

# Compact Circuit Protector (CCP)

UL Class CC, Midget and IEC 10x38 fuses



RoHS

The revolutionary Cooper Bussmann CCP is 1/3 the footprint of a molded case circuit breaker. The level of protection provided by the CCP is up to three times the Short-Circuit Current Rating (SCCR) at full voltage than a molded case circuit breaker while providing a disconnecting means.

## Product Features and Benefits

- Extremely compact design at 17.5mm wide per pole
- High Short-Circuit Current Ratings up to 200kA (UL) and 120kA (IEC)
- Disconnect rated to provide means for load isolation
- Full voltage rated up to 600Vac or 80Vdc
- Class CC version is UL 98 Listed and horsepower rated, and suitable for branch circuit disconnect and branch circuit protection
- IEC 10x38 version complies with IEC 60947-3 and suitable for branch circuit disconnect and branch circuit protection
- Suitable for global installations, the units comply with UL, cULus, and IEC standards accepting UL Class CC, Midget or IEC aM and gG/gL fuses
- Open Fuse Indication
  - Local fuse indication lights\* are standard.
  - Optional wired remote open fuse indication can be utilized to signal a PLC and open a contactor to de-energize all phases, if required.
- IP20 finger-safe with 10AWG (6mm<sup>2</sup>) or larger wire
- Built-in switch interlock capability prohibits removing the fuse under load
- Padlockable handle for lockout/tagout procedures
- Available in 1-, 2- and 3-pole versions
- Spade terminals, rated up to 30A, installed on the line side of the disconnect, make it easy to add NEC® 240.21 compliant taps for loads up to 80% of the spade terminal amp rating for devices that need to remain energized when the disconnect is in the OFF position

\*Circuit must be closed with 90Vac/115Vdc minimum for indication light to illuminate

## Specifications:

- Box lug and spade terminal suitable for line, load or accessory connection
- Box Lug Connection:
  - 18-6 AWG (1 to 16mm<sup>2</sup>) single or dual rated, solid or stranded – 75°C or higher - Cu only
  - 4 AWG (25mm<sup>2</sup>) single – 75°C or higher - Cu only
- Spade Terminal Connection:
  - Max. 30A with insulated flanged spade terminal wire size #12 - #10 AWG for stud size #8
- Torque:
  - 18-10 AWG 20 Lb-In (1-6mm<sup>2</sup>/3.4N•m)
  - 8-4 AWG 35 Lb-In (10-25mm<sup>2</sup>/5.8N•m)
- Lockout/tagout: 4mm shank lock or standard pin-out devices
- 35mm DIN-Rail mount
- Dimensionally compliant to DIN 43880
- Local indication minimum operating voltage:
  - 90Vac for AC version
  - 12Vdc for DC version

## Agency Information:

### UL Class CC fuse version

- UL 98 Listed, File E302370, Guide WHTY
- cULus to CSA Standard 22.2 No. 4-04, File 302370, Guide WHTY7
- CE Compliant

### UL Midget fuse version

- UL 508 Listed
- cULus Certified 22.2 No. 14-05
- CE Compliant

### 10X38 IEC Class aM and gG/gL fuse version

- IEC 60947-3 AC23A
- IEC 60947-3 DC23A
- CE Compliant

## Shipping Weight:

- 2.84 lbs (1.29kg) per carton

## Carton Quantity:

- 12 Poles

## Environmental Data

- Storage and operating temperature: -20°C to 75°C\*\*
- Flammability rating: UL 94V0

\*\* For fuse performance under or above 25°C, consult fuse performance derating charts in the Cooper Bussmann publication titled Selecting Protective Devices (SPD) reorder #3002.

# Compact Circuit Protector (CCP)

UL Class CC, Midget and IEC 10x38 fuses



## Technical Ratings

Catalog Number	Poles	Amp Rating	Voltage Rating	Fuse Type	Max. Fuse Ampacity	SCCR	Agency Approvals	Hp ratings
CCP-1-30CC	1	30	600Vac	Class CC	30A	200kA	UL 98 Listed cULus 22.2 No. 4-04	0.5Hp@120V
CCP-2-30CC	2	30	600Vac	Class CC	30A	200kA	UL 98 Listed cULus 22.2 No. 4-04	2.0Hp@240V
CCP-3-30CC	3	30	600Vac	Class CC	30A	200kA	UL98 Listed cULus 22.2 No. 4-04	3Hp@240V 5Hp@480V 7.5Hp@600V
CCP-1-30M	1	30	240Vac* UL	UL Midget	30A	10kA*	UL 508 Listed cULus 22.2 No. 14-05	—
			400Vac* IEC	10x38 IEC	32A aM, 25A gG	120kA*	IEC 60947-3 AC23A	
CCP-2-30M	2	30	240Vac* UL	UL Midget	30A	10kA*	UL 508 Listed cULus 22.2 No. 14-05	—
			400Vac* IEC	10x38 IEC	32A aM, 25A gG	120kA*	IEC 60947-3 AC23A	
CCP-3-30M	3	30	240Vac* UL	UL Midget	30A	10kA*	UL 508 Listed cULus 22.2 No. 14-05	—
			400Vac* IEC	10x38 IEC	32A aM, 25A gG	120kA*	IEC 60947-3 AC23A	
CCP-1-DCC	1	30	80Vdc*	Class CC (DC rated)	30A	20kA*	UL 98 Listed CSA 22.2 No. 4-04	—
CCP-1-DCM	1	30	80Vdc*	UL Midget	30A	10kA*	UL 508 Listed cULus 22.2 No. 14-05	—
				10x38 IEC	32A aM, 25A gG		IEC 60947-3 DC23A	

\*Rating may be lower depending on installed fuse. Refer to fuse data sheet.

