

MG24541 Supplementary Protector

SUPPLEMENTARY PROTECTOR , 480Y/277VAC, 20A, CIRCUIT BREAKER TYPE: STANDARD

Image not available

- [Product Information](#)

Features and Specifications

For Use With: OEM Panels

Approvals: UL 1077 Recognized, IEC 60947-2 Rated

Catalog Reference Number: 0860CT0201

Circuit Breaker Type: Standard

Ampere Rating: 20A

General Application: Overcurrent protection within appliances or electrical equipment where branch circuit breaker protection is provided or not required

Specific Application: Protection for loads with high inrush currents (motors, transformers, etc.)

Marketing Trade Name: Multi 9

Voltage Rating: 480Y/277VAC

Mounting Type: DIN Rail (35mm)

Weight: 11.55 Ounces

Number of Poles: 3-Pole

Short Circuit Current Rating: 10kA@240VAC - 5kA@480Y/277VAC

Trip Curve: D Curve - Magnetic operates between 10 to 14 times

Type: C60N

Width: 2.13 Inches (54mm)

Height: 3.19 Inches (81mm)

Wire Size: #14 to #4 AWG (Cu)

Depth: 3.00 Inches (76mm)

Ordering and Shipping Information

- **Category** 00908 - Supplemental Circuit Protectors, 1 Pole: 15 - 63 Amp, 2 Pole: 1 - 63 Amp, 3 Pole: 1 - 63 Amp, 4 Pole: 1 - 63 Amp, Type Multi 9 C60
- **Discount Schedule** DE2
- **Article Number** 785901881414
- **Package Qty** 1
- **Weight (lbs.)** 0.77
- **Availability Code** S
- **Returnability** Y

| 1 POLE (277VAC/65VDC) | | | |
|-----------------------|----------------|---------|---------|
| RATING (AMPS) | CATALOG NUMBER | | |
| | B CURVE | C CURVE | D CURVE |
| 1 | MG24110 | MG24425 | MG24500 |
| 2 | MG24111 | MG24426 | MG24501 |
| 3 | MG24112 | MG24427 | MG24502 |
| 4 | MG24113 | MG24428 | MG24503 |
| 6 | MG24114 | MG24430 | MG24504 |
| 8 | MG24115 | MG24431 | MG24505 |
| 10 | MG24116 | MG24432 | MG24506 |
| 13 | MG24117 | MG24433 | MG24507 |
| 16 | MG24118 | MG24434 | MG24508 |
| 20 | MG24119 | MG24435 | MG24509 |
| 25 | MG24120 | MG24436 | MG24510 |
| 32 | MG24121 | MG24437 | MG24511 |
| 40 | MG24122 | MG24438 | MG24512 |
| 50 | MG24123 | MG24439 | MG24513 |
| 63 | MG24124 | MG24440 | MG24514 |

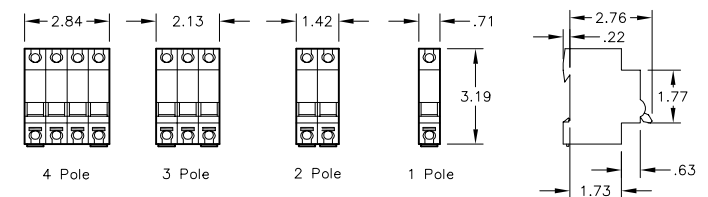
| 3 POLE (240VAC/480Y,277VAC) | | | |
|-----------------------------|----------------|---------|---------|
| RATING (AMPS) | CATALOG NUMBER | | |
| | B CURVE | C CURVE | D CURVE |
| 1 | MG24140 | MG24459 | MG24532 |
| 2 | MG24141 | MG24460 | MG24533 |
| 3 | MG24142 | MG24461 | MG24534 |
| 4 | MG24143 | MG24462 | MG24535 |
| 6 | MG24144 | MG24464 | MG24536 |
| 8 | MG24145 | MG24465 | MG24537 |
| 10 | MG24146 | MG24466 | MG24538 |
| 13 | MG24147 | MG24467 | MG24539 |
| 16 | MG24148 | MG24468 | MG24540 |
| 20 | MG24149 | MG24469 | MG24541 |
| 25 | MG24150 | MG24470 | MG24542 |
| 32 | MG24151 | MG24471 | MG24543 |
| 40 | MG24152 | MG24472 | MG24544 |
| 50 | MG24153 | MG24473 | MG24545 |
| 63 | MG24154 | MG24474 | MG24546 |

