
| Max. Voltage | 1.1 x Vn 8h<br>Duration for each 24 h - not continuous (system fluctuation) | | |
| Max. dV/dt | ≤ 30 [V/µs] | | |
| Max. Current | 1.3 x In (short periods of time) | | |
| Max. Inrush Currente | ≤ 100 x In | | |
| Voltage Test Between Terminals | 2.15 x Vn for 2 sec | | |
| Voltage Test Between Terminals and Enclosure | 3 kV for 2 sec | | |
| Reference Standards | IEC 60831-1/2 UL 810 | | |
| Certifications | - (2) cULus | | |

*(1) Maximum Altitude: 6561 ft. For application in higher altitudes, please contact WEG.*
*(2) in progress*

## Accessories for Capacitors

### Discharge Resistors

| UCWT (E and F Series) | | | | |
|---|---|---|---|---|
| Catalog Number | Resistance / Power | Package Quantity | List Price | Multiplier |
| RDC 39KΩ 3W - UCW-T | 3x39 kΩ / 3 W | 1pk with 3 pieces | $3 | Z11 |
| RDC 56KΩ 3W - UCW-T | 3x56 kΩ / 3 W | 1pk with 3 pieces | $3 | |
| RDC 82KΩ 3W - UCW-T | 3x82 kΩ / 3 W | 1pk with 3 pieces | $3 | |
| RDC 120KΩ 3W - UCW-T | 3x120 kΩ / 3 W | 1pk with 3 pieces | $3 | |
| RDC 150KΩ 3W - UCW-T | 3x150 kΩ / 3 W | 1pk with 3 pieces | $3 | |
| RDC 180KΩ 3W - UCW-T | 3x180 kΩ / 3 W | 1pk with 3 pieces | $3 | |
| RDC 270KΩ 3W - UCW-T | 3x270 kΩ / 3 W | 1pk with 3 pieces | $3 | |
| RDC 390KΩ 3W - UCW-T | 3x390 kΩ / 3 W | 1pk with 3 pieces | $3 | |





Data is subject to change without notice.

## D Series

## Three Phase Capacitive Units - UCWT

**Power 0.37...3 (kVAr)**
**Rated Voltage 208...240 (V)**

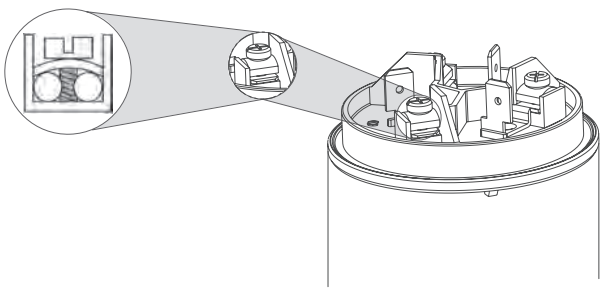
UL File No. E192546

**Power 0.37...5 (kVAr)**
**Rated Voltage 380...480 (V)**

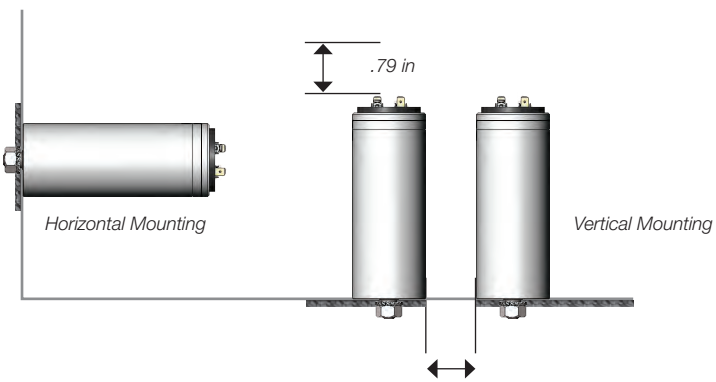



*Electrical Connections*

- Provided with NEMA 12 rating protection cover.
- M3 Flat/Philips screw terminals for connection of power cables.
- The D series capacitors are provided with internal resistors in the capacitive cell.
- Grounding is assured by connection of capacitive unit mounting bolt with assembly plate.



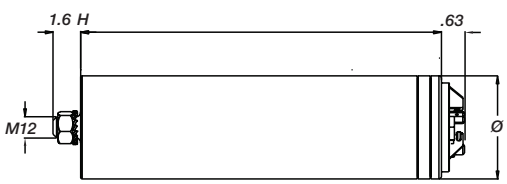
*Mounting*






*M12 bolt mounting*
*(Nut and washer included)*

*Dimensional (in) and Protection Degree*




| Diameter (Ø) | Height (H) | Protection Degree |
|---|---|---|
| 2.4 | 6.1 | IP50 |
| 2.4 | 8.3 | IP50 |

## E Series

## Three Phase Capacitive Units - UCWT

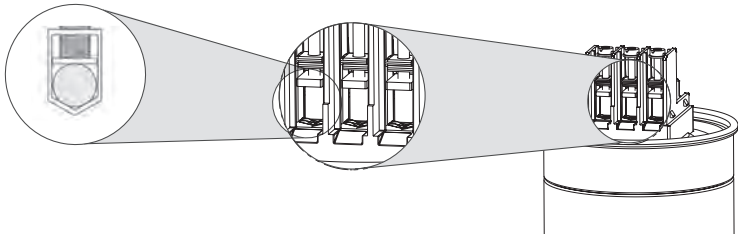
**Power 3.72...15 (kVAr)**
**Rated Voltage 208...240 (V)**

**Power 5.56...25 (kVAr)**
**Rated Voltage 380...480 (V)**

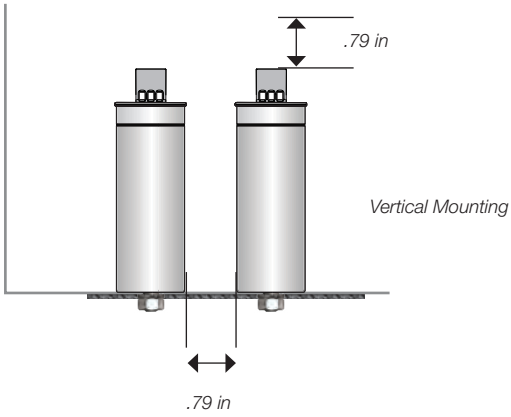



*Electrical Connections*

- "Box" type terminals for connection of power cables.
- Fast-on connection terminals for discharge resistor connection
- The E series capacitors are provided with external resistors in the capacitive cell.
- Allows connection of power cables separately from discharge resistors.
- Grounding is assured by connection of capacitive unit mounting bolt with assembly plate.



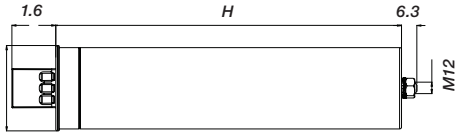
*Mounting*






*M12 bolt mounting*
*(Nut and washer included)*

*Dimensional (in) and Protection Degree*




| Diameter (Ø) | Height (H) | Protection Degree |
|---|---|---|
| 2.9 | 8.7 | IP20 |
| 2.9 | 11.1 | IP20 |
| 3.3 | 14 | IP20 |



Data is subject to change without notice.

## F Series

## Three Phase Capacitive Units - UCWT

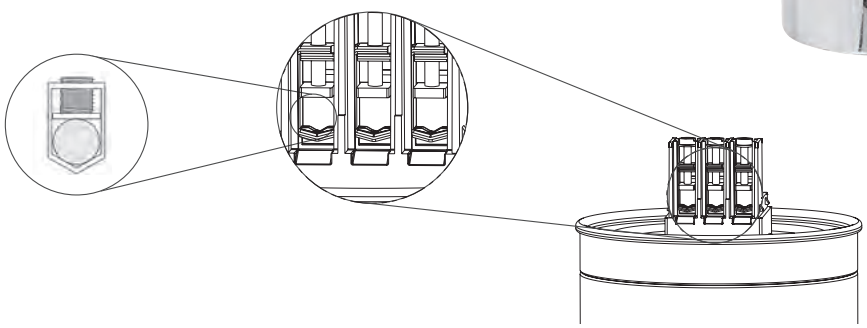
**Power 7.45...15 (kVAr)**
**Rated Voltage 208...240 (V)**

**Power 11.12...25 (kVAr)**
**Rated Voltage 380...480 (V)**

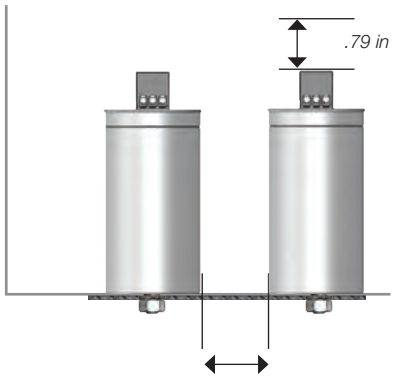



*Electrical Connections*

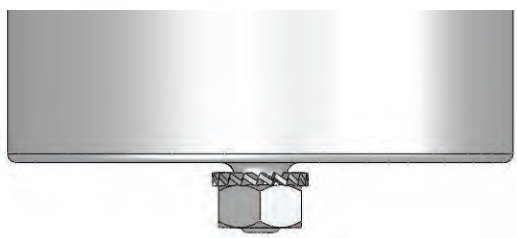
- "Box" type terminals for connection of power cables.
- Fast-on connection terminals for discharge resistor connection.
- The F series capacitors are provided with external resistors in the capacitive cell.
- Allows connection of power cables separately from discharge resistors.
- Grounding is assured by connection of capacitive unit mounting bolt with assembly plate.



