# UL 489 or UL 1077?
# What are your Circuit Protection Requirements?

**An understanding of circuit types and circuit protection products is critical to ensure their proper application.
See NEC Sections 100, 430 and 409 for definitions.**

**The proper sizing of an overcurrent protection device is the responsibility of the customer and should be determined using the application standards of the NEC (National Electric Code), CEC (Canadian Electrical Code) or other applicable standards. Per fine print note of 2008 NEC Section 100 "A current in excess of rating may be accommodated by certain equipment and conductors for a given set of conditions. Therefore, the rules for overcurrent protection are specific for particular situations."**

## UL 489
### Branch Protection

## UL 1077
### Supplementary Protection

## *What You Need to Know and Look For In Specifications*
*Certifications – Standards – Acceptance*

| UL 489 Branch Protection | UL 1077 Supplementary Protection |
|---|---|
| • UL 489 Listed or Recognized<br>• CSA C22.2 No. 5<br>• International ratings available depending on breaker type | • UL Recognized under UL 1077<br>• CSA 22.2 No. 285<br>• IEC 60947-2 or IEC 898 |
| ***Function*** | |
| • Opens automatically on Overload and Short Circuit when properly applied within its ratings<br>• Protects wire and cable against Overload and Short Circuit | • Opens automatically on Overload and Short Circuit<br>• Provides additional equipment protection where branch circuit protection is already provided or not required<br>• Not suitable for the protection of branch circuit conductors |
| ***Applications*** | |
| • Branch circuit protection in control panels, panelboards, switchboards and motor control centers<br>• Motor overload and motor short circuit protection (UL 489 Recognized motor circuit protectors) for control panels and motor control centers | • Used within appliances or other electrical equipment such as control circuits, control power transformers, relays, PLC I/O points and lighting circuits<br>• Ideal replacement for fuses that are applied as supplementary protection |
| ***Features*** | |
| • Bolted down or DIN rail mounted<br>• External handle mechanisms available<br>• Field mounted accessories<br>• Stand alone branch circuit protection<br>• Various levels of protection (curve type)<br>• High voltage and interruption levels (up to 100 kAIC @ 480V) | • DIN rail mounted<br>• Field mounted accessories<br>• Various levels of protection (curve type)<br>• 10 kAIC @ 240 VAC<br>• 10 kAIC @ 277 VAC and 5 kAIC @ 480VAC<br>• 10 kAIC @ 48VDC |

kAIC = thousands of Amps interrupt capacity

***Summary***

***A Supplementary Protector can't be used for Branch Circuit Protection.***
***Understanding the difference between Branch Circuit Protection and Supplementary Protection helps to ensure their proper use.***

Gladiator® from AutomationDirect

# Miniature Circuit Breakers (UL 489)

Single-Pole

Two-Pole

Three-Pole

## Overview

Gladiator miniature circuit breakers offer optimum and efficient protection for branch and control circuits up to 63 amps. The Gladiator series is available with B, C or D trip characteristics in accordance with UL 489. The Gladiator series units are DIN rail mountable and can be used in feeder and branch circuit applications.

## Listings

- UL Listed under UL 489 Category DIVQ E503708
- Category DIHS E509077
- CE LVD 2014/35/EU
- IEC/EN 60947-2

## Features and Benefits

- Dual rated for AC or DC applications
- Complete range of UL 489 listed DIN rail mounted miniature circuit breakers up to 63 amp current rating
- Single-pole, two-pole and three-pole models
- Suitable for reverse feed applications
- Suitable for branch circuit device protection
- Thermal-magnetic overcurrent protection – three levels of short circuit protection, categorized by B, C and D curves
- B-curve magnetic trip point: 3 to 5 times the rated current, typically used for resistive loads such as conductors or heaters.
- C-curve magnetic trip point: 5 to 10 times the rated current, typically used for small transformers, pilot devices, etc.
- D-curve magnetic trip point: 10 to 20 times the rated current, typically used for transformers or very high inductive loads.
- Trip-free design – breaker cannot be defeated by holding the handle in the "ON" position
- Captive screws cannot be lost
- Can also be used in applications for which UL 1077 or CSA C22.2 No.235 are also allowed
- Field installable shunt trip and auxiliary switches, side mountable
- Module width of only 18mm [0.71 in] (per pole)
- Contact position indicator (red / green)
- 35mm DIN rail mountable, utilizing spring clip