## Recommended UL Fuse Types

AC Voltage		DC Voltage	
Class CC	Midget	Class CC	Midget
LP-CC	KTK	LP-CC	KLM
KTK-R	FNM		
FNQ-R	FNQ		
	BAF		

## Recommended IEC Fuse Types

10x38 IEC	
Part Number	IEC
Family	Class
C10G	gG/gL
C10M	aM

# Compact Circuit Protector (CCP)

UL Class CC, Midget and IEC 10x38 fuses

## Motor Sizing Chart

Voltage	Motor Size Hp	Motor FLA	Fuse	Amps		
				Min	Code Max	Heavy Start
115 Vac - 1 Phase	0.167	4.4	LP-CC	9	15	15
	0.25	5.8		12	20	20
	0.33	7.2		15	25	25
	0.50	9.8		30	30	30
230 Vac - 1 Phase	0.17	2.2	LP-CC	4.5	10	10
	0.25	2.9		6	10	10
	0.33	3.6		7	15	15
	0.50	4.9		10	15	15
	0.75	6.9		15	25	25
	1	8		25	25	30
200 Vac - 3 Phase	0.50	2.5	LP-CC	5	10	10
	0.75	3.7		7.5	15	15
	1	4.8		10	15	15
	1.5	6.9		15	25	25
	2	7.8		25	25	30
208 Vac - 3 Phase	0.50	2.4	LP-CC	5	10	10
	0.75	3.5		7	15	15
	1	4.6		10	15	15
	1.5	6.6		15	20	25
	2	7.5		15	25	30
230 Vac - 3 Phase	0.50	2.2	LP-CC	4.5	10	10
	0.75	3.2		7	10	12
	1	4.2		9	15	15
	1.5	6		12	20	20
	2	6.8		15	25	25
	3	9.6		30	30	30
460 Vac - 3 Phase	0.50	1.1	LP-CC	2.25	6	6
	0.75	1.6		3.2	6	6.25
	1	2.1		4.5	10	10
	1.5	3		6	10	12
	2	3.4		7	15	15
	3.00	4.8		10	15	15
	5.00	7.6		25	25	30
575 Vac - 3 Phase	0.50	0.9	LP-CC	1.8	3	3.5
	0.75	1.3		2.8	6	6
	1	1.7		3.5	6	6.25
	1.5	2.4		5	10	10
	2	2.7		5.6	10	10
	3.00	3.9		8	15	15
	5.00	6.1		15	20	20
	7.50	9		30	30	30

Note: NEMA motors only (no IEC or Design B Energy Efficient). Minimum size if no more than 1 start/hour. Code max if low to moderate reverse/jog/plug applications. Heavy start permitted only if Code Max does not allow motor start-up. For high reverse/jog/plug applications or larger horsepower motors, Class J fuses are recommended. See CCP with CUBEFuse.

# Compact Circuit Protector (CCP)

## CUBEFuse



RoHS

The revolutionary Cooper Bussmann CCP is 1/3 the footprint of a circuit breaker. The level of protection provided by the CCP is up to three times the Short-Circuit Current Rating (SCCR) at full voltage than a molded case circuit breaker while providing disconnecting means.

### Product Features and Benefits

- Uses Class CF finger-safe time-delay or fast-acting CUBEFuse with Class J electrical performance\*.
- Extremely compact design at 25.4mm (1 inch) wide per pole
- High Short-Circuit Current Ratings at 200kA
- Disconnect rated to provide means for load isolation
- Full voltage rated at 600Vac for 30A, 60A and 100A versions
- Consult factory for DC ratings
- UL 98 Listed and suitable for branch circuit disconnect and branch circuit protection
- 1-, 2- and 3-pole versions are horsepower rated
- Complies with UL and CSA
- Open Fuse Indication:
  - Local fuse indication lights\*\* are standard
  - Optional wired remote open fuse indication can be utilized to signal a PLC and open a contactor to de-energize all phases, if required
- Additional open fuse indication can be provided by the time-delay CUBEFuse
- IP20 finger-safe construction with 10 AWG (6mm<sup>2</sup>) wire or larger
- Built-in switch interlock capability prohibits removing the fuse under load
- Padlockable handle for lockout/tagout procedures
- Spade terminals, rated up to 30A, installed on the line side of the disconnect, make it easy to add NEC® 240.21 compliant taps for loads up to 80% of the spade terminal amp rating for devices that need to remain energized when the disconnect is in the OFF position

\*See data sheet 9000 for CUBEFuse specifications

\*\*Circuit must be closed with minimum 90Vac/115Vdc for indication light to illuminate

\*\*\*For fuse performance under or above 25°C, consult fuse performance derating charts in the Cooper Bussmann publication "Selecting Protective Devices" (SPD) reorder #3002.

