



# Compact Modular Fuse Holders

Products for Industrial, PV, IEC and UL Applications



The logo for Cooper Bussmann, featuring the word "COOPER" in a bold, black, sans-serif font above the word "Bussmann" in a larger, bold, black, sans-serif font. A red diagonal bar is positioned above the "COOPER" text.

Cooper Bussmann, a division of Cooper Industries, is the leading source of circuit protection solutions in the global marketplace. Cooper Bussmann products are approved for use around the world and meet agency requirements and international standards: IEC, VDE, DIN, UL, CSA, CCC, BS and others.

Cooper Bussmann global headquarters are in St Louis, Missouri (US) and the European headquarters are in Burton-on-the-Wolds, Leicestershire (UK).

Cooper Bussmann manufactures over 50,000 part numbers covering extensive circuit protection solutions for a wide range of applications: residential, industrial, motor protection, power conversion, distribution, telecommunications, electronics and automotive.

Cooper Bussmann has been a leading exponent in the design, development and manufacture of fuse links and their associated accessories for more than 90 years and has supplied fuse links to more than 90 countries worldwide.

The Cooper Bussmann team of specialist engineers plays a leading role in international standardisation of fuse links, offering comprehensive advice on selection and applications.

With a continual commitment to meet our customers' needs with innovative high quality products with ISO 9002 'approval systems,' Cooper Bussmann is the supplier of choice for circuit protection solutions, today.



## Features and Benefits

- Colour coded for simple visual identification: **yellow** for PV (1000Vdc), **red** for IEC (690Vac) and **black** for UL (600Vac/dc) applications.
- CHPV Models, with 1000Vdc rating for use with solar gPV fuse links, are suitable for photovoltaic applications of any size.
- Tested to a wide range of standards: IEC, cULus, CSA, CCC and UR, allowing for use across global applications.
- World class footprint - smaller than any other Modular Fuse Holder, reducing installation space required
- Toolless DIN-Rail mounting, improves ease of use and reduces installation time and costs.
- Rated for use with 75°C or 90°C wire, fine stranded wire, spade terminals and with comb-bus bars. Use any higher temperature rated wire with appropriate derating.



## Specifications

**Agency Information:** IEC 60269-1 and 60269-2, UL File E14853, Guide IZLT Listed, IZLT2 Recognised, CSA File 47235, CHPV and CHM - Class 6225-30, CHCC - Class 6225-01, CCC

**Rated Voltage and Rated Current:**

See table below

**Terminal Size:**

1 to 25mm<sup>2</sup> (#18 to #4 AWG)

**Torque Ratings:**

2.5 N•m maximum IEC only - 3.4 N•m (30 Lb-In) maximum UL only

**Flammability Ratings:**

UL 94V0, self-extinguishing

**Storage & Operating Temperature Range:**

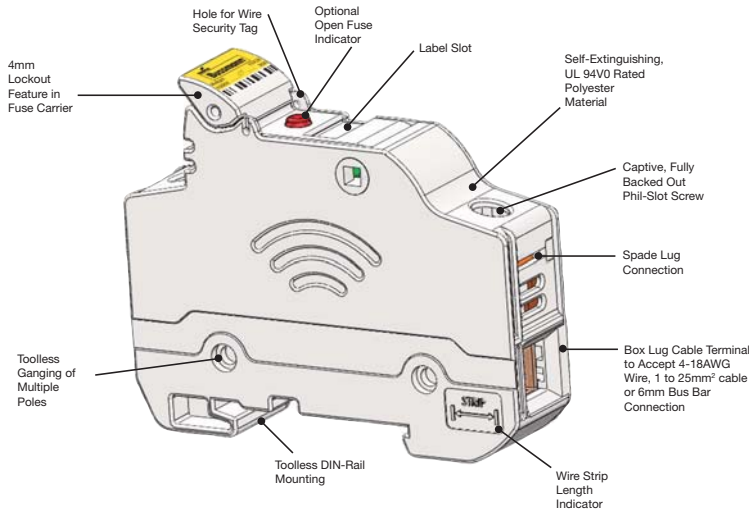
-20°C to +90°C (indicating)

-20°C to +120°C (non-indicating)