*Mounting*



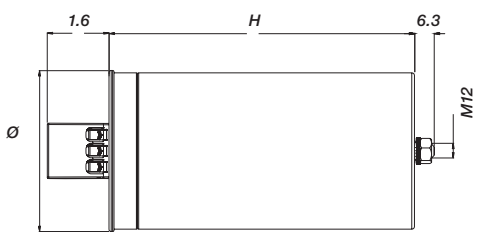

*Vertical Mounting*



*M12 bolt mounting*
*(Nut and washer included)*

Reduced height accommodates installation in MCC buckets.

*Dimensional (in) and Protection Degree*




| Diameter (Ø) | Height (H) | Protection Degree |
|---|---|---|
| 3.9 | 9.1 | IP20 |
| 4.6 | 9.1 | IP20 |

## Three Phase Enclosed Capacitors - BCW

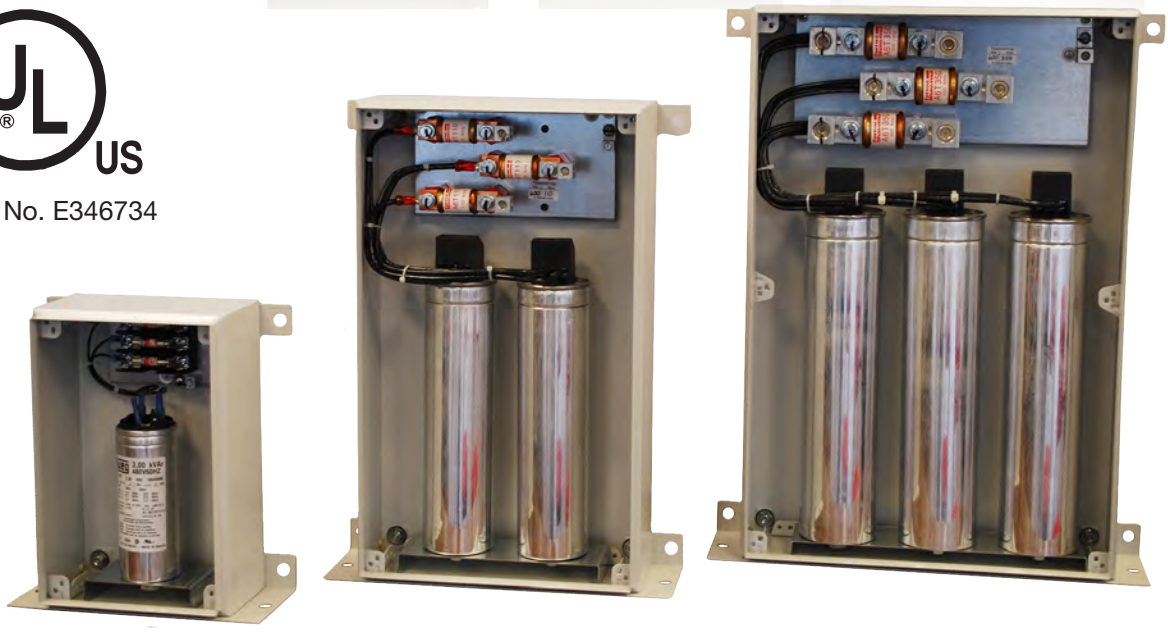
### BCW Series

**Straight-forward Design**
WEG Enclosed Power Factor Capacitor Banks include Three-phase WEG UCWT Capacitors in a NEMA 4 enclosure that is easy to install and wire.

### Reliability
WEG UCWT Capacitors are assembled with high performance and low loss, self healing polypropolene dielectric film.

### Flexibility
Three phase enclosed capacitor banks available with or without fuses. NEMA 4 enclosure is standard, so no need to worry whether the installation is indoors or outdoors.



UL File No. E346734



Data is subject to change without notice.

# Three Phase Enclosed Capacitors - BCW

## Non-Fused - 240V

| Catalog Number[1] | Reactive Power (kVAr) | Rated Current In (A) | Enclosure Size (in) H x W x D | Enclosure Drawing Ref | List Price | Multiplier |
|---|---|---|---|---|---|---|
| BCWTC050V29A4-N | 0.5 | 1.20 | 11.8 x 7.9 x 4.8 | A | $603 | Z11 |
| BCWTC075V29A4-N | 0.75 | 1.80 | | | $606 | |
| BCWTC100V29A4-N | 1 | 2.41 | | | $609 | |
| BCWTC150V29A4-N | 1.5 | 3.61 | | | $617 | |
| BCWTC200V29A4-N | 2 | 4.81 | | | $624 | |
| BCWTC250V29B4-N | 2.5 | 6.01 | 15.8 x 7.9 x 4.8 | B | $643 | |
| BCWTC300V29B4-N | 3 | 7.22 | | | $650 | |
| BCWTC500V29B4-N | 5 | 12.03 | | | $709 | |
| BCWTC750V29C4-N | 7.5 | 18.04 | 19.8 x 7.9 x 4.8 | C | $810 | |
| BCWTD100V29E4-N | 10 | 24.06 | 23.6 x 11.8 x 4.8 | E | $967 | |
| BCWTD125V29E4-N | 12.5 | 30.07 | | | $1,055 | |
| BCWTD150V29E4-N | 15 | 36.08 | | | $1,121 | |
| BCWTD175V29E4-N | 17.5 | 42.10 | | | $1,342 | |
| BCWTD200V29E4-N | 20 | 48.11 | | | $1,374 | |
| BCWTD250V29E4-N | 25 | 60.14 | | | $1,475 | |
| BCWTD275V29E4-N | 27.5 | 66.15 | | | $1,561 | |
| BCWTD300V29E4-N | 30 | 72.17 | | | $1,576 | |
| BCWTD350V29F4-N | 35 | 84.20 | 23.6 x 15.8 x 4.8 | F | $1,791 | |
| BCWTD400V29F4-N | 40 | 96.23 | | | $1,892 | |
| BCWTD450V29F4-N | 45 | 108.25 | | | $2,015 | |

## Fused - 240V

| Catalog Number[1] | Reactive Power (kVAr) | Rated Current In (A) | Enclosure Size (in) H x W x D | Enclosure Drawing Ref | List Price | Multiplier |
|---|---|---|---|---|---|---|
| BCWTC050V29A4-F | 0.5 | 1.20 | 11.8 x 7.9 x 4.8 | A | $833 | Z11 |
| BCWTC075V29A4-F | 0.75 | 1.80 | | | $836 | |
| BCWTC100V29A4-F | 1 | 2.41 | | | $839 | |
| BCWTC150V29A4-F | 1.5 | 3.61 | | | $847 | |
| BCWTC200V29A4-F | 2 | 4.81 | | | $854 | |
| BCWTC250V29B4-F | 2.5 | 6.01 | 15.8 x 7.9 x 4.8 | B | $871 | |
| BCWTC300V29B4-F | 3 | 7.22 | | | $881 | |
| BCWTC500V29B4-F | 5 | 12.03 | | | $934 | |
| BCWTC750V29C4-F | 7.5 | 18.04 | 19.8 x 7.9 x 4.8 | C | $1,236 | |
| BCWTD100V29E4-F | 10 | 24.06 | 23.6 x 11.8 x 4.8 | E | $1,378 | |
| BCWTD125V29E4-F | 12.5 | 30.07 | | | $1,696 | |
| BCWTD150V29E4-F | 15 | 36.08 | | | $1,488 | |
| BCWTD175V29E4-F | 17.5 | 42.10 | | | $1,663 | |
| BCWTD200V29E4-F | 20 | 48.11 | | | $1,735 | |
| BCWTD250V29E4-F | 25 | 60.14 | | | $1,848 | |
| BCWTD275V29E4-F | 27.5 | 66.15 | | | $1,924 | |
| BCWTD300V29F4-F | 30 | 72.17 | 23.6 x 15.8 x 4.8 | F | $2,384 | |
| BCWTD350V29F4-F | 35 | 84.20 | | | $2,651 | |
| BCWTD400V29F4-F | 40 | 96.23 | | | $2,760 | |
| BCWTD450V29F4-F | 45 | 108.25 | | | $2,908 | |

