

# CVX surge protective device



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## Product application

Eaton CVX050 and CVX100 surge protective devices (SPDs) protect electronic equipment from damaging transients. These units are suitable for medium and low exposure level applications that require cost-effective, high-quality system protection including:

- Residential/small business
- Light industrial
- Light commercial
- Service entrance and branch panel protection
- OEM applications
- Control panels



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## General description



CVX050/100

With more than 20 years of experience in the surge suppression industry and extensive R&D initiatives, Eaton is considered a world leader in SPD manufacturing. All of Eaton's products are manufactured in an ISO® 9001:2000 and ISO 14001 certified facility.

Eaton CVX050/100 models are rugged, cost-effective, high-quality SPDs that feature self-protected metal oxide varistors (MOVs) that eliminate the failure characteristics of standard metal oxide varistors. The self-protected MOV is a fail-safe device that monitors the status of the metal oxide disk and disconnects itself from the power system when the disk is approaching breakdown.

The CVX050/100 is easy to install adjacent or even internal to electrical equipment. When installing an SPD in a retrofit environment, it is important to mount the device as close to the electrical equipment as possible. Keep the wiring (lead length) between the electrical equipment and the SPD as short as possible, and twist or wire tie the conductors together to reduce the wire's impedance factor.

## Features, functions, and benefits

- Large diameter, self-protected metal oxide varistors provide long life and fail-safe operation
- Rated 50 kA (CVX050) or 100 kA (CVX100) peak surge current
- Wide range of voltage applications from 100 to 600 Vac
- Rugged NEMA® 4X (IP56) enclosure
- LED monitoring of each phase
- Wiring systems: single-phase, split-phase, three-phase wye, three-phase delta, three-phase high leg delta, or direct current (DC)
- #10 AWG (6 mm<sup>2</sup>) stranded wire included
- ¾-inch threaded conduit fitting included
- Can be used for UL® 96A compliance
- Can be used for NFPA® 780 compliance
- Can be used for RoHS compliance
- Five-year free replacement warranty

## Optional features

- Available external mounting feet
- Available flush-mount plate

## Standards and certifications

- UL 1449 5th Edition and UL 1283 7th Edition listed for surge suppression devices
- CE marked
- CE and UL on AC unit only
- Vibration tested to IEC 60255-21-1 and IEC 60255-21-2