Series & Size	Catalogue Number		Rated Voltage & Rated Current	Agency Markings	Number of Poles	Terminal Rating	Rated Breaking Capacity	Cooper Bussmann Fuse Links
	With Indicator	Without Indicator						
CHM 10x38 and Midget	CHM1DIU	CHM1DU	IEC 690Vac/32A UL 600Vac/30A;	IEC 60269-2 UR; CSA; CCC	1	IEC: 1 to 25mm <sup>2</sup> 70°C PVC/Copper Cable Solid, Stranded, Fine Stranded, Spade Lug, Comb Bus Bar; Single and Dual	IEC 120kA rms sym UL 200kA rms sym CCC 100kA rms sym	IEC: C10 Series  UL: FNQ, KLM, FNM, KTK, BAF, FWA, PVM, AGU, BAN, FWC.
	CHM2DIU	CHM2DU			2			
	CHM3DIU	CHM3DU			3			
	CHM4DIU	CHM4DU			4			
	CHM1DNIU	CHM1DNU	IEC 60269-2	1-pole + 1 neutral				
	CHM3DNIU	CHM3DNU		3-pole + 1 neutral				
	CHM1DI-48U	N/A	IEC 48Vdc/32A UL 48Vdc/30A;	IEC 60269-2; UR; CSA; CCC	1			
N/A	CHM1DNXU	IEC 690Vac/32A	IEC 60269-2	1 neutral	N/A	N/A		
CHPV Photovoltaic	CHPV1IU	CHPV1U	IEC 1000Vdc/32A UL 1000Vdc/30A;	IEC 60269-1 UR; CSA; CCC UL4248-18	1	33kA	Solar PV series, PVM, PV-xxA10F	
	CHPV2IU	CHPV2U			2			
CHCC Class CC	CHCC1DIU	CHCC1DU	UL 600Vac/dc 30A	UL; CSA; CCC	1	200kA rms sym	LP-CC, FNQ-R, KTK-R	
	CHCC2DIU	CHCC2DU			2			
	CHCC3DIU	CHCC3DU			3			
	N/A	CHCC1DI-48U	UL 48Vdc/30A	1				

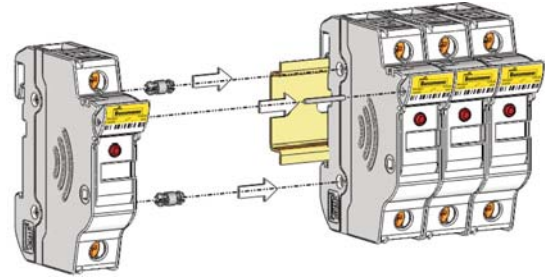
# Modular Fuse Holder Features and Installation Guide

