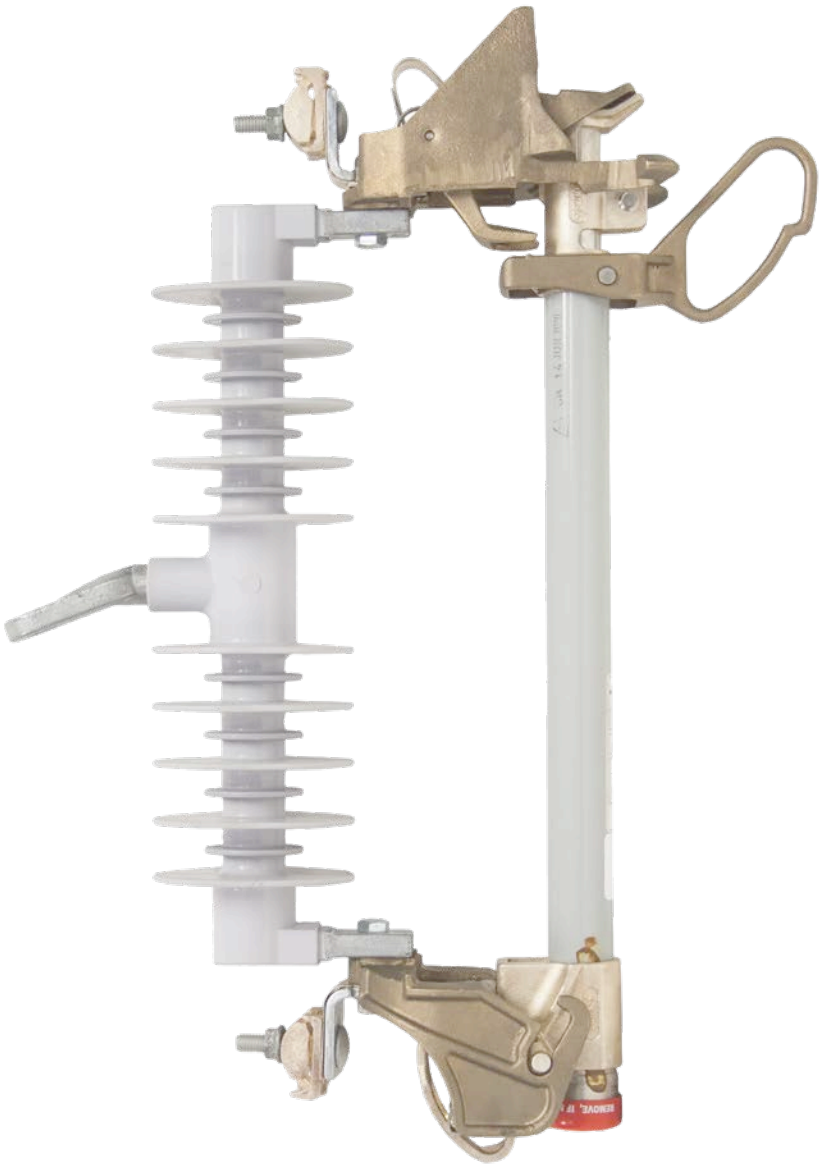
Fusing Equipment
Catalog Data
CA132065EN

Effective March 2023
Supersedes December 2021

COOPER POWER
SERIES

UltraSIL polymer-insulated CMU outdoor fuse open distribution cutout



Powering Business Worldwide

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Description

Eaton has set a standard of excellence for polymer distribution cutouts with its Cooper Power™ series UltraSIL™ polymer-insulated cutouts. Our premium UltraSIL polymer-insulated cutout incorporates an industry recognized silicone rubber insulating material with superior hydrophobic qualities. Eaton offers cutout polymer designs, which provide reliable overcurrent protection for primary distribution circuits. Overcurrent protection safeguards an electrical system from excessive currents produced by abnormal conditions such as faults, line or equipment overloads, or equipment failures. Polymer cutouts are ruggedly constructed and will provide full-range overcurrent protection.