| 2 POLE (240VAC/480Y,277VAC/125VDC) | | | |
|------------------------------------|----------------|---------|---------|
| RATING (AMPS) | CATALOG NUMBER | | |
| | B CURVE | C CURVE | D CURVE |
| 1 | MG24125 | MG24442 | MG24516 |
| 2 | MG24126 | MG24443 | MG24517 |
| 3 | MG24127 | MG24444 | MG24518 |
| 4 | MG24128 | MG24445 | MG24519 |
| 6 | MG24129 | MG24447 | MG24520 |
| 8 | MG24130 | MG24448 | MG24521 |
| 10 | MG24131 | MG24449 | MG24522 |
| 13 | MG24132 | MG24450 | MG24523 |
| 16 | MG24133 | MG24451 | MG24524 |
| 20 | MG24134 | MG24452 | MG24525 |
| 25 | MG24135 | MG24453 | MG24526 |
| 32 | MG24136 | MG24454 | MG24527 |
| 40 | MG24137 | MG24455 | MG24528 |
| 50 | MG24138 | MG24456 | MG24529 |
| 63 | MG24139 | MG24457 | MG24530 |

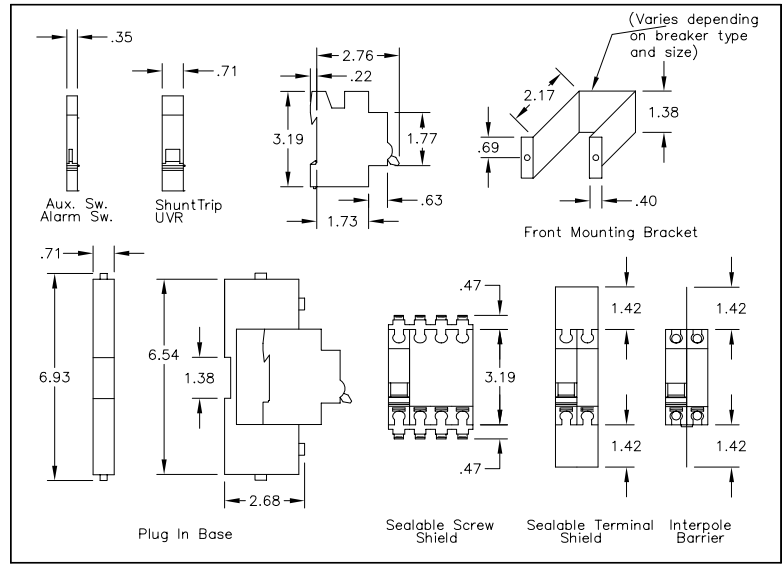
| 4 POLE (240VAC/480Y,277VAC) | | | |
|-----------------------------|----------------|---------|---------|
| RATING (AMPS) | CATALOG NUMBER | | |
| | B CURVE | C CURVE | D CURVE |
| 1 | MG24155 | MG24476 | MG24548 |
| 2 | MG24156 | MG24477 | MG24549 |
| 3 | MG24157 | MG24478 | MG24550 |
| 4 | MG24158 | MG24479 | MG24551 |
| 6 | MG24159 | MG24481 | MG24552 |
| 8 | MG24160 | MG24482 | MG24553 |
| 10 | MG24161 | MG24483 | MG24554 |
| 13 | MG24162 | MG24484 | MG24555 |
| 16 | MG24163 | MG24485 | MG24556 |
| 20 | MG24164 | MG24486 | MG24557 |
| 25 | MG24165 | MG24487 | MG24558 |
| 32 | MG24166 | MG24488 | MG24559 |
| 40 | MG24167 | MG24489 | MG24560 |
| 50 | MG24168 | MG24490 | MG24561 |
| 63 | MG24169 | MG24491 | MG24562 |

TRIPPING CHARACTERISTICS (MAGNETIC SETTINGS):
 B CURVE - 3.2 and 4.8 times ampere rating
 C CURVE - 7 and 10 times ampere rating
 D CURVE - 10 and 14 times ampere rating

| WEIGHT |
|------------------------|
| 1 POLE (3.85oz./110g) |
| 2 POLE (7.70oz./220g) |
| 3 POLE (11.55oz./330g) |
| 4 POLE (15.40oz./440g) |