## Features

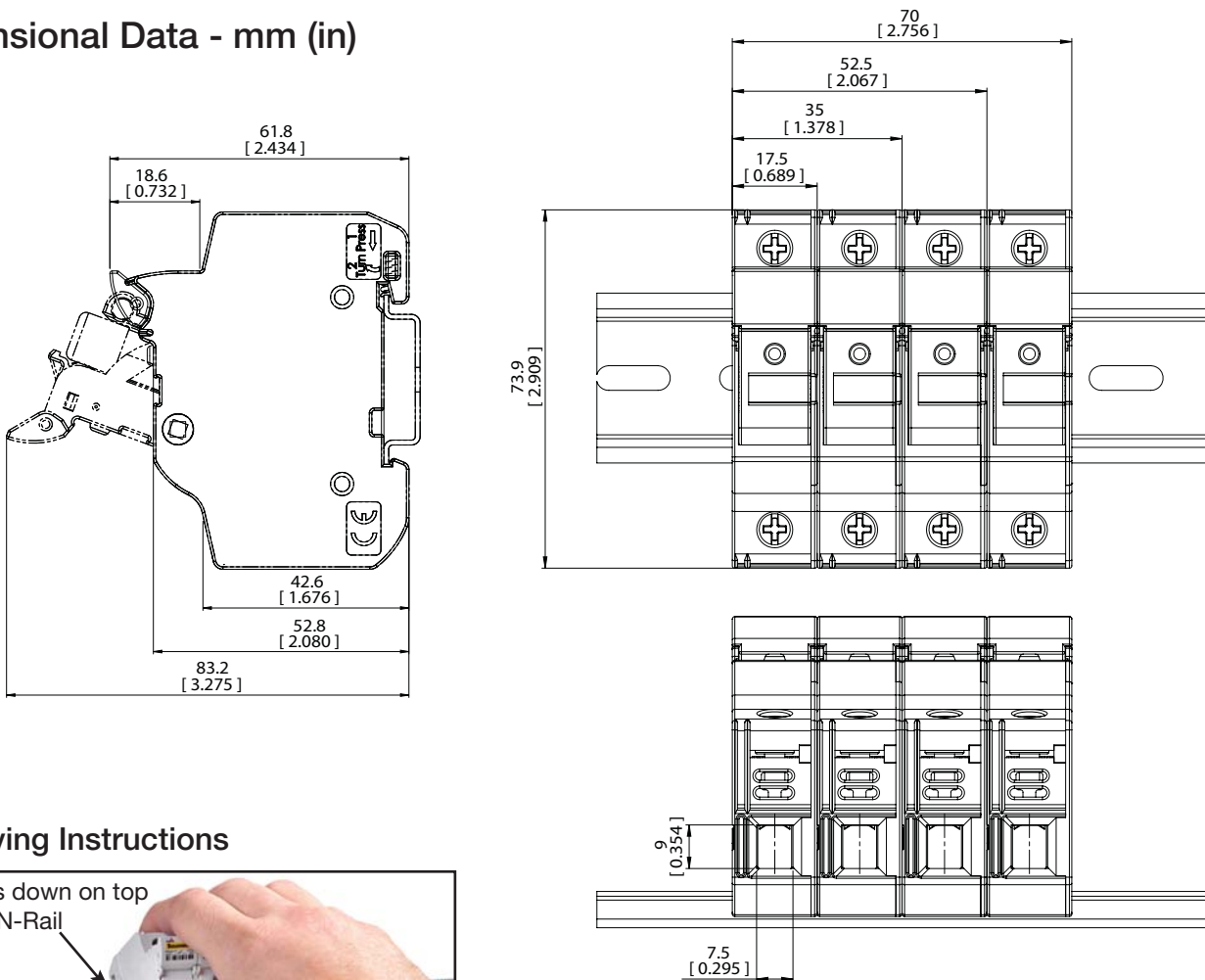


## Multi-Pole Ganging

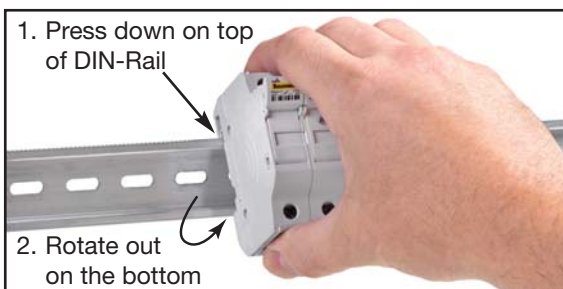
Use multi-pole connection kit part number JV-L to gang multiple poles together. One JV-L kit is sufficient to gang up to 4 poles.



## Dimensional Data - mm (in)

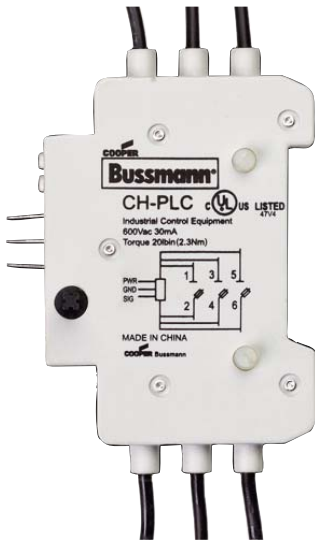


## Removing Instructions

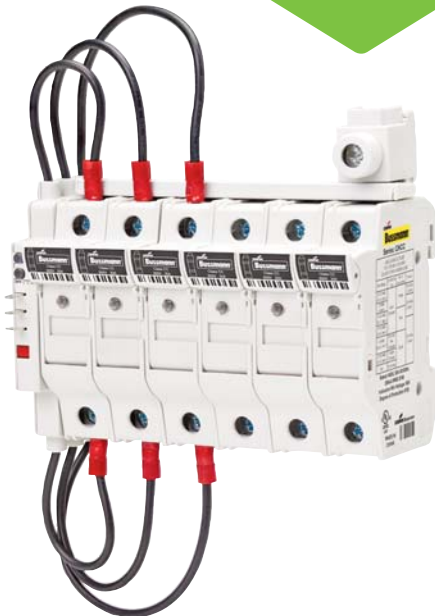




*Make it Simple* with Cooper Bussmann resettable three-phase remote fuse monitor that integrates with a Programmable Logic Controller (PLC) or other monitoring and control equipment.