Polymer CMU fuse cutouts are available in 17 kV and 27 kV voltage ratings.

UltraSIL polymer-insulated CMU fuse cutouts have been tested to, and meet or exceed all requirements set forth by IEEE® Std C37.41™-2008 and IEEE Std C37.42™-2009.

Compatibility

- X-Limiter™ hinge-mounted current-limiting fuse (CA132054EN)
- S+C Electric Co. (Type SMD-20)

Design features

The backbone of the UltraSIL polymer-insulated cutout is comprised of an E-glass fiberglass rod with crimped-on galvanized steel hanger and end fittings. The crimping process results in a robust design capable of withstanding numerous opening and closing operations and the severe forces present during fault current interruptions. The frame is over molded with the industry-leading, track-resistant, UltraSIL silicone rubber polymer housing. Independent laboratory tests have verified the superiority of silicone rubber in terms of resistance to UV degradation, surface tracking/performance in contaminated environments, and other important insulating properties. The complete cutout assembly works together as a system and will stand up to years of exposure to environmental extremes.

The cast bronze lower hinge assembly has deep pockets for the trunnion to pivot and minimize accidental fuse removal. The rugged design with wide opening means easy fuseholder installation and removal. The lower contact assembly utilizes stainless-steel backup springs and silver-to-silver contacts to minimize contact resistance and ensure excellent continuous contact throughout the life of the cutout. Silver-to-silver top contacts are again used to minimize contact resistance. The CMU fuse cutout design develops high contact pressure to ensure excellent contact for operating currents.

Lubricant is applied to all current interchange points. All hardware is designed to interlock during assembly to ensure correct alignment. The rugged design ensures smooth operation and long life.

Application

Proper cutout application requires several major system considerations: system operating voltage, insulation level, type of system grounding, maximum available fault current the cutout with CMU fuse may be subjected to, and anticipated maximum continuous load current.

The polymer CMU fuse cutout voltage rating is the maximum design voltage of the cutout. It can be applied, without restrictions, on any three-phase system that has system line-to-line voltage less than or equal to the cutout rating. CMU fuse cutouts can also be applied on single-phase or three-phase solidly grounded wye connected circuits. The circuit can have line-to-neutral voltages up to the voltage rating of the cutout as long as the maximum recovery voltage does not exceed the cutout's rating.

The basic impulse insulation level (BIL) of a cutout should be coordinated with the insulation of other connected apparatus. The cutout selected should have a continuous current rating sufficient to handle the expected load.

When selecting a cutout or fuse, it is important to consider future load growth and other planned system expansion.

Electrical ratings

Electrical insulation ratings for the polymer CMU fuse cutouts are shown in Table 1.

All cutouts have been tested in accordance with IEEE Std C37.41™-2008 and IEEE Std C37.42™-2009.

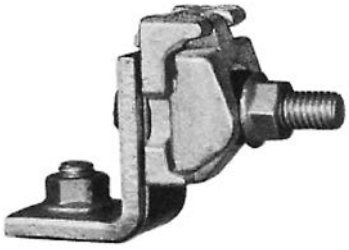


Figure 1. Parallel-groove connector

Figure 2. Eyebolt connector

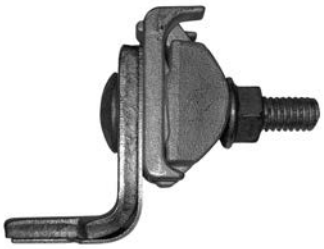


Figure 3. Parallel-groove connector with captive bolt

Table 1. 17 kV and 27 kV polymer CMU outdoor fuse cutout specifications

Base catalog number ① ② Polymer	Maximum voltage rating (kV)	BIL (kV)	Creep distance inches (mm) inches (mm)	Approximate weight lb (kg)
S4CMU	17	150	22.3 (566.0)	11.3 (5.1)
S9CMU	27 ③	150	27.0 (686.0)	11.5 (5.2)

① Base catalog number for standard polymer-insulated unit. See Table 3 for optional connectors and brackets.