*(1) For other voltages, please contact WEG.*

## Three Phase Enclosed Capacitors - BCW

### Non-Fused - 480V

| Catalog Number[1] | Reactive Power (kVAr) | Rated Current In (A) | Enclosure Size (in) H x W x D | Enclosure Drawing Ref | List Price | Multiplier |
|---|---|---|---|---|---|---|
| BCWTC050V53A4-N | 0.5 | 0.60 | 11.8 x 7.9 x 4.8 | A | $601 | Z11 |
| BCWTC075V53A4-N | 0.75 | 0.90 | | | $603 | |
| BCWTC100V53A4-N | 1 | 1.20 | | | $606 | |
| BCWTC150V53A4-N | 1.5 | 1.80 | | | $612 | |
| BCWTC200V53A4-N | 2 | 2.41 | | | $617 | |
| BCWTC250V53A4-N | 2.5 | 3.01 | | | $622 | |
| BCWTC300V53A4-N | 3 | 3.61 | | | $627 | |
| BCWTC500V53B4-N | 5 | 6.01 | 15.8 x 7.9 x 4.8 | B | $658 | |
| BCWTC750V53B4-N | 7.5 | 9.02 | | | $688 | |
| BCWTD100V53B4-N | 10 | 12.03 | | | $706 | |
| BCWTD125V53C4-N | 12.5 | 15.04 | 19.7 x 7.8 x 4.8 | C | $795 | |
| BCWTD150V53C4-N | 15 | 18.04 | | | $812 | |
| BCWTD175V53E4-N | 17.5 | 21.05 | 23.7 x 11.8 x 4.8 | E | $1,030 | |
| BCWTD200V53E4-N | 20 | 24.06 | | | $1,048 | |
| BCWTD225V53E4-N | 22.5 | 27.06 | | | $1,065 | |
| BCWTD250V53E4-N | 25 | 30.07 | | | $1,082 | |
| BCWTD275V53D4-N | 27.5 | 33.08 | 19.7 x 11.8 x 4.8 | D | $1,280 | |
| BCWTD300V53D4-N | 30 | 36.08 | | | $1,297 | |
| BCWTD350V53E4-N | 35 | 42.10 | 23.6 x 11.8 x 4.8 | E | $1,498 | |
| BCWTD400V53E4-N | 40 | 48.11 | | | $1,531 | |
| BCWTD450V53E4-N | 45 | 54.13 | | | $1,565 | |
| BCWTD500V53E4-N | 50 | 60.14 | | | $1,598 | |
| BCWTD600V53F4-N | 60 | 72.17 | 23.6 x 15.8 x 4.8 | F | $1,926 | |
| BCWTD750V53F4-N | 75 | 90.21 | | | $2,026 | |

(1) For other voltages, please contact WEG.



Data is subject to change without notice.

## Three Phase Enclosed Capacitors - BCW

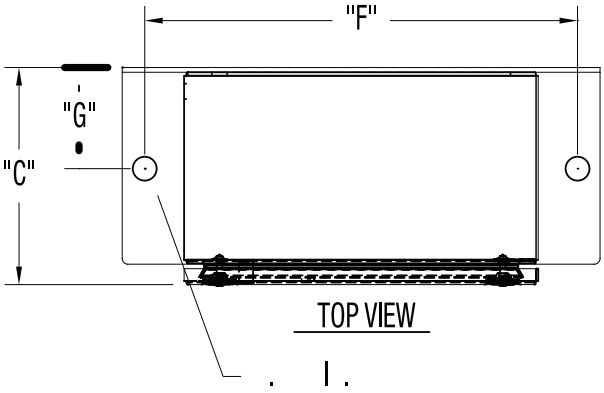
### Fused - 480V

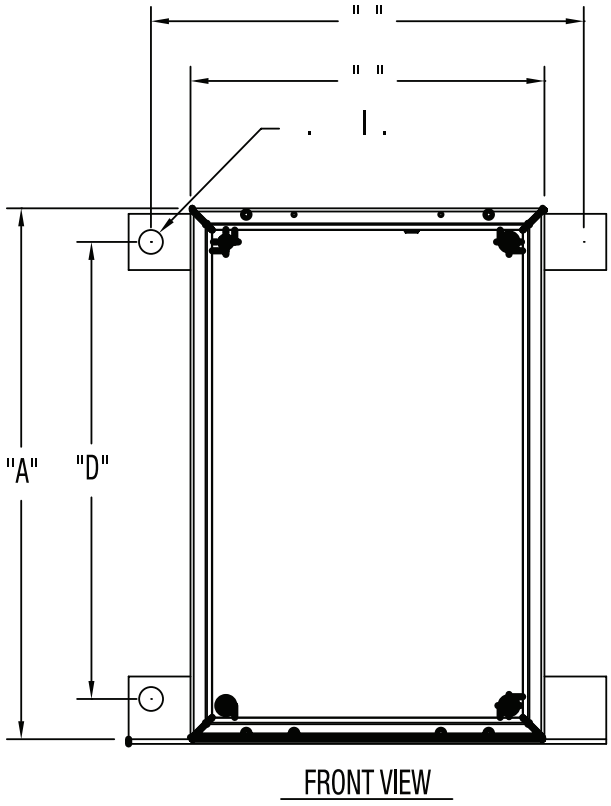
| Catalog Number[1] | Reactive Power (kVAr) | Rated Current In (A) | Enclosure Size (in) H x W x D | Enclosure Drawing Ref | List Price | Multiplier |
|---|---|---|---|---|---|---|
| BCWTC050V53A4-F | 0.5 | 0.60 | 11.8 x 7.9 x 4.8 | A | $832 | Z11 |
| BCWTC075V53A4-F | 0.75 | 0.90 | | | $834 | |
| BCWTC100V53A4-F | 1 | 1.20 | | | $836 | |
| BCWTC150V53A4-F | 1.5 | 1.80 | | | $841 | |
| BCWTC200V53A4-F | 2 | 2.41 | | | $846 | |
| BCWTC250V53A4-F | 2.5 | 3.01 | | | $851 | |
| BCWTC300V53A4-F | 3 | 3.61 | | | $856 | |
| BCWTC500V53B4-F | 5 | 6.01 | 15.8 x 7.9 x 4.8 | B | $889 | |
| BCWTC750V53B4-F | 7.5 | 9.02 | | | $915 | |
| BCWTD100V53B4-F | 10 | 12.03 | | | $932 | |
| BCWTD125V53C4-F | 12.5 | 15.04 | 19.7 x 7.8 x 4.8 | C | $1,208 | |
| BCWTD150V53C4-F | 15 | 18.04 | | | $1,238 | |
| BCWTD175V53E4-F | 17.5 | 21.05 | 23.7 x 11.8 x 4.8 | E | $1,435 | |
| BCWTD200V53E4-F | 20 | 24.06 | | | $1,455 | |
| BCWTD225V53E4-F | 22.5 | 27.06 | | | $1,497 | |
| BCWTD250V53E4-F | 25 | 30.07 | | | $1,513 | |
| BCWTD275V53D4-F | 27.5 | 33.08 | 19.7 x 11.8 x 4.8 | D | $1,587 | |
| BCWTD300V53D4-F | 30 | 36.08 | | | $1,656 | |
| BCWTD350V53E4-F | 35 | 42.10 | 23.6 x 11.8 x 4.8 | E | $1,836 | |
| BCWTD400V53E4-F | 40 | 48.11 | | | $1,877 | |
| BCWTD450V53E4-F | 45 | 54.13 | | | $1,918 | |
| BCWTD500V53E4-F | 50 | 60.14 | | | $1,959 | |
| BCWTD600V53F4-F | 60 | 72.17 | 23.6 x 15.8 x 4.8 | F | $3,110 | |
| BCWTD750V53F4-F | 75 | 90.21 | | | $3,237 | |

**(1) For other voltages, please contact WEG.**

## Three Phase Enclosed Capacitors - BCW

### Enclosure Dimension (in)




| CAPACITOR ENCLOSURE DIMENSIONS | | | | | | | |
|---|---|---|---|---|---|---|---|
| DRAWING RE | ' " | ' " | ' " | ' " | ' " | ' " | ' ' |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | . |



Data is subject to change without notice.

# Contactors for Capacitor Switching

## Switching of power factor correction capacitors

WEG's special CWMC contactors series for switching of capacitors is designed according to UL 508 and IEC 60947-1, and provides the best solution for the switching of power factor correction capacitors.

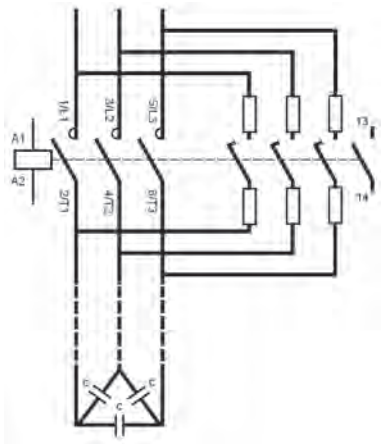


## No more in-rush

When switching on a capacitor bank, the capacitors are uncharged and the system sees them as a short circuit for a quick period of time.

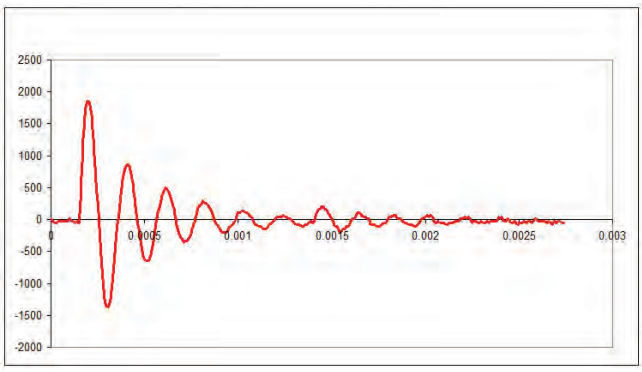
The in-rush current is the result of this little short circuit and usually lasts for some milliseconds. It may reach 100 times the rated current which one of the main reasons for the short life of a capacitor.

The CWMC contactor is assembled with damping resistors which limit the high in-rush current when the capacitors are switched on. They are assembled with an early-make contact block which is switched on before the main contacts thus, limiting the in-rush current.