RoHS



#### 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

#### Electromagnetic Compatibility (EMC) Testing:

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

#### 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

#### Minimum Circuit Voltage:

- Minimum circuit voltage required across the CH holder is 100Vac for the remote indication device to operate

#### Installation Technique:

- Mounts on the left side of the fuse holder and mechanically interlocks with the fuse holder switch handle with hardware provided

#### IP20 Rating: Yes

#### Environmental Data:

- Storage and Operating Temperature: -20°C to 75°C

#### Agency Information:

- UL 508
- cULus to CSA Standard 22.2 No.14

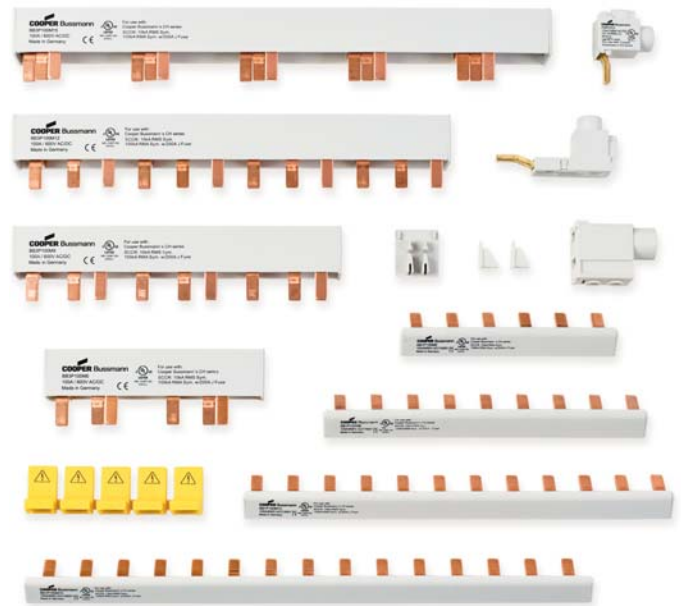
#### PLC Programming:

- The CH-PLC signal line is designed to provide a digital input to a PLC I/O card.
- Programmable Logic Control program must be written to properly interpret the input signal to the PLC.
- The PLC program should check for consecutive high signals before taking action on a critical process.

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

## Features and Benefits

- Easily distribute power in single-phase or three-phase configurations
- Flexible cut-to-length solutions without compromising on the product's finger-safe features
- 100kA SCCR (Short-Circuit Current Rating) when protected by a 200A Class J fuse
- Single-phase bus bars rated to 1000Vdc and 100A in end-fed configuration (200A for center-fed configuration)
- Three-phase bus bars rated to 600Vac/dc and 100A in end-fed configuration (200A for center-fed configuration)
- Power feed terminals for single-phase and three-phase service



## Specifications

Agency Information: UL508, File E195399

Pitch: 17.8mm

SCCR: 10kA (default)

100kA (with upstream Class J 200A fuses)

Max Current: 100A (power feed from end)

200A (power feed from center)

Max Voltage: 600Vac/dc (three phase)

1000Vdc/600Vac (single phase)