C60 Accessories



Catalog Number: C60N
 Ratings: SEE CHART
 UL File/CCN: E90509
 CSA File/Class: LR80849
 Meets Standards: IEC 947.2/VDE 0660
 Weight: SEE CHART
 Wire Size: 1 to 25A #18-#4AWG/32 to 63A #18-#2AWG
 Terminal torque: -
 Mounting Hwd.: 35mm DIN rail or front mounted

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MULTI 9 SUPPLEMENTARY PROTECTORS / ACCESSORIES C60N



DWG# NO. MULTI9_1-4P_63A_OUTLINE_001

Section 1—Introduction

Multi 9™ Products for Equipment Applications

The Multi 9 modular system of miniature circuit breakers and supplementary protectors, accessories, and peripherals provides complete protection of equipment or especially sensitive circuits within the equipment. Installation labor and space are both minimized by the modular architecture of the Multi 9 system, whether a single protective device or multiple devices with their accessories are being used.

Schneider Electric offers an extensive line of UL 489 Circuit Breakers and UL 1077 Supplementary Protectors. In addition, a variety of IEC certified Circuit Breakers and Accessories are available for OEM's whose products are destined for export beyond North America. To an OEM, this means that one family of electrical protection products can be used regardless of equipment destination.

The Standards include:

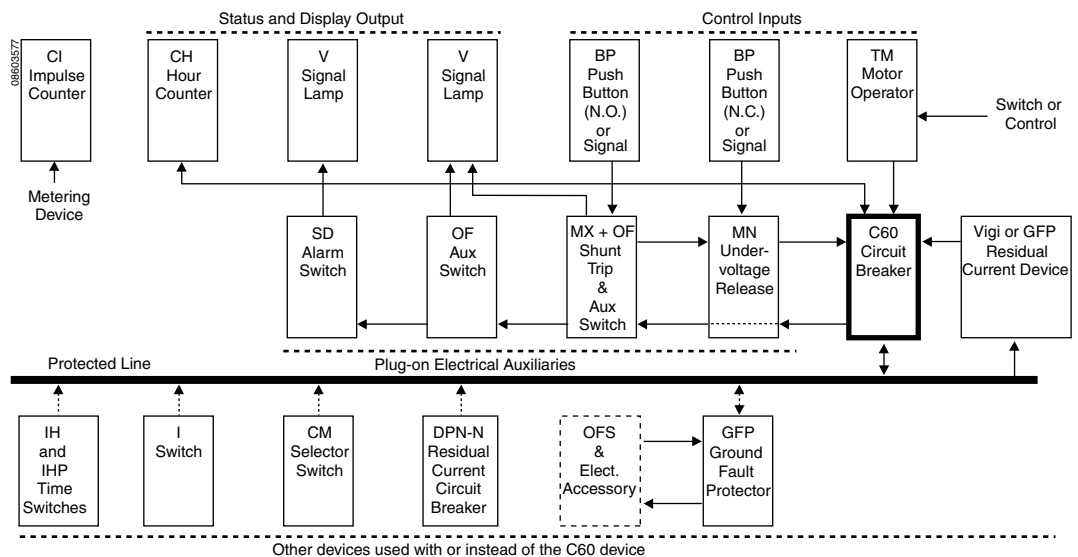
- UL 489 Standard for Circuit Breakers
- UL 489A Standard for DC Communication Applications
- UL 1077 Standard for Supplementary Protectors
- UL 1053 Ground Fault Sensing and Relaying Equipment
- IEC 60947-2 Low-voltage switchgear and controlgear - Part 2: Circuit-breakers
- CSA C22.2 No. 5 Standard for Circuit Breakers
- CSA C22.2 No. 235 Supplementary Protectors
- CCC Pending 4Q2007
- C60 Miniature Circuit Breakers are RoHS Compliant

Potential applications include semi-conductor machines, communication equipment, process control panels, computers, medical equipment, electronic controls, transformers, power supplies, and other electrical equipment.

