

## Global Modular Fuse Holders CH Series



Insert Class CC fuse with the rejection feature facing the top.

### CH Series

The CH Series of modular fuse holders is designed to accommodate a multitude of fuses from around the world, including North American Class-CC, Midget, Class gR, aR HSF, PV Series, and IEC Industrial Cylindrical (Class gG and aM) in four physical sizes: 8x32, 10x38, 14x51 and 22x58mm.

Products are manufactured in accordance with IEC 60269-1 or IEC 60269-2. cURus and cULus compliance as indicated in the part number tables.

#### Key features and benefits include:

- Multiple-pole configurations
- Finger-safe protection
- Lockout/tagout feature for added safety
- Optional "open fuse" indication
- 14x51 & 22x58 configurations are available with optional microswitches for remote "open fuse" indication, pre-breaking and fuse presence.
- Self-extinguishable UL 94V0 rated polyester material
- Multi-phase connections available for ganging poles
- Accepts wire security tags

## Modular Fuse Holder Selection Table (10 x 38 and CC)

### Part Numbers

| Series Size        | Catalog Numbers |               | Max Voltage & Current                          | UL  | IEC | Phase Configuration | No. of 17.5mm Modules* | Box Qty. | Terminal Rating  | SCCR Rating                                     | Cooper Bussmann Fuses                                        |
|--------------------|-----------------|---------------|------------------------------------------------|-----|-----|---------------------|------------------------|----------|------------------|-------------------------------------------------|--------------------------------------------------------------|
|                    | W/O Indication  | W/Indication  |                                                |     |     |                     |                        |          |                  |                                                 |                                                              |
| CHCC Class CC      | CHCC1D          | CHCC1DI**     | UL                                             | ††  |     | 1-pole              | 1                      | 12       | 75° Cu Wire Only | 200kA                                           | LP-CC, FNQ-R, KTK-R                                          |
|                    | CHCC2D          | CHCC2DI**     | 600Vac/dc, 30A                                 | ††  |     | 2-pole              | 2                      | 6        |                  |                                                 |                                                              |
|                    | CHCC3D          | CHCC3DI**     |                                                | ††  |     | 3-pole              | 3                      | 4        |                  |                                                 |                                                              |
|                    | —               | CHCC1DI-48*** | UL 48Vdc, 30A                                  | ††  |     | 1-pole              | 1                      | 12       |                  |                                                 |                                                              |
| CHPV               | CHPV1           | CHPV1I**      | UL 1000Vdc, 30A<br>IEC 1000Vdc, 32A (3.5 Watt) | ††† | •   | 1-pole              | 1                      | 12       | 75° Cu Wire Only | 33kA                                            | PV Series                                                    |
| CHM 10x38 & Midget | CHM1D           | CHM1DI**      | UL                                             | †   | •   | 1-pole              | 1                      | 12       | 75° Cu Wire Only | Rating varies depending on fuse used in holder. | FNQ, KLM, FNM, KTK, BAF, FWA, DCM, C10 Series, AGU, BAN, FWC |
|                    | CHM1DNX         | —             | 600Vac/dc, 30A                                 |     | •   | 1 Neutral Pole      | 1                      | 12       |                  |                                                 |                                                              |
|                    | CHM1DN          | CHM1DNI**     |                                                |     | •   | 1-pole + Neutral    | 2                      | 6        |                  |                                                 |                                                              |
|                    | CHM2D           | CHM2DI**      | IEC 690Vac, 32A                                | †   | •   | 2-pole              | 2                      | 6        |                  |                                                 |                                                              |
|                    | CHM3D           | CHM3DI**      | (3 Watt)                                       | †   | •   | 3-pole              | 3                      | 4        |                  |                                                 |                                                              |
|                    | CHM3DN          | CHM3DNI**     |                                                |     | •   | 3-pole + Neutral    | 4                      | 3        |                  |                                                 |                                                              |
|                    | CHM4D           | CHM4DI**      |                                                |     | •   | 4-pole              | 4                      | 3        |                  |                                                 |                                                              |
|                    | —               | CHM1DI-48***  | UL 48Vdc, 30A<br>IEC 48Vdc, 32A (3 Watt)       | †   | •   | 1-pole              | 1                      | 12       |                  |                                                 |                                                              |