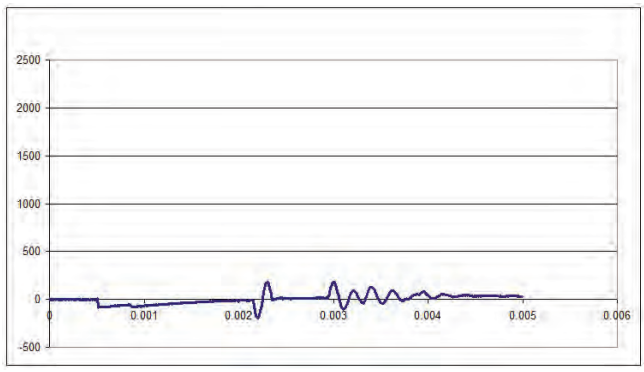

However, the damping resistors don't influence the final load, since they are switched off after 5 milliseconds leaving only the capacitors in parallel with their inductive load providing the proper power factor correction. This process increases the lifetime of the capacitors and also prevents line distortions.

Current on the contacts, without damping resistors




*Iu (A) with standard contactors*

Current on the contacts, with damping resistors installed




*Iu (A) with WEG CWMC contactor*

## Certifications

## Contactors for Capacitor Switching

**Modular design**
For 35 mm DIN rail or screw assembly.

**Damping resistors**
Avoids high in-rush current

**Contactor data and certifications**
Shows all necessary information of CWMC.

**Early make contact block**
Connects damping resistors and switches off after 5 ms

**Auxiliary Contact**
CWMC allows use of standard NO or NC contact blocks, the same used with WEG CWM contactors series



**New models**
CWMC contactors are available in 5 different models in 3 different frames. All contactors are available with AC coils with a large variety of voltage ranges for 50 or 60 Hz. For DC coils and further information, please contact a WEG representative.

### CWMC contactor for switching of capacitors (AC-6b)

| Catalog Number | Rated current AC-6b In (A) | Reactive power (kVAr) | | | | |
|---|---|---|---|---|---|---|
| | | 220-230 Vac | 480 Vac | 660/690 Vac | List Price | Multiplier |
| CWMC25-10-30** | 30 | 11 | 25 | 34 | $225 | Z1 |
| CWMC32-10-30** | 40 | 15 | 33 | 45 | $237 | Z1 |
| CWMC50-10-30** | 60 | 25 | 50 | 65 | $284 | Z1 |
| CWMC65-10-30** | 77 | 30 | 65 | 87 | $312 | Z1 |
| CWMC80-10-30** | 93 | 35 | 77 | 106 | $500 | Z1 |

### To complete catalog number, replace ** with appropriate coil voltage code

| ** Complete with the voltage code | | | |
|---|---|---|---|
| X18 | X23 | X30 | X47 |
| 120V60Hz | 208V60Hz | 240V60Hz | 480V60Hz |

### Technical Characteristics

| AC COIL | | | CWMC25 | CWMC32 | CWMC50 | CWMC65 |
|---|---|---|---|---|---|---|
| Reactive Power AC-6b @ 55 °C | 220 - 230 V | kVAr | 11 | 15 | 25 | 30 |
| | 380 - 415 V | | 20 | 25 | 40 | 50 |
| | 440 V | | 23 | 30 | 45 | 60 |
| | 480 V | | 25 | 33 | 50 | 65 |
| | 660 - 690 V | | 34 | 45 | 65 | 87 |
| AC-6b Current (Ie) | (131°F) | A | 30 | 40 | 60 | 77 |
| Thermal Current (Ith) | (131°F) | | 45 | 60 | 90 | 110 |
| AC-6b Current (Ie) | (158°F) | | 22 | 34 | 50 | 62 |
| Max Fuse (gL/gG) | | | 50 | 63 | 100 | 125 |
| Max Fuse Acc. to UL/CSA (J Type) | | | 45 | 60 | 100 | 125 |
| Cable cross section | | mm2 | 2 x 10 | 2 x 16 | 2 x 35 | 2 x 35 |
| | | AWG | 2 x 8 | 2 x 6 | 2 x 2 | 2 x 2 |
| Tightening torque | | Lb-in | 14…26 | 22…35 | 35…53 | 35…53 |
| Max. operation per hour | | ops/h. | 120 | | | |
| Max. Number of Auxiliary contacts | | | 1 | 3 | 5 | |
| Electrical Lifespan | | Ops x 103 | 100 | 100 | 100 | 100 |
| Coil consumption (AC) Pick-up/Sealing | | VA | 75/9.3 | 123/12.5 | 308/25 | 308/25 |

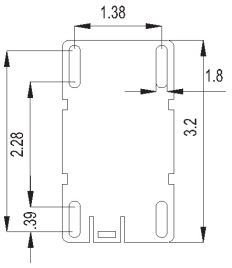


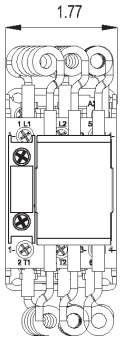
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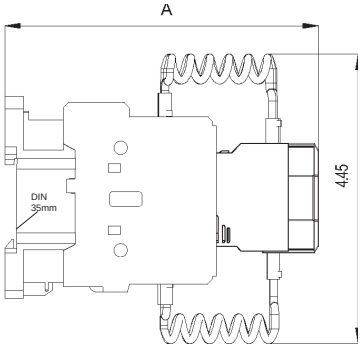
# Contactors for Capacitor Switching

## Contactors – Dimensions (in)

### CWMC25

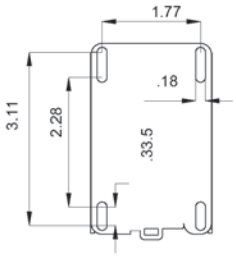


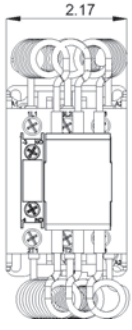



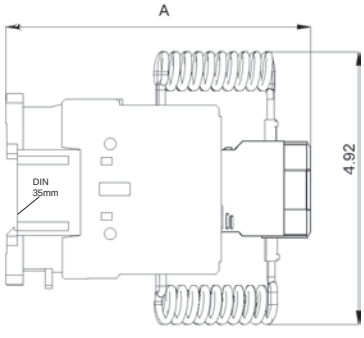




| Coil | |
|---|---|
| AC | DC |
| A = 5.08 | A = 6.26 |

### CWMC32

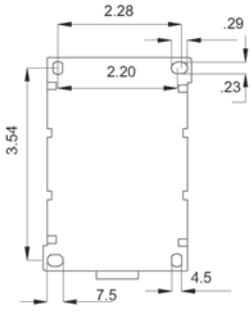


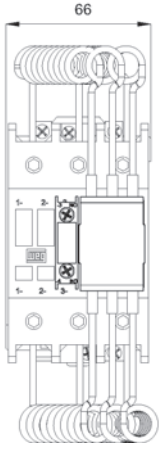



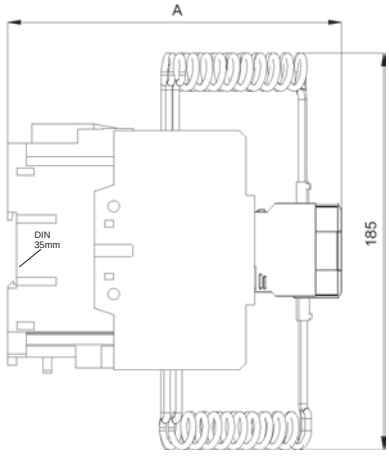




| Coil | |
|---|---|
| AC | DC |
| A = 5.5 | A = 6.3 |

### CWMC50 and CWMC65




| Coil | |
|---|---|
| AC | DC |
| A = 6.22 | A = 6.22 |

# Power Factor Correction

## Load & Harmonic Survey

### Customer Contact Information

Company Name: _____ Contact Name: _____

Address: _____ Email: _____

City, State, Zip: _____ Phone: _____

### Electrical Network Data

Distribution Transformer: _____ kVA
(obtain from the transformer nameplate)

Transformer Impedance: _____ %
(obtain from the transformer nameplate)

Primary Volts: _____ Volts
(obtain from the transformer nameplate)

Secondary Volts: _____ Volts
(obtain from the transformer nameplate)

Primary 3 Phase Fault Current: _____
(obtain from the Utility Company)

Existing KW: _____ kW
(obtain from the Utility Company)

Existing Power Factor: _____ %
(obtain from the Utility bill)

Desired Power Factor: _____ %
(recommend 95%)

Existing Capacitors Installed: _____ kVAR
(enter Total kVAR installed at motors and at the main)

### Harmonic Generating Loads

Total AC VFD Load: _____ Volts _____ HP Average Power Factor: _____
(sum of Total HP loads installed with VFDs)

Total DC VFD Load: _____ Volts _____ HP Average Power Factor: _____
(sum of Total PH loads installed with DC drives)

Other Non-linear Load: _____ Volts _____ kW Average Power Factor: _____
(Examples include 3 phase UPS, Arc Furnace, etc...)