## Full Line of Field Installable Accessories

- Auxiliary switch
- Alarm/auxiliary switch
- Shunt trip
- Padlock provision

## Applications

- Feeder and Branch Circuit Protection
- PLC I/O points
- Motor control circuits
- Control instrumentation
- Power supplies
- Relays
- Convenience receptacle circuits (internal / external)
- Load circuits leaving the equipment (external)
- Computers
- UPS
- HACR Equipment (Heating Air Conditioning, Refrigeration)
- Power conditioners

# Gladiator from AutomationDirect Miniature Circuit Breakers

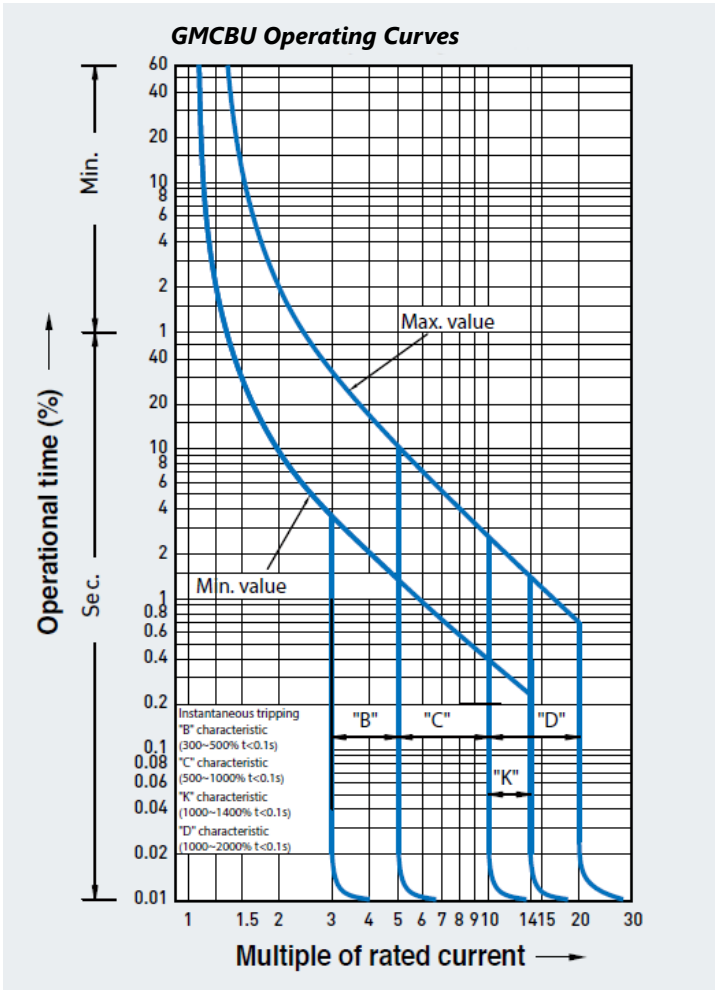
## Tripping Characteristics

Gladiator miniature circuit breakers are available with "B" or "C" or "D" tripping characteristics.