### MFH Wire Range and Torque - CH Series: CHCC, CHM & CHPV

| Wire Range                               | Conductor Type<br>75°C Cu Wire<br>Only | Conductors | Torque                |
|------------------------------------------|----------------------------------------|------------|-----------------------|
| 18-12 AWG<br>(0.8 - 4.0mm <sup>2</sup> ) | Solid/Stranded                         | Single     | 20 lb-in<br>2.3 N•m   |
| 10 AWG<br>(5.0mm <sup>2</sup> )          | Solid                                  | Single     | 25 lb-in<br>(2.8 N•m) |
| 10-8 AWG<br>(5.0 - 8.0mm <sup>2</sup> )  | Stranded                               |            |                       |
| 18-14 AWG<br>(0.8 - 2.5mm <sup>2</sup> ) | Solid                                  | Dual       |                       |
| 18-10 AWG<br>(0.8 - 5.0mm <sup>2</sup> ) | Stranded                               |            |                       |

† UL Recognized (cURus)

†† UL Listed (cULus)

††† UL Recognized, Standard 4248-1

\*Holder width as compared to standard 17.5mm module, i.e., 1 = 17.5mm 2 = 35mm.

\*\*90V minimum required for illumination

\*\*\*12V minimum required for illumination

## Modular Fuseholder Selection Table (8x32, 14x51, and 22x58)

### Part Numbers

| Series/<br>Size | Catalog Numbers |              | Max<br>Voltage<br>& Current                                            | IEC | UL | Phase Configuration            | No. of<br>17.5mm<br>Modules* | Box<br>Qty. | Wire Range                       | Maximum<br>Torque   |
|-----------------|-----------------|--------------|------------------------------------------------------------------------|-----|----|--------------------------------|------------------------------|-------------|----------------------------------|---------------------|
|                 | W/O Indication  | W/Indication |                                                                        |     |    |                                |                              |             |                                  |                     |
| CH08<br>8X32    | CH081D          | CH081DI      | IEC<br>400Vac<br>25A                                                   | •   |    | 1-pole                         | 1                            | 12          | 1-16mm <sup>2</sup> (18-6 AWG)   | 2.5 N•m (22in-lb)   |
|                 | CH081DNX        | -            |                                                                        | •   |    | 1 Neutral Pole                 | 1                            | 12          |                                  |                     |
|                 | CH081DNS        | CH081DNSI    |                                                                        | •   |    | 1-pole + Neutral               | 1                            | 12          | 1-10mm <sup>2</sup> (18-8 AWG)   | 2.0 N•m (17.5in-lb) |
|                 | CH081DN         | CH081DNI     |                                                                        | •   |    | 1-pole + Neutral               | 2                            | 6           |                                  |                     |
|                 | CH082D          | CH082DI      |                                                                        | •   |    | 2-pole                         | 2                            | 6           | 1-16mm <sup>2</sup> (18-6 AWG)   | 2.5 N•m (22in-lb)   |
|                 | CH083D          | CH083DI      |                                                                        | •   |    | 3-pole                         | 3                            | 4           |                                  |                     |
|                 | CH083DNS        | CH083DNSI    |                                                                        | •   |    | 3-pole + Neutral               | 3                            | 4           |                                  |                     |
|                 | CH083DN         | CH083DNI     |                                                                        | •   |    | 3-pole + Neutral               | 4                            | 3           |                                  |                     |
|                 | CH084D          | CH084DI      |                                                                        | •   |    | 4-pole                         | 4                            | 3           |                                  |                     |
|                 |                 |              |                                                                        | •   |    |                                |                              |             |                                  |                     |
| CH14<br>14X51   | CH141D          | CH141DICH1   | UL/cURus<br>600Vac/dc,<br>40A<br>(5 Watt)<br>IEC<br>690Vac,<br>50A     | •   | †  | 1-pole                         | 1.5                          | 6           | 2.5-16mm <sup>2</sup> (14-6 AWG) | 3.0 N•m (26in-lb)   |
|                 | CH141DMS        | -14X51       |                                                                        | •   |    | 1-pole + Microswitch           | 1.5                          | 6           |                                  |                     |