### Comments

**SEND COMPLETED FORM TO: controlstech@weg.net**

WEG Electric Corp.
6655 Sugarloaf Pkwy, Duluth, GA 30097



Data is subject to change without notice.

| Enclosure Rating | NEMA National Electrical Manufacturers Association (NEMA Standard 250) and Electrical and Electronic Mfg. Association of Canada (EEMAC) | Underwriters Laboratories Inc. (UL50 and UL508) | Canadian Standards Association (Standard C22.2 No. 94) |
|---|---|---|---|
| **Type 1** | Enclosures are intended for indoor use primarily to provide a degree of protection against contact with the enclosed equipment or locations where unusual service conditions do not exist. | Indoor use primarily to provide protection against contact with the enclosed equipment and against a limited amount of falling dust. | General purpose enclosure. Protects against accidental contact with live parts. |
| **Type 3** | Enclosures are intended for outdoor use primarily to provide a degree of protection against windblown dust, rain, and sleet; undamaged by the formation of ice on the enclosure. | Outdoor use to provide a degree of protection against windblown dust and windblown rain; undamaged by the formation of ice on the enclosure. | Indoor or outdoor use; provides a degree of protection against rain, snow, and windblown dust; undamaged by the external formation of ice on the enclosure. |
| **Type 3R*** | Enclosures are intended for outdoor use primarily to provide a degree of protection against falling rain and sleet; undamaged by the formation of ice on the enclosure. | Outdoor use to provide a degree of protection against falling rain; undamaged by the formation of ice on the enclosure. | Indoor or outdoor use; provides a degree of protection against rain and snow; undamaged by the external formation of ice on the enclosure. |
| **Type 4** | Enclosures are intended for indoor or outdoor use primarily to provide a degree of protection against windblown dust and rain, splashing water, and hose directed water; undamaged by the formation of ice on the enclosure. | Either indoor or outdoor use to provide a degree of protection against falling rain, splashing water, and hose-directed water; undamaged by the formation of ice on the enclosure. | Indoor or outdoor use; provides a degree of protection against rain, snow, windblown dust, splashing and hose-directed water; undamaged by the external formation of ice on the enclosure. |
| **Type 4X** | Enclosures are intended for indoor or outdoor use primarily to provide a degree of protection against corrosion, windblown dust and rain, splashing water, and hose-directed water; undamaged by the formation of ice on the enclosure. | Either indoor or outdoor use to provide a degree of protection against falling rain, splashing water, and hose-directed water; undamaged by the formation of ice on the enclosure; resists corrosion. | Indoor or outdoor use; provides a degree of protection against rain, snow, windblow dust, splashing and hose-directed water; undamaged by the external formation of ice on the enclosure; resists corrosion. |
| **Type 6** | Enclosures are intended for use indoors or outdoors where occasional submersion is encountered, limited depth, undamaged by the formation of ice on the enclosure. | Indoor or outdoor use to provide a degree of protection against entry of water during temporary submersion at a limited depth; undamaged by the external formation of ice on the enclosure. | Indoor or outdoor use; provides a degree of protection against the entry of water during temporary submersion at a limited depth. Undamaged by the external formation of ice on the enclosure; resists corrosion. |
| **Type 12** | Enclosures are intended for indoor use primarily to provide a degree of protection against dust, falling dirt, and dripping noncorrosive liquids. | Indoor use to provide a degree of protection against dust, dirt, fiber flyings, dripping water, and external condensation of noncorrosive liquids. | Indoor use; provides a degree of protection against circulating dust, lint, fibers, and flyings; dripping and light splashing of non-corrosive liquids; not provided with knockouts. |
| **Type 12K** | Enclosures with knockouts are intended for indoor use primarily to provide a degree of protection against dust, falling dirt, and dropping noncorrosive liquids. | Indoor use to provide a degree of protection against dust, dirt, fiber flyings, dripping water, and external condensation of noncorrosive liquids. Knockouts located in the top or bottom walls, or both. | Indoor use; provides a degree of protection against circulating dust, lint, fibers and flyings; dripping and light splashing of non-corrosive liquids; provided with knockouts. |
| **Type 13** | Enclosures are intended for indoor use primarily to provide a degree of protection against dust, spraying of water, oil, and noncorrosive coolant. | Indoor use to provide a degree of protection against lint, dust seepage, external condensation and spraying of water, oil, and noncorrosive liquids. | Indoor use; provides a degree of protection against circulating dust, lint, fibers, and flyings; seepage and spraying of non-corrosive liquids, including oils and coolants. |

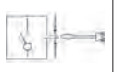
*NFPA 70 (National Electric Code) defines new Type 3RX as providing the same degree of protection as Type 3R, with the addition of protection against corrosive agents.

Data is subject to change without notice.

# Appendix A

## Technical Information

### IEC Enclosure Ratings
### First Numeral

| Protection Against Ingress of Solid Objects | | Protection of Persons Against Access to Hazardous Parts with: | Examples |
|---|---|---|---|
| IP | Requirements | | |
| 0 | No protection. | Non-Protected |  |
| 1 | Full penetration of 50mm diameter sphere not allowed. Contact with hazardous parts | Back of Hand |  |
| 2 | Full penetration of 12.5mm diameter sphere not allowed. The jointed test finger shall have adequate clearance from hazardous parts. | Finger |  |
| 3 | The access probe of 2.5mm diameter shall not penetrate. | Tool |  |
| 4 | The access probe of 1.0mm diameter shall not penetrate. | Wire |  |
| 5 | Limited ingress of dust permitted (no harmful deposit). | Wire |  |
| 6 | Totally protected against ingress of dust. | Wire |  |

### Second Numeral

| Protection Against Harmful Ingress of Water | | Protection from Water: | Examples |
|---|---|---|---|
| IP | Requirements | | |
| 0 | No protection. | Non-Protected |  |
| 1 | Protected against vertically falling drops of water. Limited ingress permitted. | Vertically Dripping |  |
| 2 | Protected against vertically falling drops of water with enclosure tilted 15° from the vertical. Limited ingress permitted. | Dripping up to 15° from the Vertical |  |
| 3 | Protected against sprays to 60° from the vertical. Limited ingress permitted. | Limited Spraying |  |
| 4 | Protected against water splashed from all directions. Limited ingress permited. | Splashing from all Directions |  |
| 5 | Protected against jets of water. Limited ingress permitted. | Hosing Jets from all Directions |  |
| 6 | Protected against strong jets of water. Limited ingress permitted. | Strong Hosing Jets from all Directions |  |
| 7 | Protected against the effects of immersion between 15cm and 1m. | Temporary Immersion |  |
| 8 | Protected against long periods of immersion under pressure. | Continuous Immersion |  |

### Additional Letter (Optional)

| Protection Against Ingress of Solid Objects | | Protection of Persons Against Access to Hazardous Parts with: | Example |
|---|---|---|---|
| IP | Requirements | | |
| A (For use with first numeral 0) | Penetration of 50mm diameter sphere up to | Back of Hand |  |
| B (For use with first numerals 0 and 1) | Test finger penetration to a maximum of 80mm must not contact | Finger |  |
| C (For use with first numerals 1 and 2) | Wire of 2.5mm diameter x 10mm long must not contact hazardous | Tool |  |
| D (For use with first numerals 2 and 3) | Wire of 1.0mm diameter x 100mm long must not contact hazardous | Wire |  |



Data is subject to change without notice.

## Technical Information

### Motor Current Ratings

| Horsepower | 60Hz AC Induction Motor | | | | | |
|---|---|---|---|---|---|---|
| | Single Phase | | Three Phase | | | |
| | 115V | 230V | 200V | 230V | 460V | 575V |
| 1/6 | 4.4 | 2.2 | - | - | - | - |
| 1/4 | 5.8 | 2.9 | - | - | - | - |
| 1/3 | 7.2 | 3.6 | - | - | - | - |
| 1/2 | 9.8 | 4.9 | 2.5 | 2.2 | 1.1 | 0.9 |
| 3/4 | 13.8 | 6.9 | 3.7 | 3.2 | 1.6 | 1.3 |
| 1 | 16.0 | 8.0 | 4.8 | 4.2 | 2.1 | 1.7 |
| 1 1/2 | 20.0 | 10.0 | 6.9 | 6.0 | 3.0 | 2.4 |
| 2 | 24.0 | 12.0 | 7.8 | 6.8 | 3.4 | 2.7 |
| 3 | 34.0 | 17.0 | 11.0 | 9.6 | 4.8 | 3.9 |
| 5 | 56.0 | 28.0 | 17.5 | 15.2 | 7.6 | 6.1 |
| 7 1/2 | 80.0 | 40.0 | 25.0 | 22.0 | 11.0 | 9.0 |
| 10 | 100 | 50.0 | 32.0 | 28.0 | 14.0 | 11.0 |
| 15 | 135 | 68.0 | 48.0 | 42.0 | 21.0 | 17.0 |
| 20 | - | 88.0 | 62.0 | 54.0 | 27.0 | 22.0 |
| 25 | - | 110 | 78.0 | 68.0 | 34.0 | 27.0 |
| 30 | - | 136 | 92.0 | 80.0 | 40.0 | 32.0 |
| 40 | - | 176 | 120 | 104 | 52.0 | 41.0 |
| 50 | - | 216 | 150 | 130 | 65.0 | 52.0 |
| 60 | - | - | 177 | 154 | 77.0 | 62.0 |
| 75 | - | - | 221 | 192 | 96.0 | 77.0 |
| 100 | - | - | 285 | 248 | 124 | 99.0 |
| 125 | - | - | 359 | 312 | 156 | 125 |
| 150 | - | - | 414 | 360 | 180 | 144 |
| 200 | - | - | 552 | 480 | 240 | 192 |
| 250 | - | - | 692 | 602 | 302 | 242 |
| 300 | - | - | - | - | 361 | 289 |
| 350 | - | - | - | - | 414 | 336 |
| 400 | - | - | - | - | 477 | 382 |
| 500 | - | - | - | - | 590 | 472 |

The information in this table was extracted from Table 430.248 and 430.250 of the NEC.