**Type B trip curve**
(3 to 5 times In)
B-curve devices are suitable for resistive loads such as conductors or heaters.

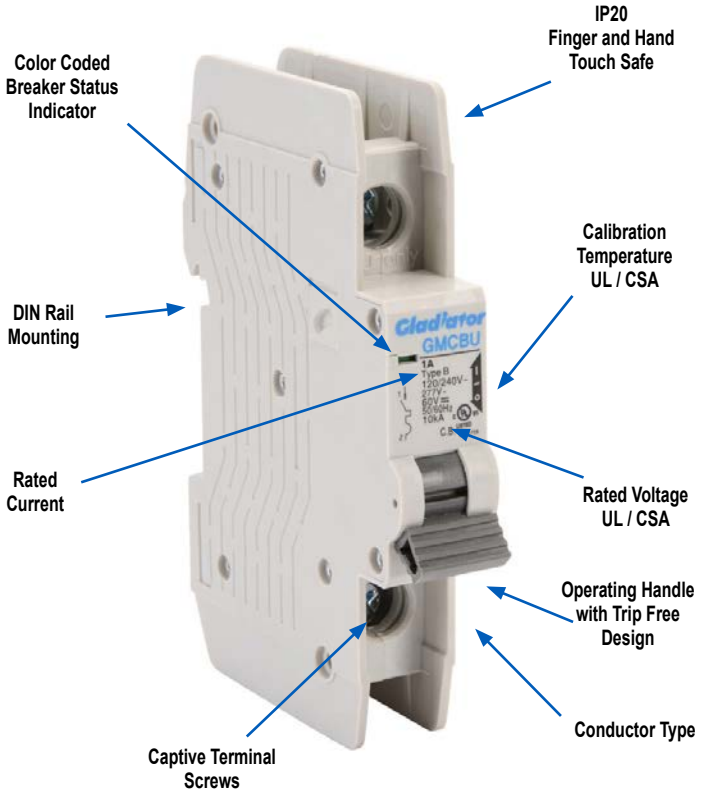
**Type C trip curve**
(5 to10 times In)
C-curve devices are suitable for applications where medium levels of inrush current are expected. Applications include small transformers, lighting, pilot devices, control circuits and coils. C-curve devices provide a medium magnetic trip point.

**Type D trip curve**
(10 to 20 times In)
D-curve devices are suitable for applications where high levels of inrush current are expected. The high magnetic trip point prevents nuisance tripping in high inductive applications such as motors, transformers and power supplies.




## Labeling

The front of each Gladiator miniature circuit breaker is labeled for positive identification.



# Gladiator® from AutomationDirect Miniature Circuit Breakers (UL 489)

Single-Pole

| Gladiator UL 489 Single-Pole 277 VAC Selection Guide | | | | | | |
|---|---|---|---|---|---|---|
| Ampere Rating | B-Curve Part Number | Price | C-Curve Part Number | Price | D-Curve Part Number | Price |
| 1 | GMCBU-1B-1 | $16.00 | GMCBU-1C-1 | $16.00 | GMCBU-1D-1 | $16.00 |
| 2 | GMCBU-1B-2 | $16.00 | GMCBU-1C-2 | $16.00 | GMCBU-1D-2 | $16.00 |
| 3 | GMCBU-1B-3 | $16.00 | GMCBU-1C-3 | $16.00 | GMCBU-1D-3 | $16.00 |
| 4 | GMCBU-1B-4 | $16.00 | GMCBU-1C-4 | $16.00 | GMCBU-1D-4 | $16.00 |
| 5 | GMCBU-1B-5 | $16.00 | GMCBU-1C-5 | $16.00 | GMCBU-1D-5 | $16.00 |
| 6 | GMCBU-1B-6 | $16.00 | GMCBU-1C-6 | $16.00 | GMCBU-1D-6 | $16.00 |
| 8 | GMCBU-1B-8 | $16.00 | GMCBU-1C-8 | $16.00 | GMCBU-1D-8 | $16.00 |
| 10 | GMCBU-1B-10 | $16.00 | GMCBU-1C-10 | $16.00 | GMCBU-1D-10 | $16.00 |
| 15 | GMCBU-1B-15 | $16.00 | GMCBU-1C-15 | $16.00 | GMCBU-1D-15 | $16.00 |
| 16 | GMCBU-1B-16 | $16.00 | GMCBU-1C-16 | $16.00 | GMCBU-1D-16 | $16.00 |
| 20 | GMCBU-1B-20 | $16.00 | GMCBU-1C-20 | $16.00 | GMCBU-1D-20 | $16.00 |
| 25 | GMCBU-1B-25 | $16.00 | GMCBU-1C-25 | $16.00 | GMCBU-1D-25 | $16.00 |
| **Gladiator UL 489 Single-Pole 120/240 VAC Selection Guide** | | | | | | |
| 30 | GMCBU-1B-30 | $16.00 | GMCBU-1C-30 | $16.00 | GMCBU-1D-30 | $16.00 |
| 32 | GMCBU-1B-32 | $16.00 | GMCBU-1C-32 | $16.00 | GMCBU-1D-32 | $16.00 |
| 40 | GMCBU-1B-40 | $16.00 | GMCBU-1C-40 | $16.00 | GMCBU-1D-40 | $16.00 |
| 50 | GMCBU-1B-50 | $18.00 | GMCBU-1C-50 | $18.00 | GMCBU-1D-50 | $18.00 |
| 63 | GMCBU-1B-63 | $18.00 | GMCBU-1C-63 | $18.00 | GMCBU-1D-63 | $18.00 |