## Dimensions in inches (mm)

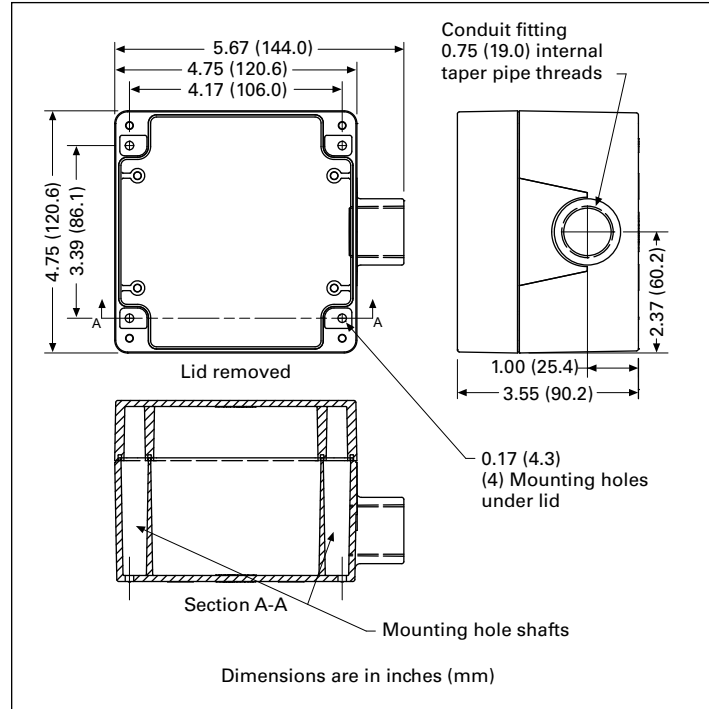


Figure 1. Standard dimensions

## Product specifications

**Table 1. CVX050/100 model specifications**

Description	Specification
Peak kA per phase	CVX050 = 50 kA; CVX100 = 100 kA ①
Peak kA per mode	50
Nominal discharge current	20 kA ②
Short-circuit current rating	100 kA
Single-phase voltages	200, 208, 220, 230, 240, 277, 380, 400, 440, 460, 480 Vac
Split-phase voltages	100/200, 110/220/ 120/240 Vac
High-leg delta voltages	240 Vac
Wye system voltages	100/175, 110/190, 120/208, 127/220, 220/380, 230/400, 240/415, 277/480, 305/525, 347/600 Vac
Delta system voltages	200, 208, 220, 230, 240, 380, 400, 415, 440, 480, 525, 600 Vac
Direct current voltage ①	48 Vdc, 125 Vdc
Input power frequency	47–420 Hz (50/60 Hz typical)
Protection modes	Single-phase: L-N, N-G, L-G Split-phase: L-N, N-G, L-G, L-L High-leg delta: L-N, N-G, L-G, L-L, H-N, H-G, H-L Wye: L-N, N-G, L-G, L-L Delta: L-G, L-L Direct current (DC): L-L, L-G ①
Number of ports	1
Specific energy	100 kJ/ohm
Weight	≈2.0 lb (1.0 kg)
Operating temperature	–13 °F (–25 °C) to +140 °F (+60 °C)
Vibration tested	IEC 60255-21-1 and IEC 60255-21-2

① DC models only available in 50 kA.

② 480L, 600D, and 600Y units rated 10 kA  $I_n$ .

**Table 2. CVX050/100 voltage ratings**

Model	System configuration	Nominal system voltage (Vac)	MCOV				UL 1449-5 VPR ①				
			L-L	L-N	L-G	N-G	L-L	L-N	L-G	N-G	
CVX050											
230L	Single-phase two-wire + ground	200, 208, 220, 230, 240, 277	—	320	640	320	—	1200	1200	1200	
480L	Single-phase two-wire + ground	380, 400, 440, 460, 480	—	550	1100	550	—	1800	4000	1800	
240S	Split-phase three-wire + ground	100/200, 110/220, 120/240	300	150	300	150	1200	700	1200	800	
208Y	Three-phase wye (star) four-wire + ground	100/175, 110/190, 120/208, 127/220	300	150	300	150	1200	700	1200	800	
480Y	Three-phase wye (star) four-wire + ground	220/380, 230/400, 240/415, 277/480	640	320	640	320	2500	1200	2000	1200	
600Y	Three-phase wye (star) four-wire + ground	305/525, 347/600	840	420	840	420	2500	1500	2500	1500	
240D	Three-phase delta three-wire + ground	200, 208, 220, 230, 240	640	—	320	—	2000	—	1200	—	
240H	Three-phase high-leg delta	240	300	150	150	640	1500	700	1200	700	
480D	Three-phase delta three-wire + ground	380, 400, 415, 440, 480	1100	—	550	—	3000	—	1800	—	
600D	Three-phase delta three-wire + ground	525, 600	1100	—	700	—	3000	—	2500	—	
048DC	Direct current	48 Vdc ②	130	—	65	—	—	—	—	—	
125DC	Direct current	125 Vdc ②	288	—	144	—	—	—	—	—	
CVX100											
230L	Single-phase two-wire + ground	200, 208, 220, 230, 240, 277	—	320	320	320	—	1200	1200	1200	
480L	Single-phase two-wire + ground	380, 400, 440, 460, 480	—	550	550	550	—	1800	1800	1800	
240S	Split-phase three-wire + ground	100/200, 110/220, 120/240	300	150	150	150	1200	700	800	700	
208Y	Three-phase wye (star) four-wire + ground	100/175, 110/190, 120/208, 127/220	300	150	150	150	1000	600	700	700	
480Y	Three-phase wye (star) four-wire + ground	220/380, 230/400, 240/415, 277/480	640	320	320	320	1800	1200	1200	1200	
600Y	Three-phase wye (star) four-wire + ground	305/525, 347/600	840	420	420	420	2500	1500	1500	1500	
240D	Three-phase delta three-wire + ground	200, 208, 220, 230, 240	640	—	320	—	1800	—	1200	—	
240H	Three-phase high-leg delta	240	300	150	150	150	1200	700	700	700	
480D	Three-phase delta three-wire + ground	380, 400, 415, 440, 480	1100	—	550	—	3000	—	1800	—	

① UL 1449 5th Edition VPR (voltage protection rating) test environment: all tests performed with 6-inch lead length, positive polarity.