The following values of full load currents are for motors running at usual speeds and motors with normal torque characteristics. The voltages listed are rated motor voltages. The currents listed shall be permitted for system voltage ranges of 110-120, 220-240, 440-480 and 550-600 Volts.

## Technical Information

### NEMA Ratings – CWM Series contactors to NEMA Comparison

| NEMA Ratings | WEC Contactor Series | Maximum Horsepower (UL/CSA) | | | | | |
|---|---|---|---|---|---|---|---|
| | | Single Phase | | Three Phase | | | |
| | | 115V | 230V | 200V | 230V | 460V | 575V |
| 00 | CWM9N | 1/3 | 1 | 1 1/2 | 1 1/2 | 2 | 2 |
| | CWM9 | 1/2 | 1 1/2 | 3 | 3 | 5 | 7 1/2 |
| | CWM12 | 3/4 | 2 | 3 | 3 | 7 1/2 | 10 |
| 0 | CWM18N | 1 | 2 | 3 | 3 | 5 | 5 |
| | CWM18 | 1 | 3 | 5 | 5 | 10 | 15 |
| | CWM25 | 1 1/2 | 3 | 5 | 7 1/2 | 15 | 15 |
| 1 | CWM32N | 2 | 3 | 7 1/2 | 7 1/2 | 10 | 10 |
| | CWM32 | 2 | 5 | 10 | 10 | 20 | 25 |
| | CWM40 | 3 | 5 | 10 | 10 | 25 | 25 |
| 2 | CWM50N | 3 | 7 1/2 | 10 | 15 | 25 | 25 |
| | CWM50 | 3 | 7 1/2 | 15 | 15 | 30 | 40 |
| | CWM65 | 5 | 10 | 20 | 20 | 40 | 50 |
| | CWM80 | 5 | 15 | 20 | 25 | 50 | 60 |
| 3 | CWM95N | 7 1/2 | 15 | 25 | 30 | 50 | 50 |
| | CWM95 | 7 1/2 | 15 | 25 | 30 | 60 | 75 |
| | CWM105 | 10 | 20 | 30 | 40 | 75 | 75 |
| 4 | CWM150N | - | - | 40 | 50 | 100 | 100 |
| | CWM112 | - | - | 40 | 50 | 100 | 100 |
| | CWM150 | - | - | 50 | 60 | 125 | 150 |
| | CWM180 | - | - | 60 | 75 | 150 | 200 |
| 5 | CWM300N | - | - | 75 | 100 | 200 | 200 |
| | CWM250 | - | - | 75 | 100 | 200 | 250 |

This table is for comparison & reference only. CWM Series contactors are not NEMA labeled.

### How to dimension control components in a starter

| | Across-the-Line Starter | Reversing Starter | Wye-Delta Starter | Autotransformer Starter tap 65% | Autotransformer Starter tap 80% |
|---|---|---|---|---|---|
| Contactor - K1 | FLA | FLA | 0.58 x FLA | FLA | FLA |
| Contactor - K2 | - | - | 0.58 x FLA | 0.42 x FLA | 0.64 x FLA |
| Contactor - K3 | - | - | 0.33 x FLA | 0.23 x FLA | 0.16 x FLA |
| Overload Relay - FT | FLA | FLA | 0.58 x FLA | FLA | FLA |
| Manual Motor Protector - MPW25 | FLA | | | | |

This table is for comparison & reference only.

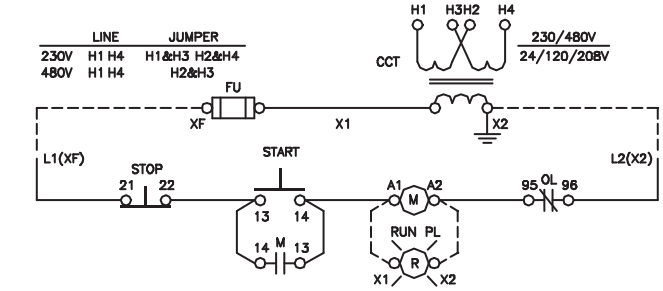


Data is subject to change without notice.

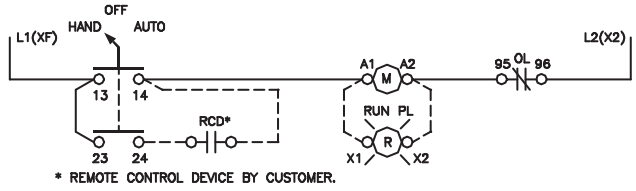
# Technical Information

## Electrical Wiring Diagrams

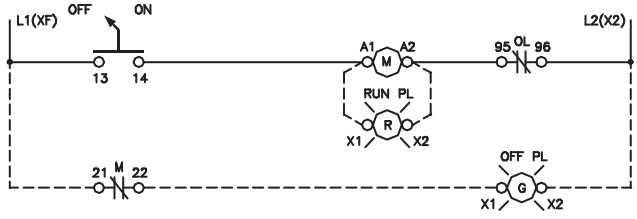
### Motor Starters Non-Reversing



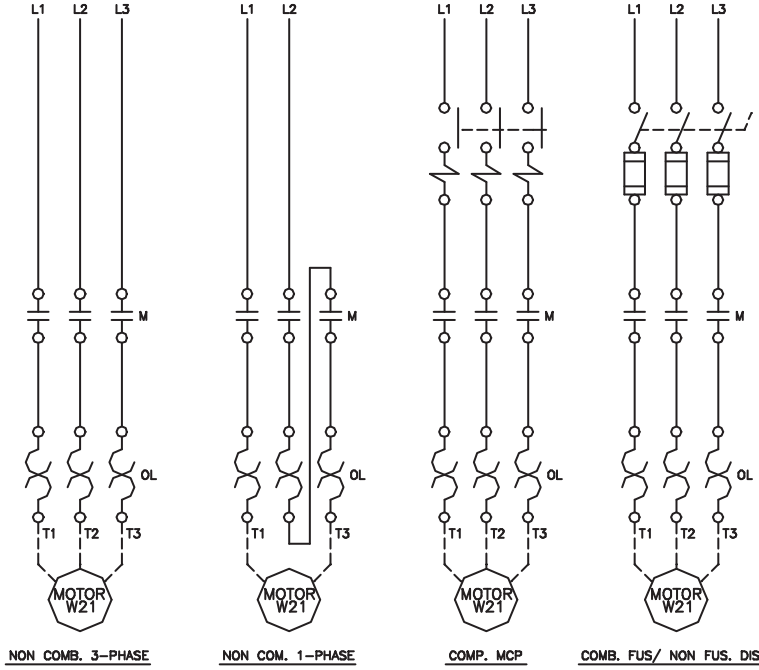

START–STOP PUSHBUTTONS




HAND–OFF–AUTO SELECTOR SWITCH



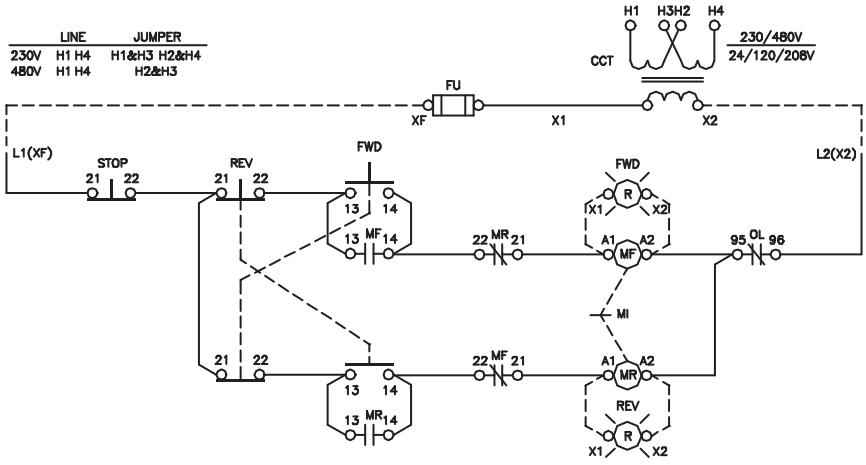

OFF–ON SELECTOR SWITCH



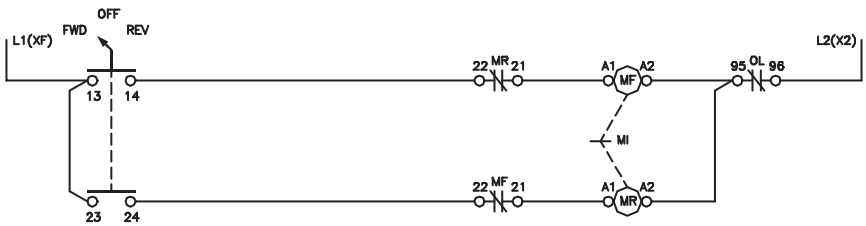
## Technical Information

## Electrical Wiring Diagrams

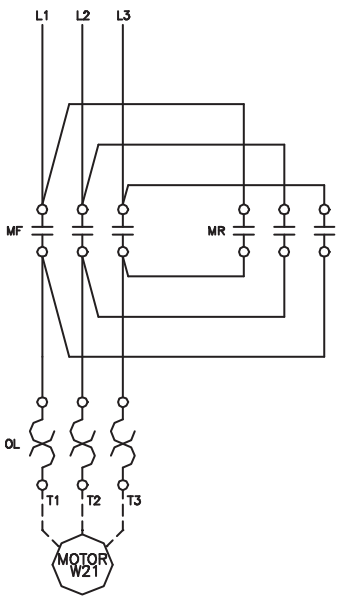
### Motor Starters Reversing (1-3PH.)