Two-Pole

| Gladiator UL 489 Two-Pole 480Y/277 VAC Selection Guide | | | | | | |
|---|---|---|---|---|---|---|
| Ampere Rating | B-Curve Part Number | Price | C-Curve Part Number | Price | D-Curve Part Number | Price |
| 1 | GMCBU-2B-1 | $31.00 | GMCBU-2C-1 | $31.00 | GMCBU-2D-1 | $31.00 |
| 2 | GMCBU-2B-2 | $31.00 | GMCBU-2C-2 | $31.00 | GMCBU-2D-2 | $31.00 |
| 3 | GMCBU-2B-3 | $31.00 | GMCBU-2C-3 | $31.00 | GMCBU-2D-3 | $31.00 |
| 4 | GMCBU-2B-4 | $31.00 | GMCBU-2C-4 | $31.00 | GMCBU-2D-4 | $31.00 |
| 5 | GMCBU-2B-5 | $31.00 | GMCBU-2C-5 | $31.00 | GMCBU-2D-5 | $31.00 |
| 6 | GMCBU-2B-6 | $31.00 | GMCBU-2C-6 | $31.00 | GMCBU-2D-6 | $31.00 |
| 8 | GMCBU-2B-8 | $31.00 | GMCBU-2C-8 | $31.00 | GMCBU-2D-8 | $31.00 |
| 10 | GMCBU-2B-10 | $31.00 | GMCBU-2C-10 | $31.00 | GMCBU-2D-10 | $31.00 |
| 15 | GMCBU-2B-15 | $31.00 | GMCBU-2C-15 | $31.00 | GMCBU-2D-15 | $31.00 |
| 16 | GMCBU-2B-16 | $31.00 | GMCBU-2C-16 | $31.00 | GMCBU-2D-16 | $31.00 |
| 20 | GMCBU-2B-20 | $31.00 | GMCBU-2C-20 | $31.00 | GMCBU-2D-20 | $31.00 |
| 25 | GMCBU-2B-25 | $31.00 | GMCBU-2C-25 | $31.00 | GMCBU-2D-25 | $31.00 |
| **Gladiator UL 489 Two-Pole 240VAC Selection Guide** | | | | | | |
| 30 | GMCBU-2B-30 | $31.00 | GMCBU-2C-30 | $31.00 | GMCBU-2D-30 | $31.00 |
| 32 | GMCBU-2B-32 | $31.00 | GMCBU-2C-32 | $31.00 | GMCBU-2D-32 | $31.00 |
| 40 | GMCBU-2B-40 | $31.00 | GMCBU-2C-40 | $31.00 | GMCBU-2D-40 | $31.00 |
| 50 | GMCBU-2B-50 | $36.00 | GMCBU-2C-50 | $36.00 | GMCBU-2D-50 | $36.00 |
| 63 | GMCBU-2B-63 | $36.00 | GMCBU-2C-63 | $36.00 | GMCBU-2D-63 | $36.00 |