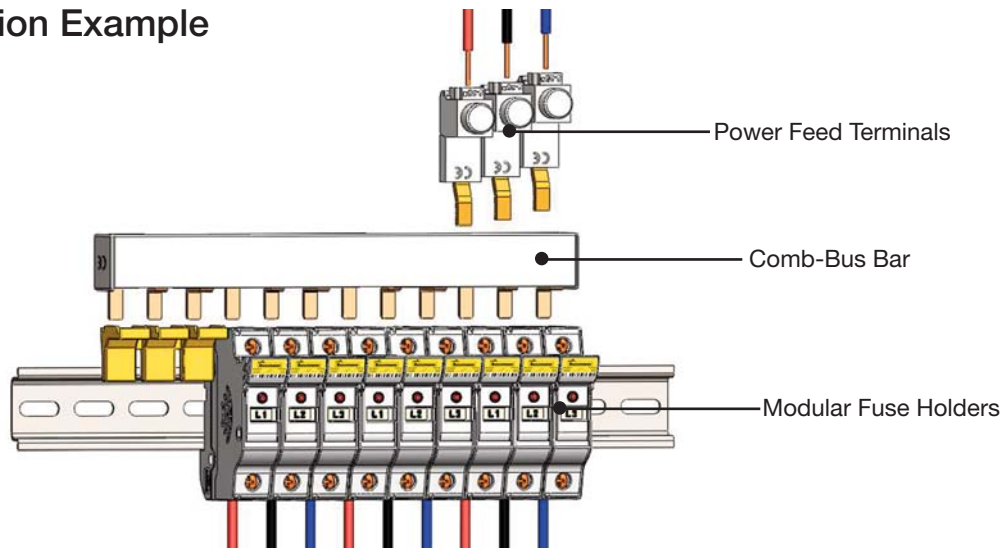


## Selection Guide

Part Number	Description
BB1P100M3	Single-phase 1000Vdc busbar, 100A, 3 pins, assembled endcap
BB1P100M6	Single-phase 1000Vdc busbar, 100A, 6 pins, assembled endcap
BB1P100M9	Single-phase 1000Vdc busbar, 100A, 9 pins, assembled endcap
BB1P100M12	Single-phase 1000Vdc busbar, 100A, 12 pins, assembled endcap
BB1P100M15	Single-phase 1000Vdc busbar, 100A, 15 pins, assembled endcap
BB1P100M57	Single-phase 1000Vdc cuttable busbar, 100A, 57 pins, without endcap
BB3P100M6	Three-phase 600V busbar, 100A, 6 pins, assembled endcap
BB3P100M9	Three-phase 600V busbar, 100A, 9 pins, assembled endcap
BB3P100M12	Three-phase 600V busbar, 100A, 12 pins, assembled endcap
BB3P100M15	Three-phase 600V busbar, 100A, 15 pins, assembled endcap
BB3P100M57	Three-phase 600V cuttable busbar, 100A, 57 pins, without endcap
ECAP1P	Single-phase busbar endcap
ECAPMP	Three-phase busbar endcap
PWR35MM	35mm <sup>2</sup> feeder terminal for three-phase busbar (115A, 1000Vac/dc)
FSCVR	Spare contact safety protection covers
PWR1PLP	Single-phase low-profile feeder terminal (115A, 1000Vac/dc)
PWR50MM	50mm <sup>2</sup> direct feed terminal (1000Vac/dc)

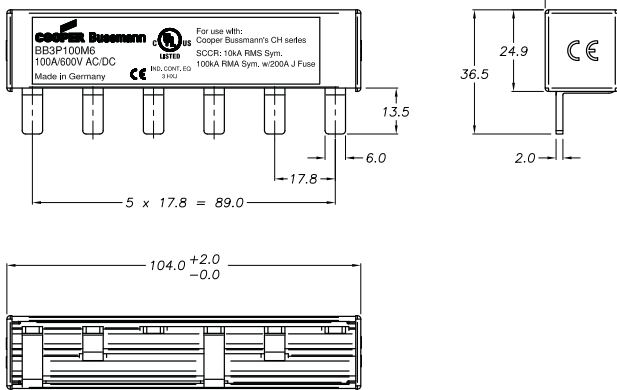
# Comb-bus Bar Features and Installation Guide