System Flexibility

The Multi 9 System includes an extensive line of field-installable accessories. Plug-on electrical auxiliaries include shunt trip, undervoltage release, auxiliary switch, and alarm switch. Other protection devices include residual current devices, dc circuit breakers, and switches. Control and display devices include signal lamps, push buttons, and motor operators. There are also mechanical accessories for locking, operating, shielding, mounting, etc. The following diagram shows many of the Multi 9 system accessories.

Figure 1: Functional Diagram of Multi 9 System



Multi 9™ System Catalog

Section 2—UL and CSA Rated Protection Devices

Figure 4: UL 1077 Recognized C60N Supplementary Protectors



Table 3: Specifications for UL 1077 Recognized Supplementary Protectors

| Ratings per UL Standards | | | UL 1077 C60N | | | |
|--|----------|--------------|---|----------|-----------|-----------|
| Number of Poles | | | 1P | 2P | 3P | 4P |
| Rated Current at 77°F (25°C) | | | 0.5–63 A | 0.5–63 A | 0.5–63 A | 0.5–63 A |
| Interrupting Ratings as per UL 1077 | 50/60 Hz | 120 Vac | 10 kA | — | — | — |
| | | 240 Vac | 10 kA | 10 kA | 10 kA | 10 kA |
| | | 277 Vac | 5 kA | — | — | — |
| | | 480Y/277 Vac | — | 5 kA | 5 kA | 5 kA |
| — | — | 65 Vdc | 10 kA | — | — | — |
| | | 125 Vdc | — | 10 kA | — | — |
| Ultimate Breaking Capacity (I _{cu}) as per IEC 60947-2 | 50/60 Hz | 240 Vac | 10 kA | 20 kA | 20 kA | 20 kA |
| | | 415 Vac | 3 kA | 10 kA | 10 kA | 10 kA |
| | | 440 Vac | — | 6 kA | 6 kA | 6 kA |
| Service Breaking Capacity (I _{cs}) (%I _{cu}) | | | 75% | 75% | 75% | 75% |
| Plug-On Auxiliary Modules with Mechanical Linkage: | | | MN Undervoltage Trip MX + OF Shunt Trip/Auxiliary Switch OF Auxiliary Switch SD Alarm Switch | | | |
| Magnetic Setting | B Curve | | Between 3.2 and 4.8 Times Ampere Rating | | | |
| | C Curve | | Between 7 and 10 Times Ampere Rating (Between 7 and 14 for dc) | | | |
| | D Curve | | Between 10 and 14 Times Ampere Rating (No DC Rating for D Curve) | | | |
| Dimensions (in./mm) | Width | | 0.71/18 | 1.42/36 | 2.13/54 | 2.84/72 |
| | Height | | 3.19/81 | 3.19/81 | 3.19/81 | 3.19/81 |
| | Depth | | 3.00/76 | 3.00/76 | 3.00/76 | 3.00/76 |
| Weight (oz./g) | | | 3.85/110 | 7.70/220 | 11.55/330 | 15.40/440 |

Multi 9™ System Catalog

Section 2—UL and CSA Rated Protection Devices

UL 1077 Recognized C60 Supplementary Protectors

The UL 1077 products are intended for use as supplementary protectors to provide overcurrent protection within appliances or electrical equipment where branch circuit protection is already provided or is not required.

As shown in the table of catalog numbers below, the UL 1077 Recognized products are available in B, C and D curves. They include devices ranging from 0.5 A to 63 A.

Figure 6: UL 1077 Recognized C60N Supplementary Protectors



Table 13: Specifications for UL 1077 Recognized C60 Supplementary Protectors

| | | |
|--|---|--|
| Package Size | 0.71 in. (18 mm) | Width per Pole |
| Voltage | Nominal Voltage | 480Y/277 Vac |
| | High Voltage Withstand | 6 kV |
| Connection, Box Lug UL 486A File No. E90509 Pending | Cable: 0.5–25 A: 14–4 AWG (2–25 mm ²) Cu Only | Torque 22 lb-in (2.49 N•m) |
| | Cable: 30–63 A: 14–2 AWG (2–35 mm ²) Cu Only | Torque 31 lb-in (3.50 N•m) |
| Optional Ring Terminal Kit | Screw Dia.: 0.2 in. (5mm) | Torque 18 lb-in (2.03 N•m) |
| Mounting | 35 mm DIN rail | |
| Time-Current Curves | B, C, and D Curves | |
| Degree of Protection as per IEC 68-2-30 | Case | IP40 as per IEC 529 |
| | Terminals | IP20 |
| Temperatures | Calibration | 25°C (77°F) |
| | Storage | -40 to 80°C (-40 to 176°F) |
| | Operating | -30 to 70°C (-22 to 158°F) |
| Tropicalization | Treatment 2 | Relative Humidity: 95% at 131°F (55°C) |
| Number of Operating Cycles: | Electrical (O-C) | 10,000 at 0.5–63 A |