### Specifications:

- Box Lug and Spade Terminal suitable for line, load or accessory connection
- Box Lug Connection:
  - 30-60A:
    - 18-6 AWG (1 to 16mm<sup>2</sup>) single or dual rated, solid or stranded – 75°C or higher - Cu only
    - 4 AWG (25mm<sup>2</sup>) single – 75°C or higher - Cu only
  - 100A:
    - 18-1AWG (1-45mm<sup>2</sup>) single or dual rated, solid or stranded – 75°C or higher - Cu only
    - 6AWG (16mm<sup>2</sup>) single – 75°C or higher - Cu only
- Spade Terminal Connection:
  - Max. 30A with insulated flanged spade terminal wire size #12 - #10 AWG for stud size #8
- Torque:
  - 30-60A:
    - 18-10 AWG 20 Lb-In (1-6mm<sup>2</sup>/3.4N•m)
    - 8-4 AWG 35 Lb-In (10-25mm<sup>2</sup>/5.8N•m)
  - 100A:
    - 18-10AWG 25 Lb-In (1-6mm<sup>2</sup>/2.82N•m)
    - 8-1AWG 40 LB-In (10-45mm<sup>2</sup>/4.52N•m)
    - 6AWG 45Lb-In (16mm<sup>2</sup>/5.08N•m)
- Lockout/tagout: 4mm shank lock
- 35mm DIN-Rrail mount
- Local indication minimum operating voltage:
  - 90Vac/115Vdc

### Agency Information:

- UL 98 Listed, File E302370, Guide WHTY
- cULus to CSA Standard 22.2 No. 4-04, File 302370, Guide WHTY7
- CE Compliant

### Shipping Weight:

- 2.03 lbs (0.92kg) per carton

### Carton Quantity:

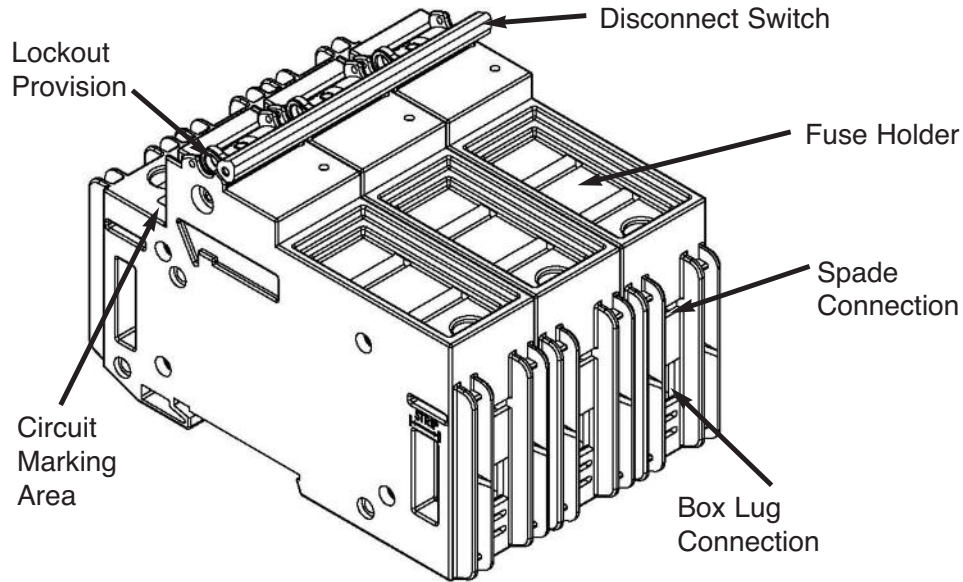
- 6 Poles

### Environmental Data:

- Storage and operating temperature: -20°C to 75°C\*\*\*
- Flammability rating: UL 94V0

# Compact Circuit Protector (CCP)

CUBEFuse



## Technical Ratings

CCP Part Numbers	Poles	Voltage Rating	CUBEFuse™ (Class J performance)			Max. Fuse** Ampacity	SCCR	Hp Ratings***
			Time-Delay Non-Indicating	Time-Delay Indicating*	Fast-Acting Non-Indicating			
CCP-1-30CF	1	600Vac	TCF1RN – TCF30RN	TCF6 – TCF30	FCF1RN – FCF30RN	30A	200kA	1.5Hp@120V
CCP-2-30CF	2							3Hp@240V
CCP-3-30CF	3							5Hp@240V 15Hp@480V 10Hp@600V
CCP-1-60CF	1	600Vac	TCF35RN – TCF60RN	TCF35 – TCF60	FCF35RN – FCF60RN	60A	200kA	3.0Hp@120V
CCP-2-60CF	2							7.5Hp@240V
CCP-3-60CF	3							7.5Hp@240V 20Hp@480V 15Hp@600V
CCP-1-100CF	1	600Vac	TCF70RN – TCF100RN	TCF70 – TCF100	FCF70RN – FCF100RN	100A	200kA	5.0Hp@120V
CCP-2-100CF	2							10Hp@240V
CCP-3-100CF	3							20Hp@240V 50Hp@480V 40Hp@600V

\*1A and 3A indicating CUBEFuse not available. Correct fit with CCPB disconnect requires indicating CUBEFuse with date code R38 or later.