|                 | CH141DNX        | -            |                                                                        | •   |    | 1 Neutral Pole                 | 1.5                          | 6           |                                  |                     |
|                 | CH141DN         | CH141DNI     |                                                                        | •   |    | 1-pole + Neutral               | 3                            | 3           |                                  |                     |
|                 | CH142D          | CH142DI      |                                                                        | •   | †  | 2-pole                         | 3                            | 3           |                                  |                     |
|                 | CH143D          | CH143DI      |                                                                        | •   | †  | 3-pole                         | 4.5                          | 2           |                                  |                     |
|                 | CH143DMS        | -            |                                                                        | •   |    | 3-pole + Microswitch           | 4.5                          | 2           |                                  |                     |
|                 | CH143DN         | CH143DNI     |                                                                        | •   |    | 3-pole + Neutral               | 6                            | 1           |                                  |                     |
|                 | CH143DNMS       | -            |                                                                        | •   |    | 3-pole + Neutral + Microswitch | 6                            | 1           |                                  |                     |
|                 | CH144D          | CH144DI      |                                                                        | •   |    | 4-pole                         | 6                            | 1           |                                  |                     |
| CH22<br>22X58   | CH221B          | Not          | UL/cURus<br>600Vac/dc,<br>100A<br>(9.5 Watt)<br>IEC<br>690Vac,<br>125A | •   | †  | 1-pole                         | 2                            | 6           | 2.5-50mm <sup>2</sup> (14-1 AWG) | 4.0 N•m (35in-lb)   |
|                 | CH221BMS        | Available    |                                                                        | •   |    | 1-pole + Microswitch           | 2                            | 6           |                                  |                     |
|                 | CH221BNX        | with         |                                                                        | •   |    | 1 Neutral Pole                 | 2                            | 6           |                                  |                     |
|                 | CH221BN         | local        |                                                                        | •   |    | 1-pole + Neutral               | 4                            | 3           |                                  |                     |
|                 | CH222B          | neon         |                                                                        | •   | †  | 2-pole                         | 4                            | 3           |                                  |                     |
|                 | CH223B          | indication   |                                                                        | •   | †  | 3-pole                         | 6                            | 2           |                                  |                     |
|                 | CH223BMS        | (remote      |                                                                        | •   |    | 3-pole + Microswitch           | 6                            | 2           |                                  |                     |
|                 | CH223BN         | microswitch  |                                                                        | •   | †  | 3-pole + Neutral               | 8                            | 1           |                                  |                     |
|                 | CH223BNMS       | only)        |                                                                        | •   |    | 3-pole + Neutral + Microswitch | 8                            | 1           |                                  |                     |
|                 | CH224B          |              |                                                                        | •   |    | 4-pole                         | 8                            | 1           |                                  |                     |

† UL Recognized (cURus)

†† UL Listed (cULus)

\*Holder width as compared to standard, i.e., 1 = 17.5mm module 2 = 35mm.

\*\*90V minimum required for illumination

### Recommended Cooper Bussmann™ Fuses:

**8x32** IEC Cylindrical - C08 Series

**10x38** North American Class CC Fuses - LP-CC, FNQ-R, KTK-R  
Fuses - FNQ, KTK, AGU, KLM, BAF, FNM, FWA, FWC, C10 Series, PV Series

**14x51** Fuses - FWX, FWH, FWP & NON, C14 Series

**22x58** Fuses - FWP, C22 Series

### Manual Multi-phase Construction (8x32, 10x38, 14x51mm)

Additional poles can be added by using the accessories shown on page 2 of this data sheet. The following components are required for each additional pole, up to a maximum of 4-poles.