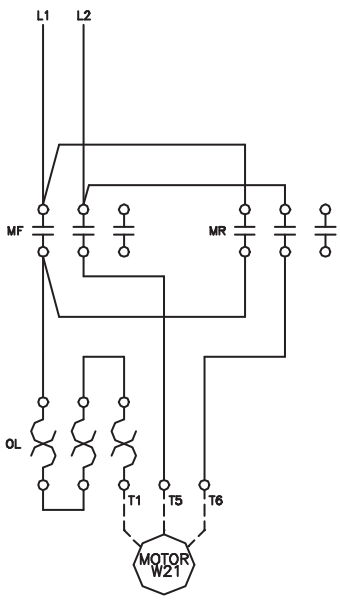

FORWARD–OFF–REVERSE PUSHBUTTONS




FORWARD–OFF–REVERSE SELECTOR SWITCH




NON COMB. 3–PHASE




NON COMBINATION
1–PHASE–RECONNECTABLE WINDING
THREE LEAD MOTOR

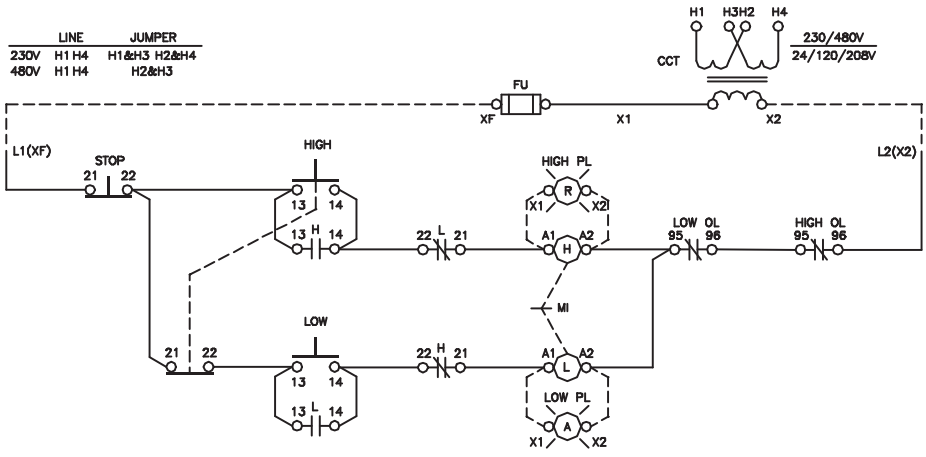


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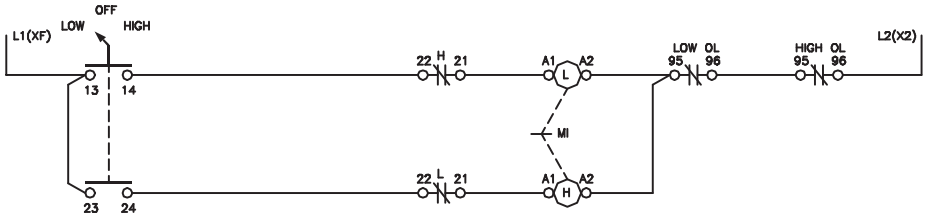
# Technical Information

## Electrical Wiring Diagrams

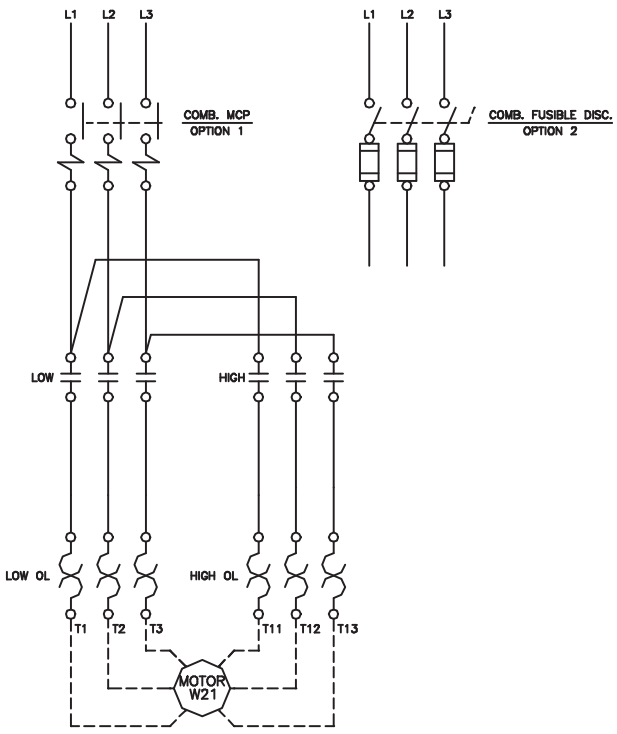
### Multi-Speed Two Separate Windings




STOP–LOW–HIGH PUSHBUTTON



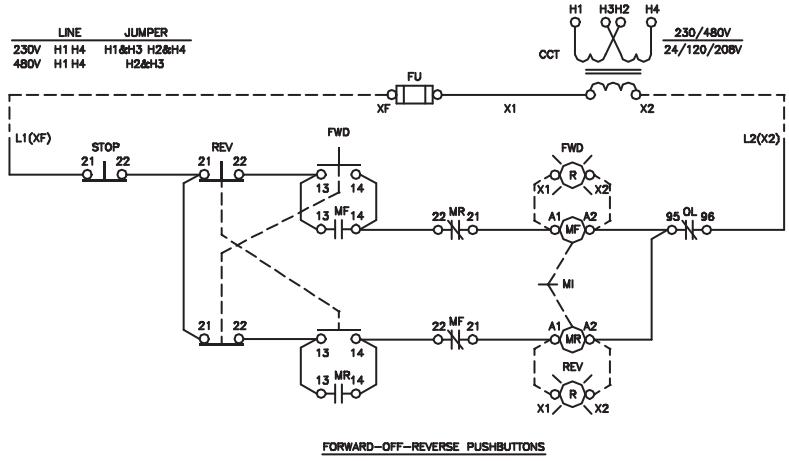

LOW–OFF–HIGH SELECTOR SWITCH



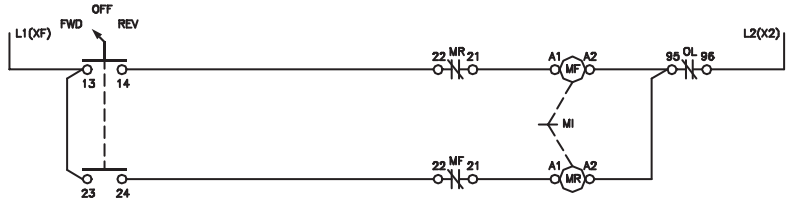
# Technical Information

## Electrical Wiring Diagrams

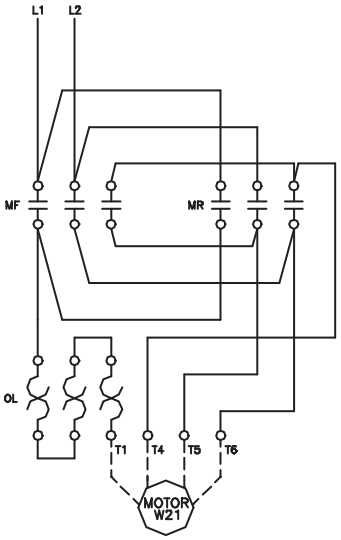
### Motor Starters Reversing (1PH)



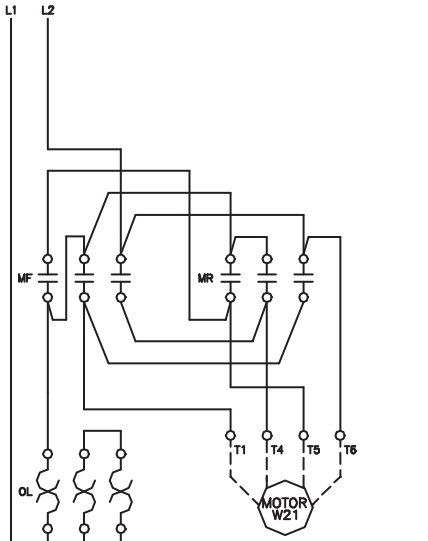

FORWARD–OFF–REVERSE PUSHBUTTONS




FORWARD–OFF–REVERSE SELECTOR SWITCH




NON COMBINATION
SINGLE PHASE–SERIES WINDING
FOUR LEAD REPULSION INDUCTION MOTOR




NON COMBINATION
SINGLE PHASE–PARALLEL WINDING
FOUR LEAD CAPACITOR OR SPLIT PHASE MOTOR

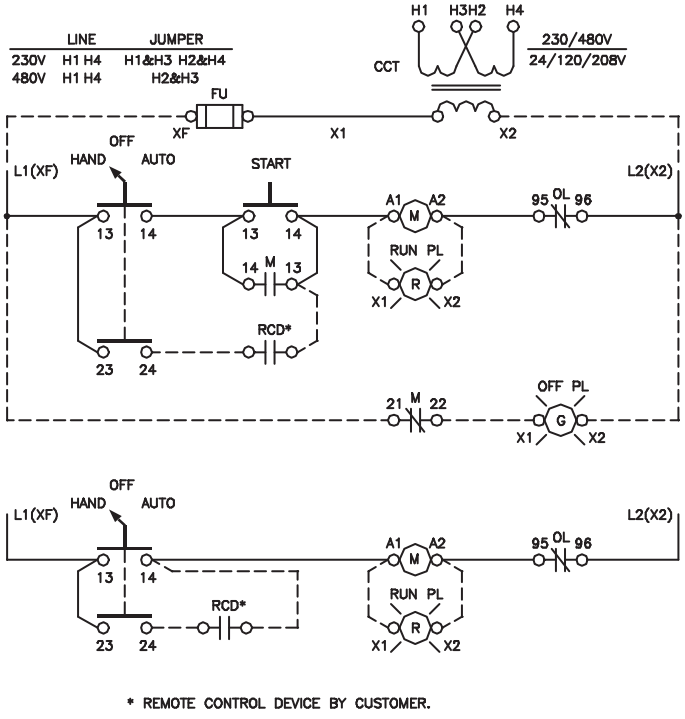


Data is subject to change without notice.