\*\*Any fuse with an amp rating less than or equal to the max fuse rating may be used. Example: TCF15 maybe used with CCPB-1-20CF.

\*\*\*Do not use UPS/Critical Application fast-acting CF with motors.

## Compact Circuit Protector (CCP)

## CUBEFuse

CUBEFuse Motor Sizing Table

Voltage	Motor Size (Hp)	Motor* FLA (Amps)	Low-Peak CUBEFuse Time-Delay (Amp Rating)		
			Optimal Protection	Code Max	Heavy Start
115Vac, 1-Phase	0.167	4.4	10	10	10
	0.25	5.8	10	15	15
	0.333	7.2	15	15	15
	0.5	9.8	15	20	20
	0.75	13.8	25	25	30
	1	16	25	30	35
	1.5	20	30	35	45
	2	24	40	45	50
	3	34	50	60	N/A
5**	56	90	100	N/A	
230Vac, 1-Phase	0.167	2.2	6	6	6
	0.25	2.9	6	6	6
	0.333	3.6	6	10	10
	0.5	4.9	10	10	10
	0.75	6.9	15	15	15
	1	8	15	15	17.5
	1.5	10	15	20	20
	2	12	20	25	25
	3	17	25	30	35
	5	28	45	50	60
7.5	40	60	N/A	N/A	
10**	50	80	90	N/A	
200Vac, 3-Phase	0.5	2.5	6	6	6
	0.75	3.7	6	10	10
	1	4.8	10	10	10
	1.5	6.9	15	15	15
	2	7.8	15	15	17.5
	3	11	17.5	20	20
	5	17.5	30	35	35
	7.5	25.3	40	45	50
20**	62.1	100	N/A	N/A	
208Vac, 3-Phase	0.5	2.4	6	6	6
	0.75	3.5	6	10	10
	1	4.6	10	10	10
	1.5	6.6	10	15	15
	2	7.5	15	15	15
	3	10.6	17.5	20	20
	5	16.7	25	30	35
7.5	24.2	40	45	50	
20**	59.4	90	N/A	N/A	

Voltage	Motor Size (Hp)	Motor <sup>1</sup> FLA (Amps)	Low-Peak CUBEFuse Time-Delay (Amp Rating)		
			Optimal Protection	Code Max	Heavy Start
230Vac, 3-Phase	0.5	2.2	6	6	6
	0.75	3.2	6	6	6
	1	4.2	10	10	10
	1.5	6	10	15	15
	2	6.8	15	15	15
	3	9.6	15	20	20
	5	15.2	25	30	30
	7.5	22	35	40	45
	20**	54	90	100	N/A
460Vac, 3-Phase	0.5	1.1	3	3	3
	0.75	1.6	3	3	3
	1	2.1	6	6	6
	1.5	3	6	6	6
	2	3.4	6	6	6
	3	4.8	10	10	10
	5	7.6	15	15	15
	7.5	11	17.5	20	20
	10	14	25	25	30
	15	21	35	40	45
	20	27	40	50	60
50**	65	100	N/A	N/A	
575Vac, 3-Phase	0.5	0.9	3	3	3
	0.75	1.3	3	3	3
	1	1.7	3	3	3
	1.5	2.4	6	6	6
	2	2.7	6	6	6
	3	3.9	6	10	10
	5	6.1	10	15	15
	7.5	9	15	20	20
	10	11	17.5	20	20
	40**	41	70	80	80

**Note:** Use Code Max column for low to moderate reverse/jog/plug applications. Heavy Start permitted only if Code Max does not allow motor start-up.

\*Based on motor FLA from NEC® tables 430.248 and 430.250.

\*\*Max. Hp rating for the CCPB 100 Amp device at specified voltage.