See Specification Table 3 for dimensions, weights and interrupting ratings

Standards

- UL 1077 Circuit Breaker, File No. E90509
- CSA C22.2 No. 235-M89 File No. 179014
- IEC 60947-2
- VDE 0660
- CE Marked

Standard Features

- Trip-free mechanism: Contacts cannot be held in the on position when the C60 is tripped automatically.
- Positive indication of contact disconnect. Green mechanical indication on front face of device shows that all poles are open.
- B curve: Overcurrent protection for sensitive equipment (computers, electronic devices, etc.). Magnetic release operates between 3.2 and 4.8. (between 3.2 and 6.8 for dc)
- C curve: Overcurrent protection for all application types. Magnetic release operates from 7 to 10 times ampere rating. (between 7 and 14 for dc)
- D curve: Overcurrent protection for loads with high inrush currents (motors, transformers). Magnetic release operates between 10 and 14 times ampere rating. (no dc rating)
- Allows locking in O-OFF position using padlock attachment.
- Suitable for reverse feeding.

For rating and dimensional information, see Table 3, “Specifications for UL 1077 Recognized Supplementary Protectors”

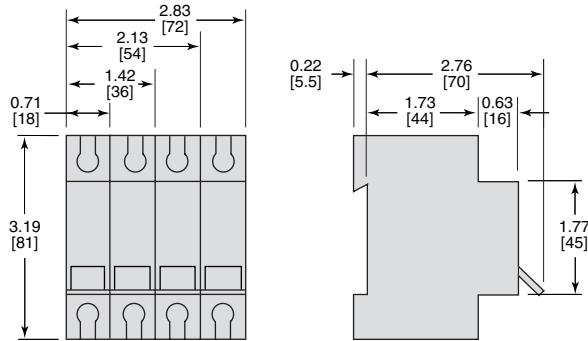
Catalog Numbers

Table 14: Catalog Numbers for UL 1077 Recognized C60N Supplementary Protectors

| Rating | B Curve | | | | C Curve | | | | D Curve | | | |
|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| | 1P | 2P | 3P | 4P | 1P | 2P | 3P | 4P | 1P | 2P | 3P | 4P |
| 0.5 A | — | — | — | — | MG17411 | — | — | — | MG17421 | — | — | — |
| 1 A | MG24110 | MG24125 | MG24140 | MG24155 | MG24425 | MG24442 | MG24459 | MG24476 | MG24500 | MG24516 | MG24532 | MG24548 |
| 1.2 A | MG17402 | MG17432 | — | — | MG17412 | MG17442 | — | — | MG17422 | MG17452 | — | — |
| 1.5 A | MG17403 | MG17433 | — | — | MG17413 | MG17443 | — | — | MG17423 | MG17453 | — | — |
| 2 A | MG24111 | MG24126 | MG24141 | MG24156 | MG24426 | MG24443 | MG24460 | MG24477 | MG24501 | MG24517 | MG24533 | MG24549 |
| 3 A | MG24112 | MG24127 | MG24142 | MG24157 | MG24427 | MG24444 | MG24461 | MG24478 | MG24502 | MG24518 | MG24534 | MG24550 |
| 4 A | MG24113 | MG24128 | MG24143 | MG24158 | MG24428 | MG24445 | MG24462 | MG24479 | MG24503 | MG24519 | MG24535 | MG24551 |
| 5 A | MG17404 | MG17434 | — | — | MG17414 | MG17444 | — | — | MG17424 | MG17454 | — | — |