## Typical Installation Example

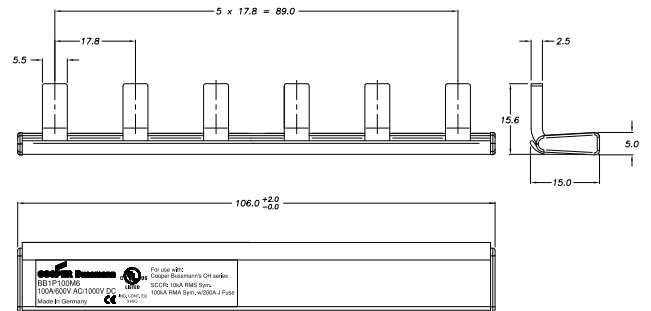


## Typical Dimensional Data

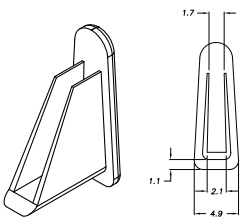
### Three-phase



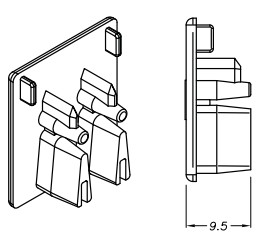
### Single-phase



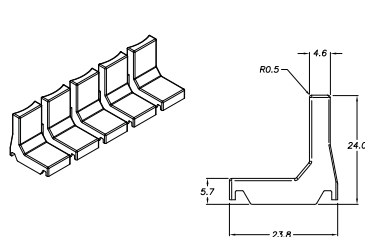
### ECAP1P



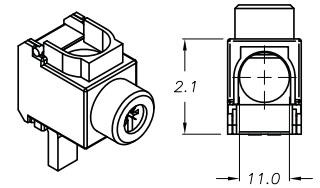
### ECAPMP



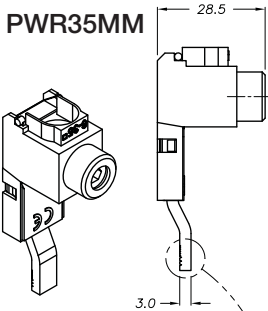
### FSCVR



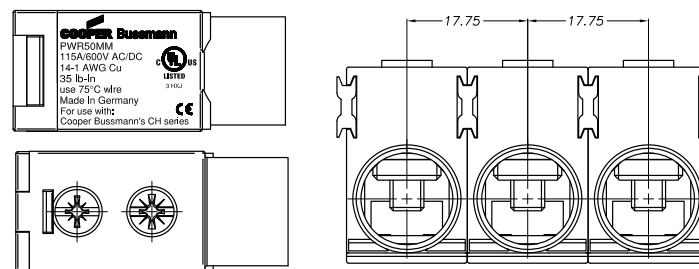
### PWR1PLP



### PWR35MM



### PWR50MM



# CH Series Modular Fuse Holder Specifications



PV



UL



IEC



Class J 30A



14x51 IEC

















22x58 IEC

Catalogue Numbers										
Without Indication	With* Indication	Size	Max Rated Voltage & Rated Current	IEC	UL	CCC	Phase Configuration	No of 17.5mm Modules	Wire Range	Maximum Torque
CHM1DU CHM2DU CHM3DU CHM4DU CHM1DNU CHM3DNU	CHM1DIU CHM2DIU CHM3DIU CHM4DIU CHM1DNIU CHM3DNIU	CHM 10x38 and Midget	IEC 690Vac/32A UL 600Vac/30A;	●	*	●	1-pole	1	1 to 25mm <sup>2</sup> (18 to 4 AWG)	3.4 N•m (30LB-In)
●	*			●	2-pole					
●	*			●	3-pole					
●	*	●	4-pole							
●	*			●	*		1 pole + Neutral	2		
●	*			●	*		3 pole + Neutral	4		
-	CHM1DI-48U		IEC 48Vdc/32A UL 48Vdc/30A	●	*	●	1-pole	1		
CHM1DNXU	-		IEC 690Vac/32A	●			1-pole + Neutral	2		
CHPV1U CHPV2U	CHPV1IU CHPV2IU	CHPV	IEC 1000Vdc/32A UL 1000Vdc/30A	●	†††	●	1-pole	1	1 to 25mm <sup>2</sup> (18 to 4 AWG)	3.4 N•m (30LB-In)
				●	†††	●	2-pole	2		
CHCC1DU CHCC2DU CHCC3DU	CHCC1DIU CHCC2DIU CHCC3DIU	CHCC Class CC	UL 600Vac/30A		**	●	1-pole	1		
					**	●	2-pole	2		
					**	●	3-pole	3		
CHCC1DI-48U	-		UL 48Vdc/30A		††	●	1-pole	1		
CH141B CH141BMS CH141BNX CH141BN CH142B CH143B CH143BMS CH143BN CH143BNMS CH144B	CH141BI - - CH141BNI CH142BI CH143BI - CH143BNI - CH144BI	CH14 14x51	IEC 690Vac/50A UL 600Vac/Vdc 40A (5 Watt)	●			1-pole	1.5	2.5 to 16mm <sup>2</sup> (14 to 6 AWG)	3 N•m (30LB-In)
				●			1pole + Microswitch	1.5		
				●			1 Neutral pole	1.5		
				●			1-pole + Neutral	3		
				●	†		2-pole	3		
				●	†		3-pole	4.5		
				●			3 pole + Microswitch	4.5		
				●			3-pole + Neutral	6		
				●			3-pole + Neutral + Microswitch	6		
				●			4-pole	6		
CH221B CH221BMS CH221BNX CH221BN CH222B CH223B CH223BMS CH223BN CH223BNMS CH224B	Not available with local neon indication (remote microswitch only)	CH22 22x58	IEC 690Vac/125A UL 600Vac/Vdc 100A (9.5 Watt)	●	†		1-pole	2	2.5 to 50mm <sup>2</sup> (14 to 1 AWG)	4 N•m (35LB-In)
				●			1-pole + Microswitch	2		
				●			1 Neutral Pole	2		
				●			1-pole + Neutral	4		
				●	†		2-pole	4		
				●	†		3-pole	6		
				●			3-pole + Microswitch	6		
				●			3-pole + Neutral	8		
				●			3-pole + Neutral + Microswitch	8		
				●			4-pole	8		
<b>Class J</b> easyID™ Indication	Neon Indication									
CH30J1 CH30J2 CH30J3	CH30J1I CH30J2I CH30J3I	CH30J 30A Class J	UL/CSA 600Vac		††		1-pole	-	1 to 50mm <sup>2</sup> (18 to 1 AWG)	1 to 8AWG 4.0 N•m (35LB-In) 10 to 18 AWG 2.7N•m (24LB-In)
					††		2-pole	-		
					††		3-pole	-		
CH60J1 CH60J2 CH60J3	CH60J1I CH60J2I CH60J3I	CH60J 60A Class J	UL/CSA 600Vac		††		1-pole	-	1 to 50mm <sup>2</sup> (18 to 1 AWG)	1 to 8AWG 4.0 N•m (35LB-In) 10 to 18 AWG 2.7N•m (24LB-In)
					††		2-pole	-		
					††		3-pole	-		