# Compact Circuit Protector (CCP) Accessories

UL Class CC, Midget and IEC 10x38 fuses, and CUBEFuse

## Recommended Lockout Devices

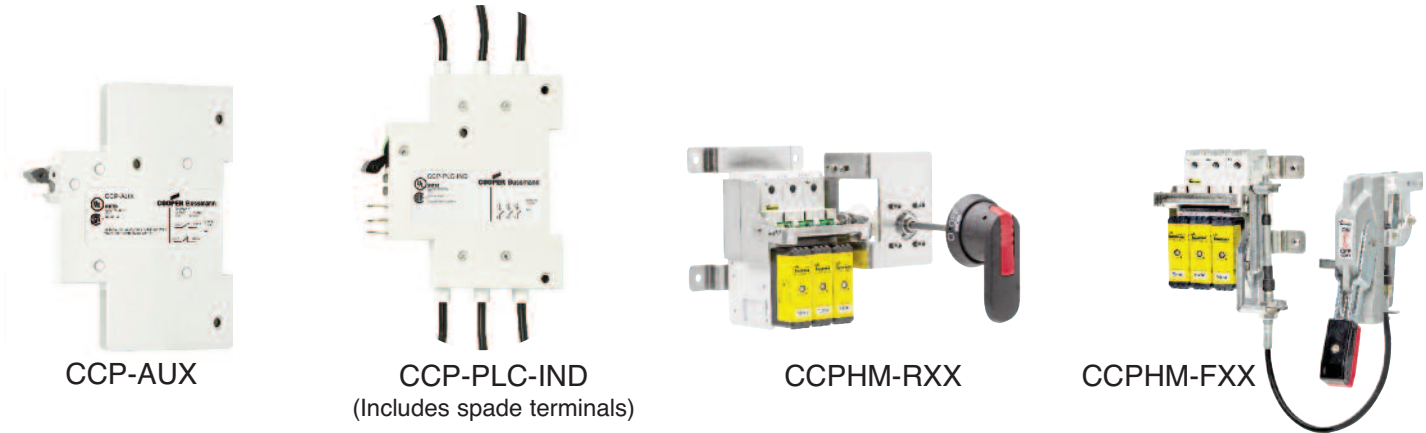
CCP Version	Bradly Pin-Out P/N	Ideal P/N	Generic Brand
Class CC, Midget, IEC 10x38	90844	44-779	N/A
CUBEFuse	N/A	N/A	4mm Shank Lock

## Accessories for use with Class CC, Midget, IEC 10x38 and CUBEFuse CCP

Catalog Number	Description	Configuration	Signal Output	Minimum Circuit Voltage	Agency Approvals
CCP-AUX*	Auxiliary Contacts NO+NC for Switch Status up to 60A	1 per CCP	5A/240Vac	–	UL 98 Recognized and cURus 22.2 No. 4-04, IEC 60947-5-1 AC15
CCP-PLC-IND*	Wired Remote Fuse Indication for PLC Applications up to 60A	1 per CCP	24Vdc	100Vac	UL 98 Recognized and cURus 22.2 No. 4-04
CCPHM-RXX**	Rotary Handle Mechanism	3-Pole CCP	–	–	UL 98 Recognized
CCPHM-FXX**	Flex Shaft Handle Mechanism	3-Pole CCP	–	–	UL 98 Recognized

\*Cannot be used with rotary or flange handle mechanism. (CLPHM-XX)

\*\*Refer to Product Profile #3178.

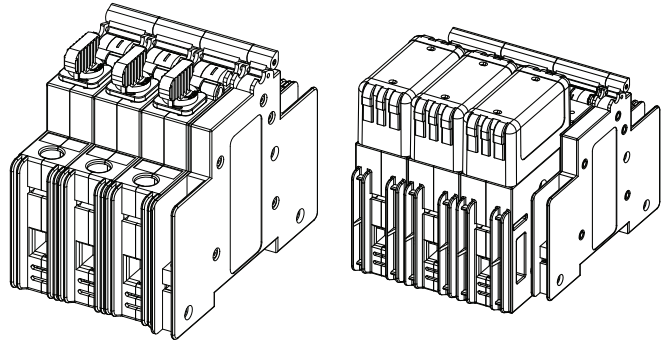


# Auxiliary Contact

UL Class CC, Midget and IEC 10x38 fuses, and CUBEFuse



RoHS



CCP-AUX installed on a CCP-3-xx

## Description

NO+NC contact output to indicate the status of the switching mechanism on the CCP

### Specifications:

- Rated Ampacity: 5A
- Rated Voltage: 240Vac
- NC/NO contacts are closed/open when the CCP switch is in the "ON" position (closed)
- Flammability Rating: UL 94V0
- For use with up to and including 100A CCP

### Agency Information:

- UL 98 File E155130, Guide WHTY2
- cULus to CSA Standard 22.2 No. 4-04
- IEC 60947-5-1

### Wiring:

- 20-16 AWG (1 to 2.5mm<sup>2</sup>) wire
- Torque 5 Lb-In (0.68N·m)
- For use with only 75°C Cu wire

### Packaging:

- The CCP-AUX is packaged individually
- A single unit is capable of mounting to a 1-, 2-, or 3-pole CCP

## Installation Technique:

- Mounts on the right side of the CCP, and mechanically interlocks with the CCP switch handle with hardware provided. Cannot be used with rotary or flange handle mechanism.