### Part Number Description

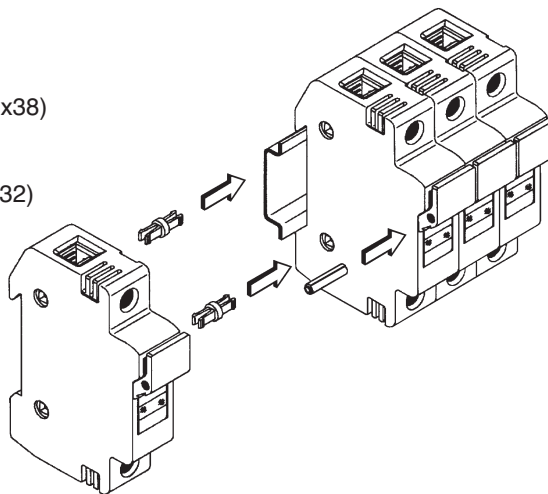
JV-L Multi-pole Connector Kit (10x38)

CH810-HP 8x32 Handle Pin

CH14-HP 14x51mm Handle Pin

AL-D Multi-pole Connector Kit (8x32)

**Contact Cooper Bussmann Application Engineering for more information.**



**Accessories for use with the new CH Series of Modular Fuseholders**  
 (For diagram of multi-phase construction, see page 2)

| Accessory                           | For Use with Fuse Holders                 | Part Number             | No. of Poles | Box Quantity |
|-------------------------------------|-------------------------------------------|-------------------------|--------------|--------------|
| Multi-Phase Connection Links        | CH08 and CH14 Series                      | AL-D                    | —            | 12           |
| Multi-Phase Connection Kit*         | CHM and CHCC Series                       | JV-L                    | —            | —            |
| Multi-Phase Handle Pins             | CH08 Series<br>CH14 Series                | CH810-HP<br>CH14-HP     | —<br>—       | 12           |
| Neutral Links                       | CH08 Series<br>CH14 Series<br>CH22 Series | C08NL<br>C14NL<br>C22NL | —<br>—<br>—  | 10           |
| Operated-Fuse Micro-Switches        | CH141 Series<br>CH143 Series              | CH14MS-1D<br>CH14MS-3D  | 1<br>3       | 5<br>2       |
| PLC Module (see page 6 for details) | CHM and CHCC Series                       | CH-PLC†                 | 1            | 1            |
| IP20 Kit                            | CH22 Series                               | CH22IP20                | —            | 12           |
| Lock Support                        | CH22 Series                               | CH22LS                  | —            | 5            |

\*Kit contains 3-Spring pins and 6-connection links  
 †UL Listed (cULus)



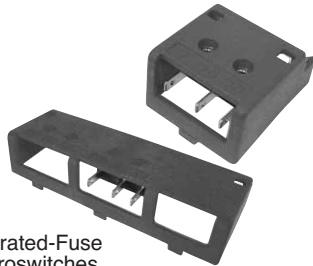
Multi-Phase  
 Connection Links



Neutral Links



Multi-Phase  
 Handle Pins



Operated-Fuse  
 Microswitches



Programmable Logic  
 Controller  
 (PLC)