† UL Recognised (cURus)      †† UL Listed (cULus)      ††† UL Recognised, Standard 4248-18, CSA, \* UL recognised, CSA, \*\* UL Listed, CSA  
 For further details see Data Sheets 720148 (CH14), 2053 (CH22) and 2144 (CHJ Class J)  
 \* 90V minimum required for illumination      \*\*\* 12V minimum required for illumination

# Widest Range of Fuse Holders Available

<p><b>Modular Fuse Holders Series</b></p>		<p><b>Covers SAMI™ Series</b></p>	
<p><b>CUBEFuse™ Series</b></p>		<p><b>Open Block Series</b></p>	
<p><b>IEC Series</b></p>		<p><b>Bolt-Down Series</b></p>	
<p><b>CH Series</b></p>		<p><b>In-line Series</b></p>	
<p><b>JTN 600 Series</b></p>		<p><b>Panel Mount Series</b></p>	
<p><b>Optima® Series</b></p>		<p><b>Knife Blade Series</b></p>	
<p><b>Class CC and Midget Series</b></p>		<p><b>Military Series</b></p>	

# Customer Assistance

## Customer Satisfaction Team

The Cooper Bussmann® Customer Satisfaction Team is available to answer questions regarding Cooper Bussmann products.

Europe calls can be made between:

Monday - Thursday 7.30 a.m. - 5.30 p.m. GMT

Friday 7.30 a.m. - 5.00 p.m. GMT

The Customer Service Satisfaction Team can be reached via:

- Phone: 00 44 (0) 1509 882 600
- Fax: 00 44 (0) 1509 882 786
- Email: bulesales@cooperindustries.com

## C<sup>3</sup> Cooper Customer Center

The Cooper C<sup>3</sup> portal supports the following Cooper Divisions: Cooper B-Line, Cooper Bussmann, Cooper Crouse-Hinds, Cooper Lighting, Cooper Power Systems, Cooper Safety, and Cooper Wiring Devices.

Get started today at [WWW.COOPERC3.COM](http://WWW.COOPERC3.COM) by clicking Request User ID and Password.

- Easy to Navigate
- Simple to Use
- Real-Time Data

## Online Resources

Visit [www.cooperbussmann.com](http://www.cooperbussmann.com) for the following resources:

- Product cross reference
- Product profiles
- Online catalogues for the latest United States and European catalogues

## Application Engineering

Application Engineering assistance is available to all customers. The Application Engineering team is staffed by university-qualified electrical engineers who are available with technical and application support.

Europe calls can be made between:

Monday - Thursday 8.30 a.m. - 4.30 p.m. GMT

Friday 8.30 a.m. - 4.00 p.m. GMT

Application Engineering can be reached via:

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