## IP20 Rating: Yes

## Environmental Data:

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

## Catalog Numbers:

- 1-60A: CCP-AUX
- 70-100A: CCP-AUX-100

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



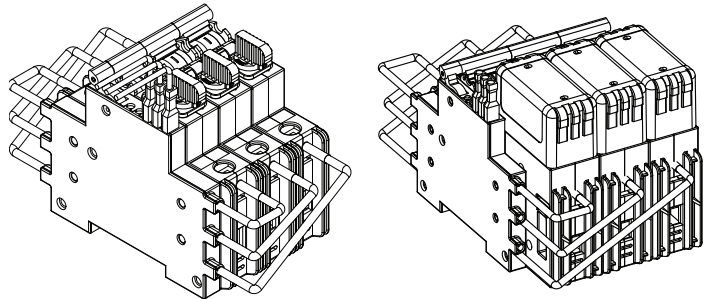
# Remote Fuse Monitoring Accessory

UL Class CC, Midget and IEC 10x38 fuses, and CUBEFuse



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CCP-PLC-IND installed on a CCP-3-xx



## Description

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

### Specifications:

- **Power Input:** 24Vdc, 8A
- **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). Open fuse LED is resettable upon the replacement of the fuse and the actuation of the reset switch
- **Flammability Rating:** UL 94V0
- For use with up to and including 100A CCP

### 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 CCP-PLC-IND is packaged individually
- A single unit monitors up to three phases. Package includes 0.110" (2.8mm) quick connects for power, signal and ground connections

### Minimum Circuit Voltage:

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

### Installation Technique:

- Mounts on the left side of the CCP and mechanically interlocks with the CCP switch handle with hardware provided. Cannot be used with rotary or flange handle mechanism.

### IP20 Rating: Yes

### Environmental Data:

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

### Agency Information:

- UL 98 File E155130, Guide WHTY2
- cULus to CSA Standard 22.2 No. 4-04

### PLC Programming:

- The CCP-PLC-IND signal line is designed to provide a digital input to a PLC I/O card. In this case, a 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.

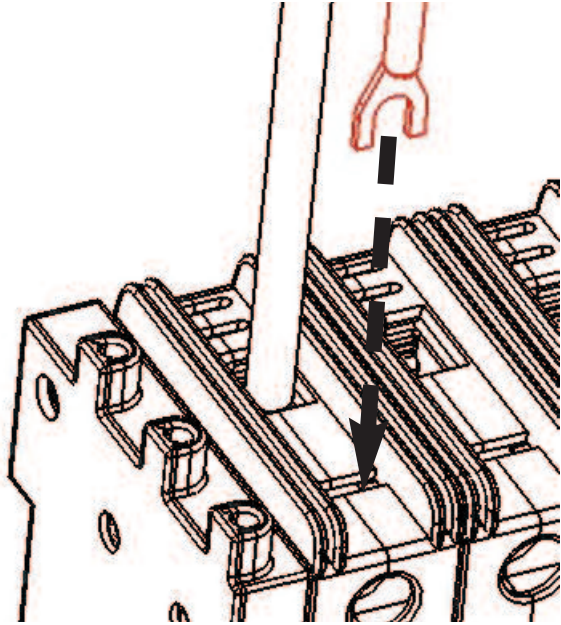
### Catalog Numbers:

- 1-60A: CCP-PLC-IND
- 70-100A: CCP-PLC-100

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

# Remote Fuse Monitoring Accessory – CCP-PLC-IND

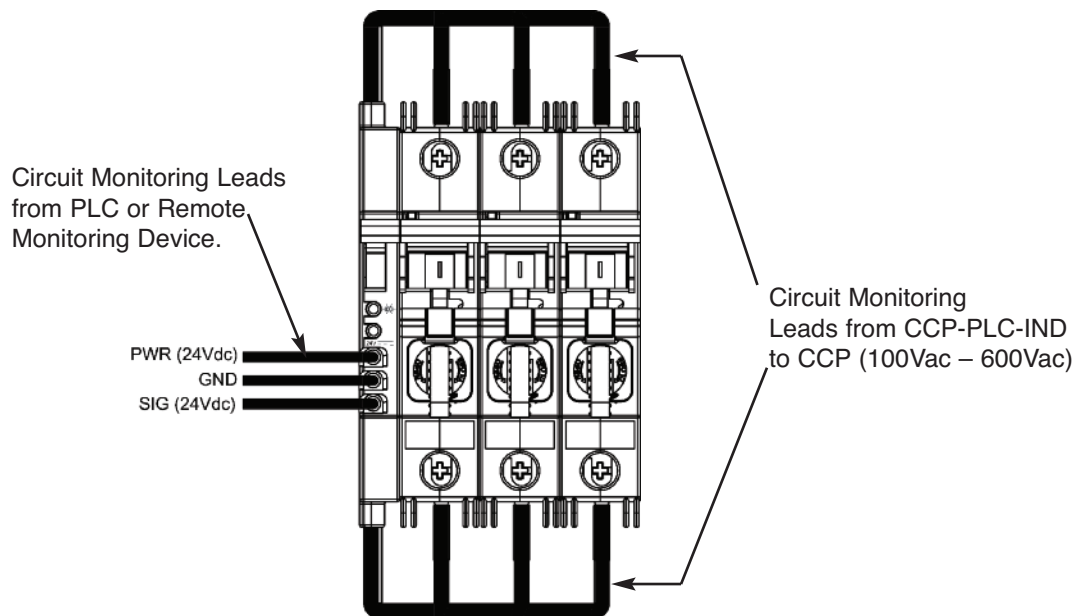
UL Class CC, Midget and IEC 10x38 fuses, and CUBEFuse



Connect leads from CCP-PLC-IND to the terminals as shown. There is a dedicated terminal on the CCP to accept the spade connectors from the CCP-PLC-IND.