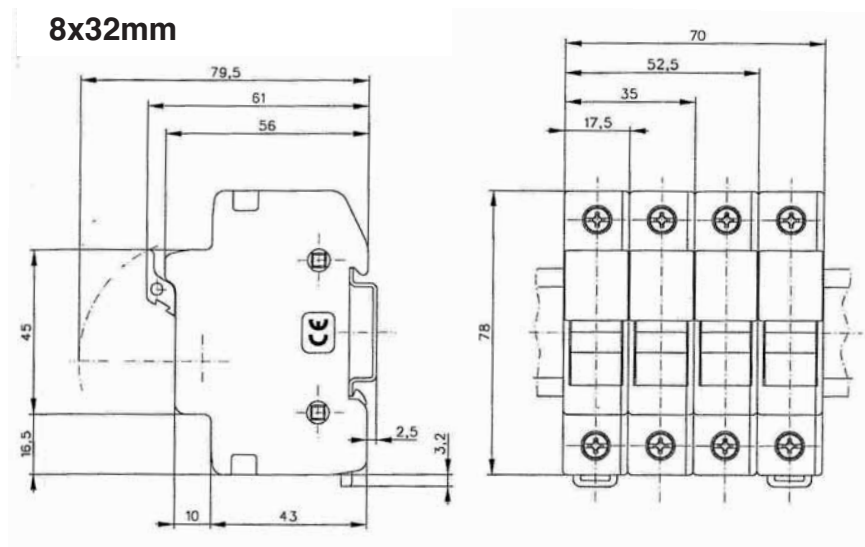
Lock Support



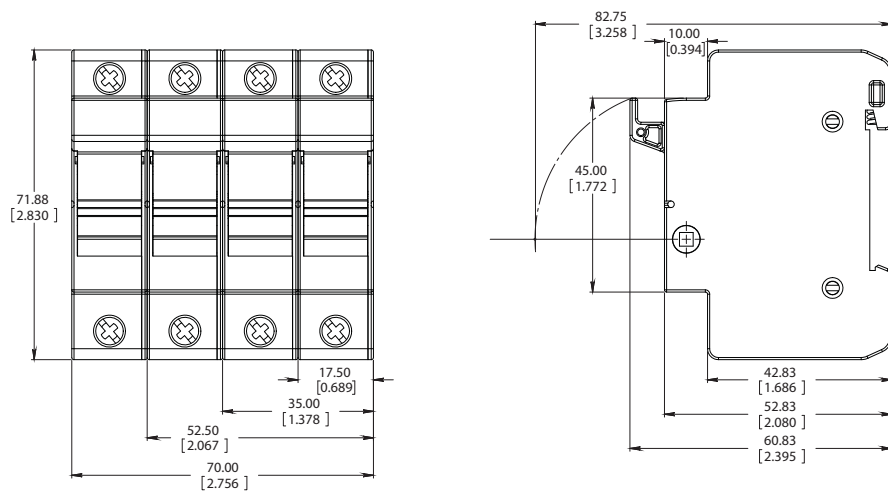
IP20 Kit

## Dimensions - mm (in)

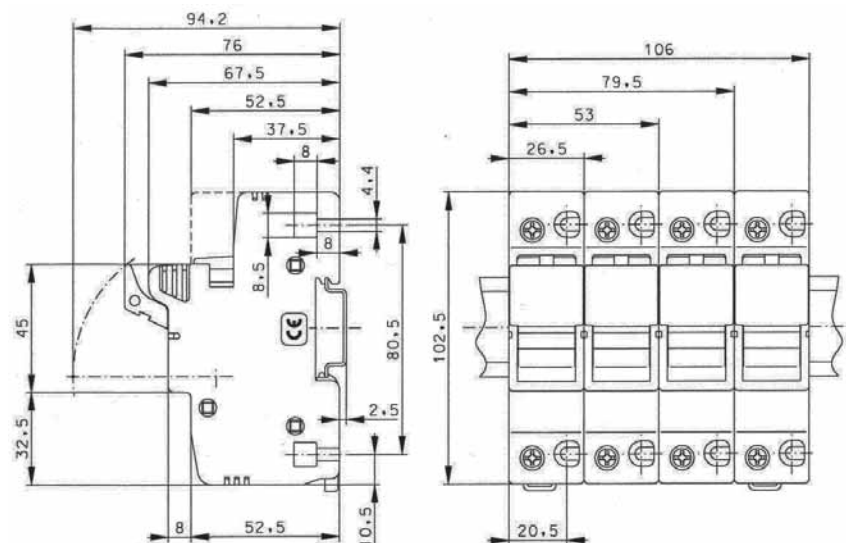
### 8x32mm



### 10x38mm

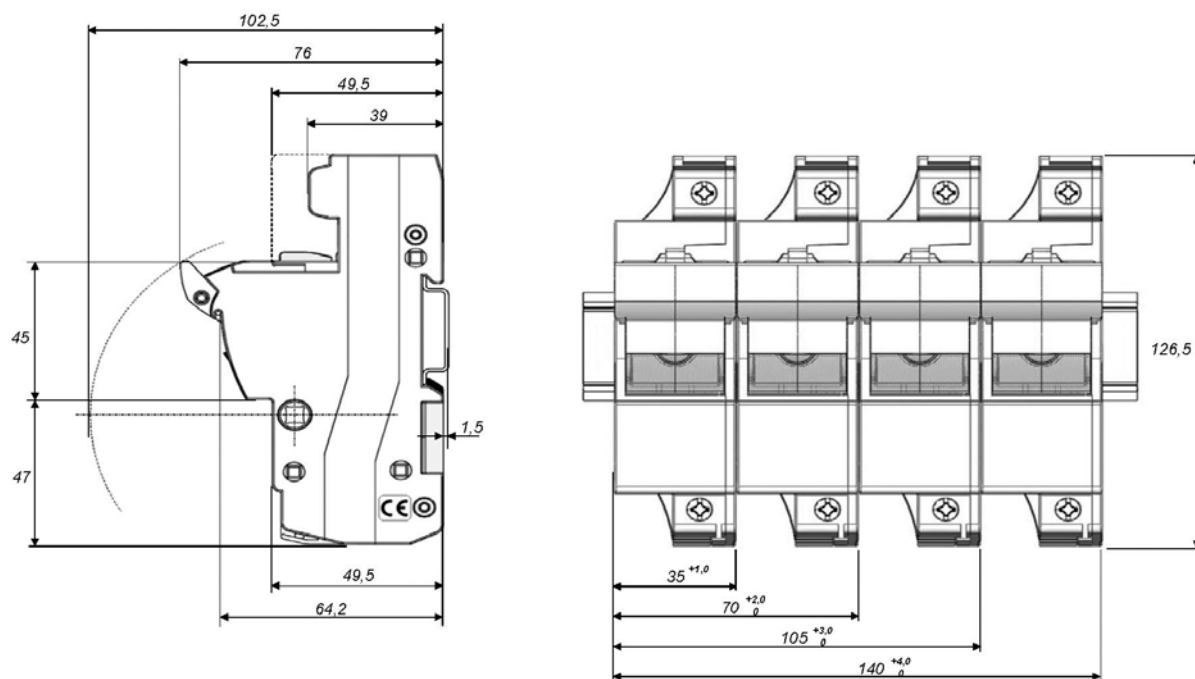


### 14x51mm



## Dimensions - mm (in)

### 22x58mm



### Using High Speed Fuses (Semiconductor Protection)

The CH Series of modular fuse holders may be used in conjunction with Class gR and aR high speed fuses. The continuous load current should not exceed that shown in the tables below for specific high speed fuse types/amp ratings so that the watts loss of the fuse does not exceed the watts loss capability of the holder. High speed fuses may also need to be derated based on specific application and ambient temperature.