| 6 A | MG24114 | MG24129 | MG24144 | MG24159 | MG24430 | MG24447 | MG24464 | MG24481 | MG24504 | MG24520 | MG24536 | MG24552 |
| 7 A | MG17405 | MG17435 | — | — | MG17415 | MG17445 | — | — | MG17425 | MG17455 | — | — |
| 8 A | MG24115 | MG24130 | MG24145 | MG24160 | MG24431 | MG24448 | MG24465 | MG24482 | MG24505 | MG24521 | MG24537 | MG24553 |
| 10 A | MG24116 | MG24131 | MG24146 | MG24161 | MG24432 | MG24449 | MG24466 | MG24483 | MG24506 | MG24522 | MG24538 | MG24554 |
| 13 A | MG24117 | MG24132 | MG24147 | MG24162 | MG24433 | MG24450 | MG24467 | MG24484 | MG24507 | MG24523 | MG24539 | MG24555 |
| 15 A | MG17406 | MG17436 | MG17461 | — | MG17416 | MG17446 | MG17466 | — | MG17426 | MG17456 | MG17471 | — |
| 16 A | MG24118 | MG24133 | MG24148 | MG24163 | MG24434 | MG24451 | MG24468 | MG24485 | MG24508 | MG24524 | MG24540 | MG24556 |
| 20 A | MG24119 | MG24134 | MG24149 | MG24164 | MG24435 | MG24452 | MG24469 | MG24486 | MG24509 | MG24525 | MG24541 | MG24557 |
| 25 A | MG24120 | MG24135 | MG24150 | MG24165 | MG24436 | MG24453 | MG24470 | MG24487 | MG24510 | MG24526 | MG24542 | MG24558 |
| 30 A | MG17407 | MG17437 | MG17462 | — | MG17417 | MG17447 | MG17467 | — | MG17427 | MG17457 | MG17472 | — |
| 32 A | MG24121 | MG24136 | MG24151 | MG24166 | MG24437 | MG24454 | MG24471 | MG24488 | MG24511 | MG24527 | MG24543 | MG24559 |
| 35 A | MG17408 | MG17438 | MG17463 | — | MG17418 | MG17448 | MG17468 | — | MG17428 | MG17458 | MG17473 | — |
| 40 A | MG24122 | MG24137 | MG24152 | MG24167 | MG24438 | MG24455 | MG24472 | MG24489 | MG24512 | MG24528 | MG24544 | MG24560 |
| 50 A | MG24123 | MG24138 | MG24153 | MG24168 | MG24439 | MG24456 | MG24473 | MG24490 | MG24513 | MG24529 | MG24545 | MG24561 |
| 60 A | MG17409 | MG17439 | MG17464 | — | MG17419 | MG17449 | MG17469 | — | MG17429 | MG17459 | MG17474 | — |
| 63 A | MG24124 | MG24139 | MG24154 | MG24169 | MG24440 | MG24457 | MG24474 | MG24491 | MG24514 | MG24530 | MG24546 | MG24562 |

UL 1077 Supplementary Protectors

Figure 29: C60 UL 1077 Supplementary Protectors



IEC Rated Circuit Breakers

Figure 30: IEC DPN-N Circuit Breaker

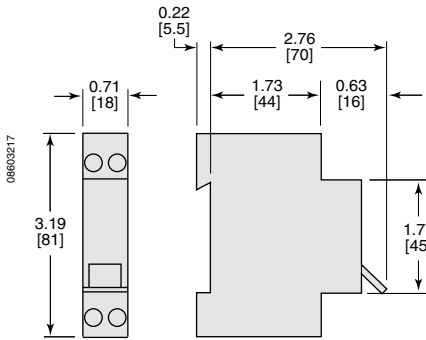
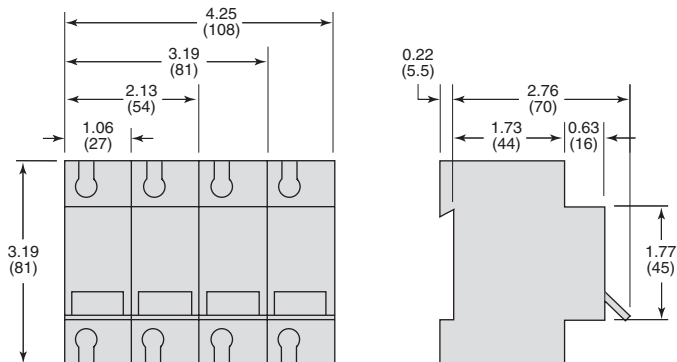


Figure 31: C60 IEC Circuit Breakers



Figure 32: C120 IEC Circuit Breaker



Dimensions: in.
(mm)