NOTE: When monitoring a 1-pole or 2-pole CCP, trim unused leads.

Connection from CCP-PLC-IND to CCP



Connections for CCP-PLC-IND from a CCP-3 to a remote monitoring device

# Compact Circuit Protector (CCP)

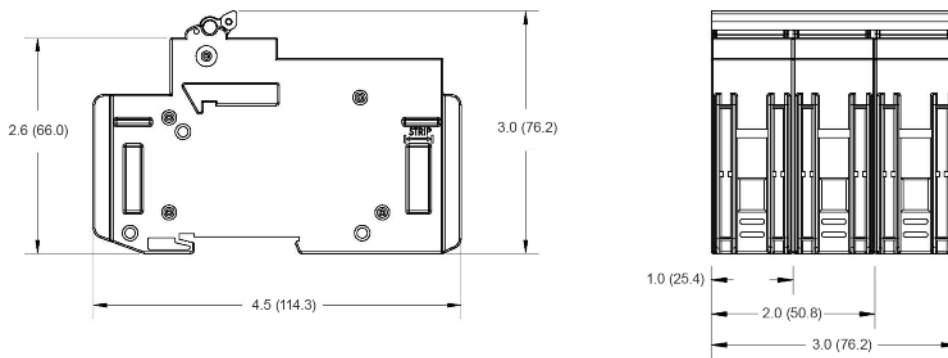
UL Class CC, Midget and IEC 10x38 fuses, and CUBEFuse