#### CHM Series (10x38)

| High Speed Fuse | Maximum Continuous Amps | High Speed Fuse | Maximum Continuous Amps |
|-----------------|-------------------------|-----------------|-------------------------|
| FWA-5A10F       | 5                       | FWC-6A10F       | 6                       |
| FWA-10A10F      | 10                      | FWC-8A10F       | 8                       |
| FWA-15A10F      | 14                      | FWC-10A10F      | 10                      |
| FWA-20A10F      | 18                      | FWC-12A10F      | 12                      |
| FWA-25A10F      | 20                      | FWC-16A10F      | 15                      |
| FWA-30A10F      | 24                      | FWC-20A10F      | 16                      |
| -               | -                       | FWC-25A10F      | 19                      |
| -               | -                       | FWC-32A10F      | 21                      |

#### CH22 Series (22x58)

| High Speed Fuse | Maximum Continuous Amps |
|-----------------|-------------------------|
| FWP-20A22F      | 20                      |
| FWP-25A22F      | 25                      |
| FWP-32A22F      | 32                      |
| FWP-40A22F      | 40                      |
| FWP-50A22F      | 50                      |
| FWP-63A22F      | 58                      |
| FWP-80A22F      | 66                      |
| FWP-100A22F     | 78                      |

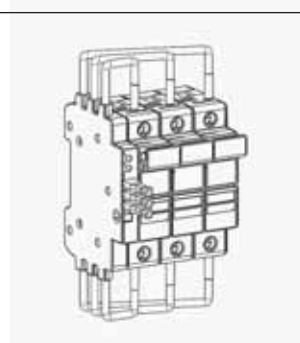
#### CH14 Series (14x51)

| High Speed Fuse | Maximum Continuous Amps | High Speed Fuse | Maximum Continuous Amps | High Speed Fuse | Maximum Continuous Amps | High Speed Fuse | Maximum Continuous Amps |
|-----------------|-------------------------|-----------------|-------------------------|-----------------|-------------------------|-----------------|-------------------------|
| FWX-5A14F       | 5                       | FWH-5A14F       | 5                       | FWP-5A14F       | 5                       | FWP-32A14F      | 27                      |
| FWX-10A14F      | 10                      | FWH-10A14F      | 10                      | FWP-10A14F      | 10                      | FWP-40A14F      | 32                      |
| FWX-15A14F      | 15                      | FWH-15A14F      | 14                      | FWP-15A14F      | 14                      | FWP-50A14F      | 38                      |
| FWX-20A14F      | 20                      | FWH-20A14F      | 18                      | FWP-20A14F      | 18                      | -               | -                       |
| FWX-25A14F      | 24                      | FWH-25A14F      | 21                      | FWP-25A14F      | 21                      | -               | -                       |
| FWX-30A14F      | 27                      | FWH-30A14F      | 22                      | FWP-30A14F      | 22                      | -               | -                       |

Please contact Cooper Bussmann Application Engineering for more information regarding high speed fuse application.

# Remote Fuse Monitoring Accessory – CH-PLC

UL Class CC, Midget and IEC 10x38 fuses



## Description

A resetable three-phase remote fuse monitor that integrates with a Programmable Logic Controller (PLC) or other monitoring and control equipment.

### Specifications:

- **Power Input:** 24Vdc / 5mA
- **Sensing Voltage:** 600V/30mA
- **Output Signals:** Digital 0Vdc (Low), 24Vdc (High)
  - 0Vdc Low – Fuse is good
  - 24Vdc High – Fuse has opened

When the fuse opens, the output signal is sent high and will remain high until the unit is reset

- **Rated Impulse Voltage:** 8kV
- **Local Indication:** Two distinct LEDs indicate unit power (green) and open fuse (red). Upon the replacement of the fuse, the actuation of the reset switch will reset the open fuse LED
- **Flammability Rating:** UL 94V0

### Wiring:

- For power, signal and ground connections use 22-24AWG (0.25mm<sup>2</sup>) 300V rated wire

### Emissions and Immunity Testing:

- Electrostatic Discharge IEC 61000-4-2
- Electrical Fast Transient/Burst IEC 6100-4-4
- Surge Immunity IEC61000-4-5

### Packaging:

- The CH-PLC is packaged individually
- A single unit monitors up to three phases
- Package includes 0.11" (2.8mm) quick connects for power, signal and ground connections

***De-energize all circuits before installing or removing any CH-PLC devices and follow all prescribed safety procedures.***

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