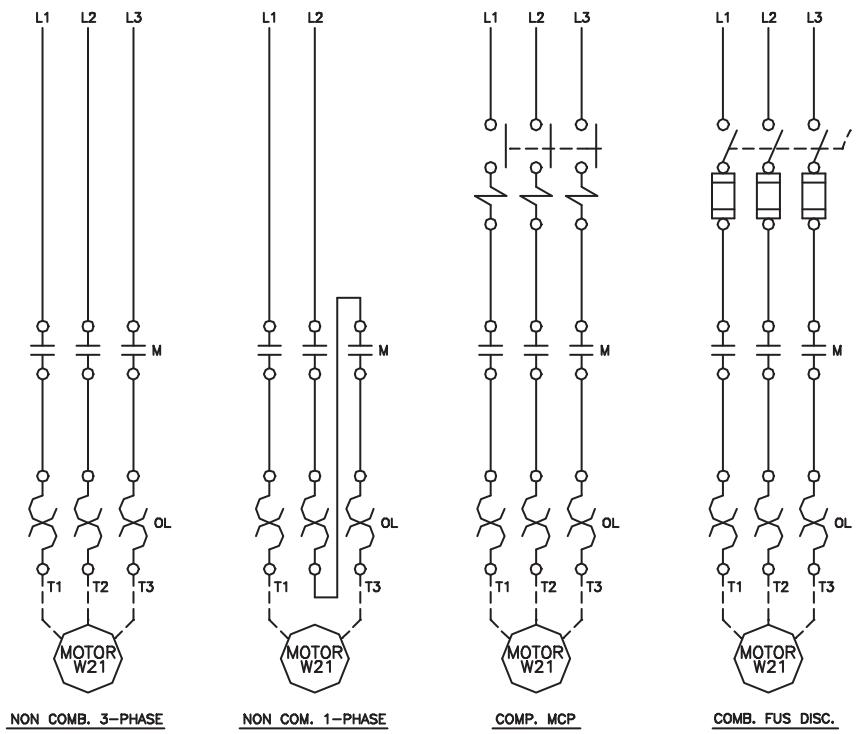
# Technical Information

## Electrical Wiring Diagrams

### Pump Control Panels



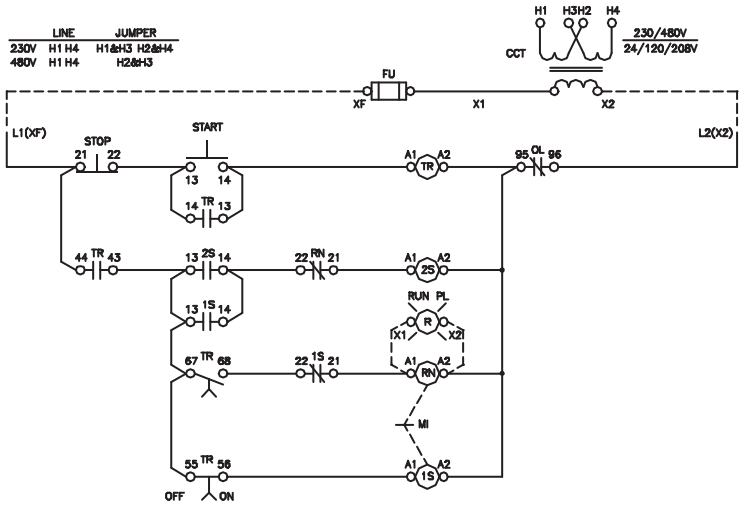

* REMOTE CONTROL DEVICE BY CUSTOMER.

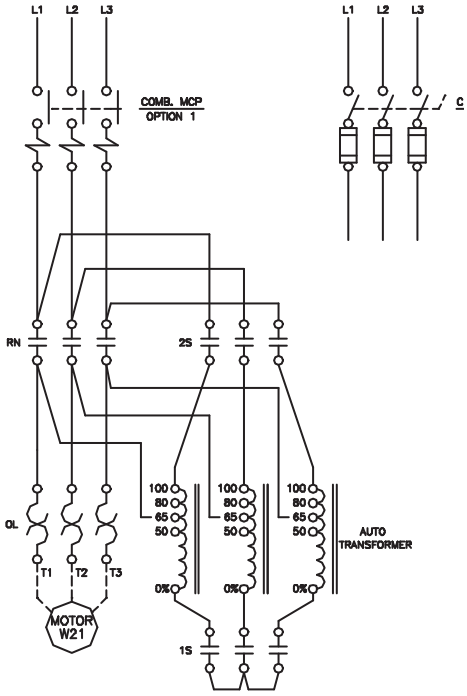


## Technical Information

## Electrical Wiring Diagrams

### Reduced Voltage Starters – Autotransformer



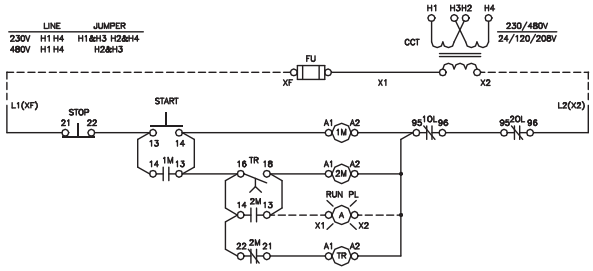


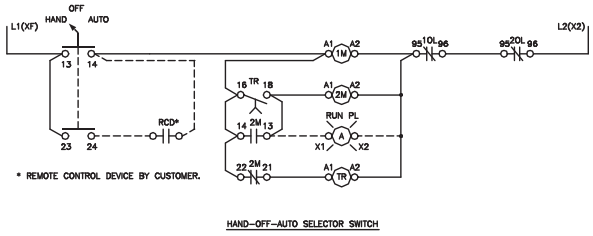

Data is subject to change without notice.

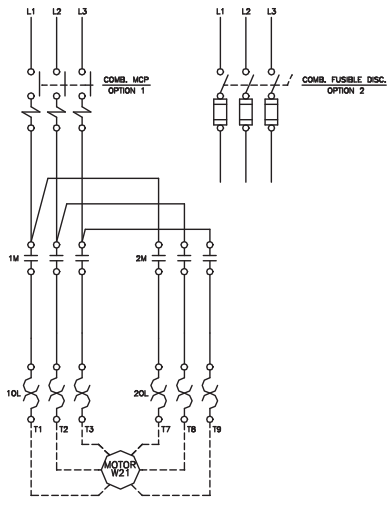
# Technical Information

# Electrical Wiring Diagrams

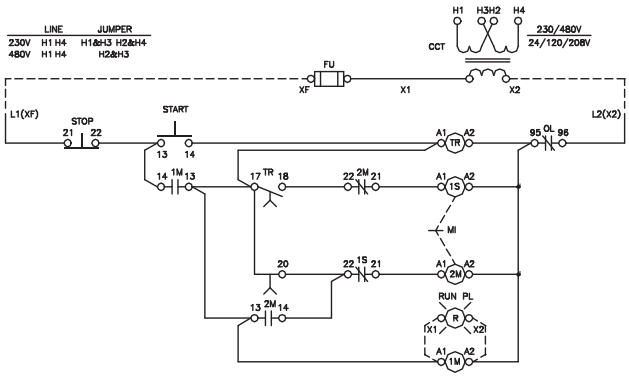
## Reduced Voltage Starters – Part Winding

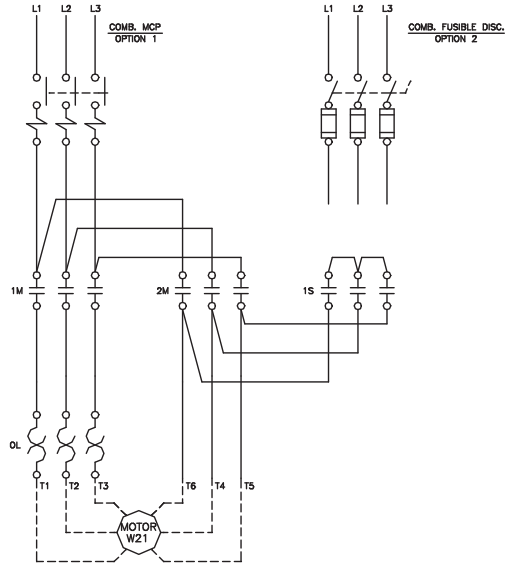



## Reduced Voltage Starters – Wye Delta



# Appendix B

## My Notes:



Data is subject to change without notice.

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Data is subject to change without notice.

## My Notes:

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Data is subject to change without notice.