## Dimensions - in (mm)

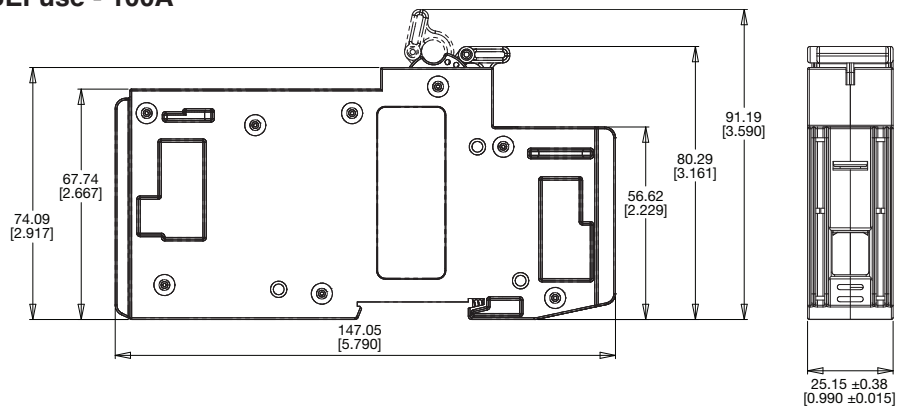
CCP for Class CC, Midget and IEC 10x38



## CCP with CUBEFuse - 30 – 60A



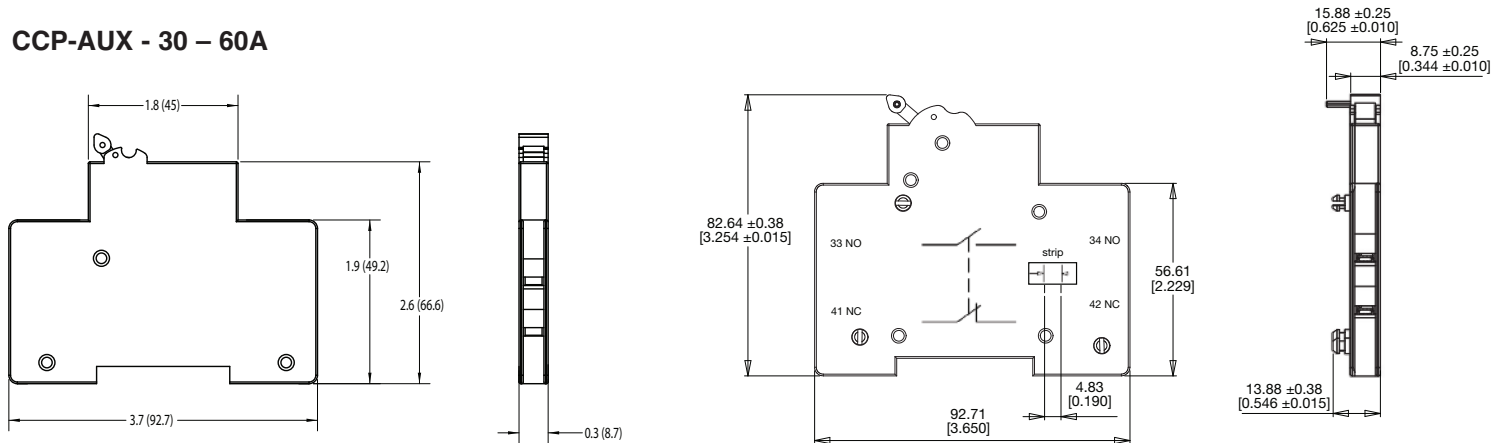
## CCP with CUBEFuse - 100A



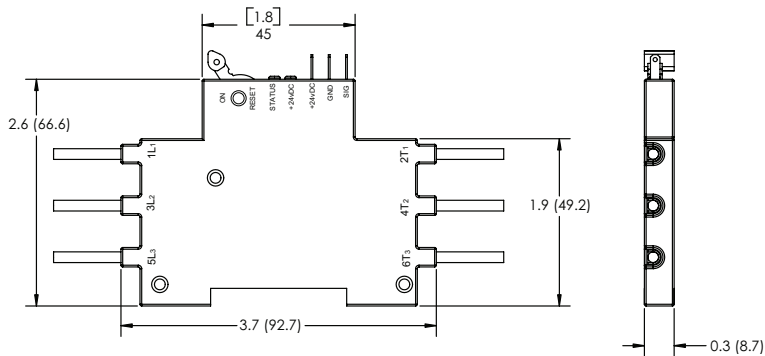
# Compact Circuit Protector (CCP)

UL Class CC, Midget and IEC 10x38 fuses, and CUBEFuse

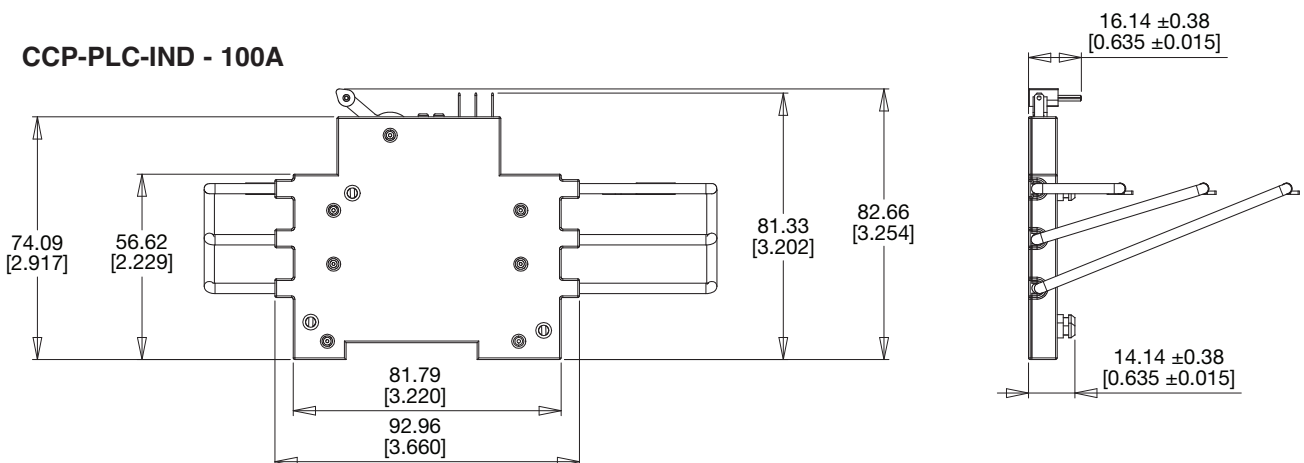
## CCP-AUX - 30 – 60A



## CCP-PLC-IND - 30 – 60A



## CCP-PLC-IND - 100A



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Наши преимущества:

- Поставка оригинальных импортных электронных компонентов напрямую с производств Америки, Европы и Азии, а так же с крупнейших складов мира;
- Широкая линейка поставок активных и пассивных импортных электронных компонентов (более 30 млн. наименований);
- Поставка сложных, дефицитных, либо снятых с производства позиций;
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- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Компания «Океан Электроники» является официальным дистрибьютором и эксклюзивным представителем в России одного из крупнейших производителей разъемов военного и аэрокосмического назначения «JONHON», а так же официальным дистрибьютором и эксклюзивным представителем в России производителя высокотехнологичных и надежных решений для передачи СВЧ сигналов «FORSTAR».



## JONHON

«JONHON» (основан в 1970 г.)

Разъемы специального, военного и аэрокосмического назначения:

(Применяются в военной, авиационной, аэрокосмической, морской, железнодорожной, горно- и нефтедобывающей отраслях промышленности)

«FORSTAR» (основан в 1998 г.)

ВЧ соединители, коаксиальные кабели, кабельные сборки и микроволновые компоненты:

(Применяются в телекоммуникациях гражданского и специального назначения, в средствах связи, РЛС, а так же военной, авиационной и аэрокосмической отраслях промышленности).



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