② Compatible with X-Limiter—see Catalog CA132054EN.

③ Maximum voltage rating compatible with 29 kV.

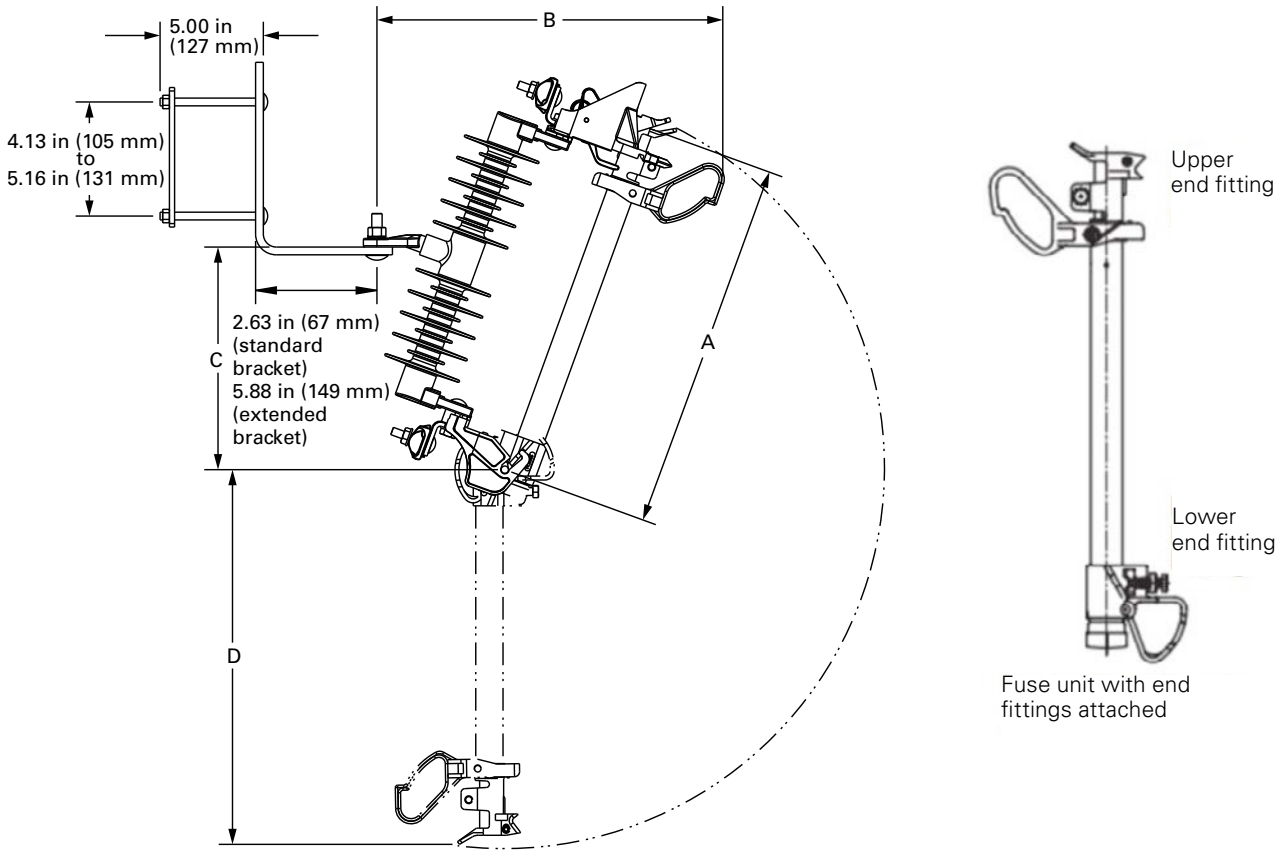


Figure 4. Polymer-insulated CMU fuse cutout assembly

Table 2. UltraSIL polymer-insulated dimensional data

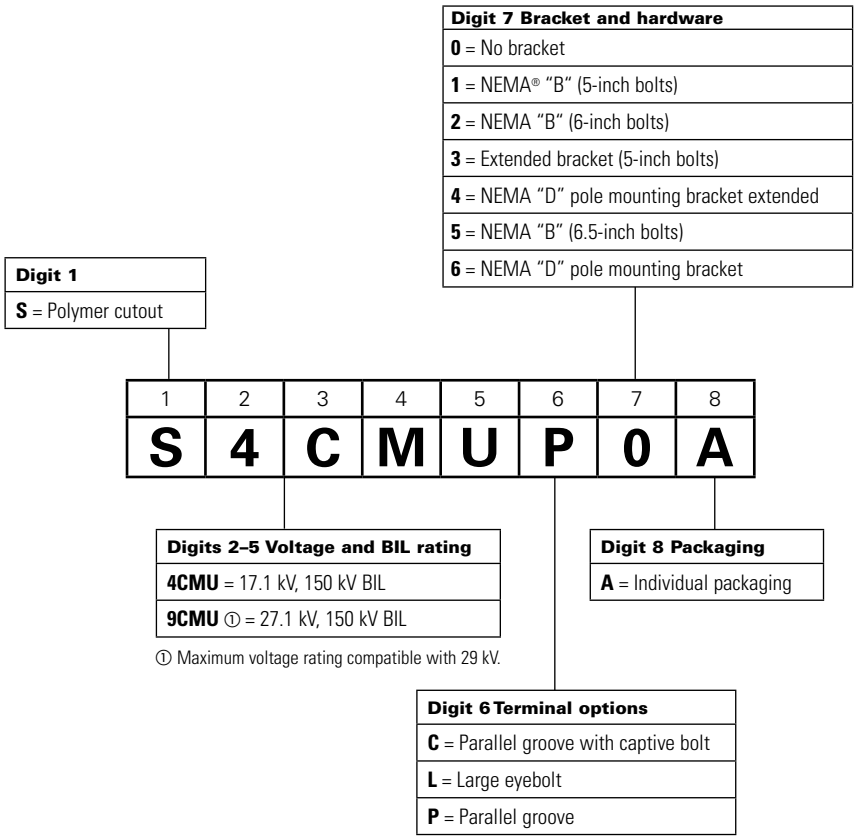
Voltage rating kV	BIL kV	Dimensions inches (mm)			
		A	B	C	D
17.1	150	17.91 (455.0)	16.74 (425.0)	10.77 (274.0)	18.13 (461.0)
27.1 ①	150	21.13 (537.0)	17.25 (438.0)	12.63 (321.0)	21.88 (556.0)

① Maximum voltage rating compatible with 29 kV.

Ordering information

To order a complete CMU fuse cutout, choose the appropriate part number from Table 3. The CMU cutout comes with end fittings compatible with CMU and X-Limiter hinge-mounted applications.

Table 3. Polymer-insulated CMU fuse cutout mounting frame



Note: Add a "N" in digit 9 to order the cutout frame without the end fittings.

Table 4. Replacement outdoor end fittings

Base catalog number Polymer	Maximum voltage rating (kV)	BIL (kV)	Fuse replacement end fittings
S4CMU	17	150	CMU3095
S9CMU	27 ①	150	CMU3095

① Maximum voltage rating compatible with 29 kV.

Additional information

Refer to the following reference literature for more information:

MN132034EN	CMU outdoor fuseholder open distribution cutout installation instructions
CA132054EN	X-Limiter hinge-mounted current-limiting fuse

Contact your Eaton representative for further information.

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