② DC Units available in 50 kA only. Voltages shown are the maximum suggested operating voltages and are not UL certified.

Product ordering guidelines

CVX 050 230L	
Per phase peak surge current	Configuration and voltage ranges
050 = 50 kA	230L = Single-phase—200, 208, 220, 230, 240, 277 Vac
100 = 100 kA ①	480L = Single-phase—380, 400, 440, 460, 480 Vac
	240S = Split-phase—100/200, 110/220, 120/240 Vac
	240H = Three-phase high-leg delta—120/240 Vac
	208Y = Three-phase wye (star)—100/174, 110/190, 120/208, 127/220 Vac
	480Y = Three-phase wye (star)—220/380, 230/400, 240/415, 277/480 Vac
	600Y = Three-phase wye (star)—305/525, 347/600 Vac
	240D = Three-phase delta—200, 208, 220, 230, 240 Vac
	480D = Three-phase delta—380, 400, 415, 440, 480 Vac
	600D = Three-phase delta—525, 600 Vac (600D available in 50 kA only)
	048DC = Direct current—48 Vdc ①
	125DC = Direct current—125 Vdc ①

① DC models only available in 50 kA.

CVX050/100 accessories

Table 3. CVX050/100 accessories

Description	Catalog number
External mounting feet	MNTGFTX
Flush-mount plate	FLUSHMNTPLATE12

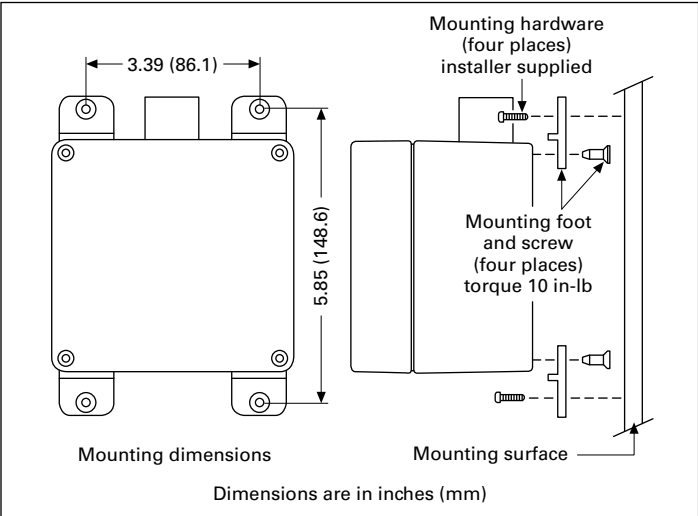


Figure 2. Wall mounting with external mounting feet

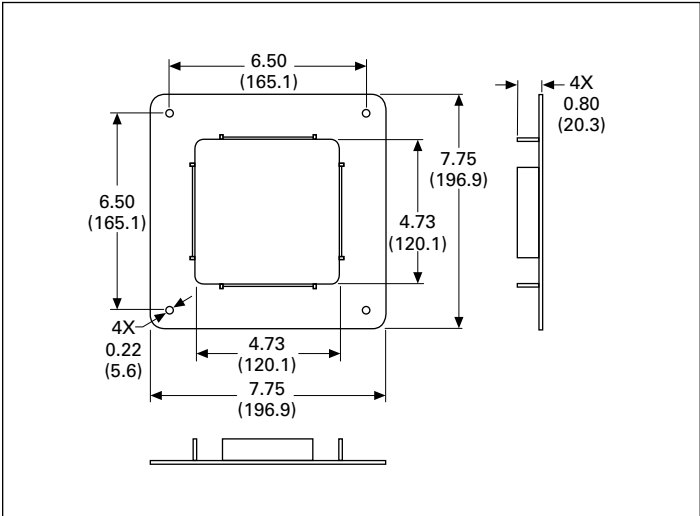


Figure 3. Optional flush-mount plate

For more information, please contact the Eaton Technical Resource Center at 1-800-809-2772, option 5, option 2. You may submit inquiries via email to [spd@eaton.com](mailto:spd@eaton.com) and you can find more information at [Eaton.com/spc](http://Eaton.com/spc)

Eaton  
1000 Eaton Boulevard  
Cleveland, OH 44122  
United States  
Eaton.com  
  
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