# Gladiator from AutomationDirect Miniature Circuit Breakers (UL 489)

***Three-Pole***

| Gladiator UL 489 Three-Pole 480Y/277 VAC Selection Guide | | | | | | |
|---|---|---|---|---|---|---|
| ***Ampere Rating*** | ***B-Curve Part Number*** | ***Price*** | ***C-Curve Part Number*** | ***Price*** | ***D-Curve Part Number*** | ***Price*** |
| 1 | ***GMCBU-3B-1*** | $46.50 | ***GMCBU-3C-1*** | $46.50 | ***GMCBU-3D-1*** | $46.50 |
| 2 | ***GMCBU-3B-2*** | $46.50 | ***GMCBU-3C-2*** | $46.50 | ***GMCBU-3D-2*** | $46.50 |
| 3 | ***GMCBU-3B-3*** | $46.50 | ***GMCBU-3C-3*** | $46.50 | ***GMCBU-3D-3*** | $46.50 |
| 4 | ***GMCBU-3B-4*** | $46.50 | ***GMCBU-3C-4*** | $46.50 | ***GMCBU-3D-4*** | $46.50 |
| 5 | ***GMCBU-3B-5*** | $46.50 | ***GMCBU-3C-5*** | $46.50 | ***GMCBU-3D-5*** | $46.50 |
| 6 | ***GMCBU-3B-6*** | $46.50 | ***GMCBU-3C-6*** | $46.50 | ***GMCBU-3D-6*** | $46.50 |
| 8 | ***GMCBU-3B-8*** | $46.50 | ***GMCBU-3C-8*** | $46.50 | ***GMCBU-3D-8*** | $46.50 |
| 10 | ***GMCBU-3B-10*** | $46.50 | ***GMCBU-3C-10*** | $46.50 | ***GMCBU-3D-10*** | $46.50 |
| 15 | ***GMCBU-3B-15*** | $46.50 | ***GMCBU-3C-15*** | $46.50 | ***GMCBU-3D-15*** | $46.50 |
| 16 | ***GMCBU-3B-16*** | $46.50 | ***GMCBU-3C-16*** | $46.50 | ***GMCBU-3D-16*** | $46.50 |
| 20 | ***GMCBU-3B-20*** | $46.50 | ***GMCBU-3C-20*** | $46.50 | ***GMCBU-3D-20*** | $46.50 |
| 25 | ***GMCBU-3B-25*** | $46.50 | ***GMCBU-3C-25*** | $46.50 | ***GMCBU-3D-25*** | $46.50 |
| **Gladiator UL 489 Three-Pole 240VAC Selection Guide** | | | | | | |
| 30 | ***GMCBU-3B-30*** | $46.50 | ***GMCBU-3C-30*** | $46.50 | ***GMCBU-3D-30*** | $46.50 |
| 32 | ***GMCBU-3B-32*** | $46.50 | ***GMCBU-3C-32*** | $46.50 | ***GMCBU-3D-32*** | $46.50 |
| 40 | ***GMCBU-3B-40*** | $46.50 | ***GMCBU-3C-40*** | $46.50 | ***GMCBU-3D-40*** | $46.50 |
| 50 | ***GMCBU-3B-50*** | $54.00 | ***GMCBU-3C-50*** | $54.00 | ***GMCBU-3D-50*** | $54.00 |
| 63 | ***GMCBU-3B-63*** | $54.00 | ***GMCBU-3C-63*** | $54.00 | ***GMCBU-3D-63*** | $54.00 |

Gladiator from AutomationDirect

# Miniature Circuit Breakers (UL 489) Technical Specifications

| Gladiator Miniature Circuit Breakers – UL 489 | | | | |
|---|---|---|---|---|
| | | B-Curve | C-Curve | D-Curve |
| Short Circuit Trip Response | | 3-5 x In | 5-10 x In | 10-20 x In |
| Current Rating | | 1, 2, 3, 4, 5, 6, 8, 10 ,15, 16, 20 ,25, 30, 32, 40, 50, 63A | | |
| Maximum Voltage Ratings UL / CSA | 1-63 A, AC | 1P: 120/240V<br>2P:240V<br>3P: 240V | | |
| | 1-25 A, AC | 1P: 277V<br>2P:480Y/277V<br>3P: 480Y/277V | | |
| | 1-63 A, DC | 1P: 60V<br>2P:125V<br>3P: 125V | | |
| Thermal Tripping Characteristics (Temperature) | Single-pole | 104°F [40°C] | | |
| | Multi-pole | | | |
| Interrupting Ratings (@ maximum voltage) | 1-pole | AC: 10kA @ 120/240VAC, 10kA @ 277VAC (1~25A),10kA @ 120/240VAC (30~63A)<br>DC: 10kA @ 60VDC | | |
| | 2-pole | AC: 10kA @ 240VAC, 480Y/277 VAC(1~25A), 10kA@240VAC (30~63A)<br>DC: 10kA @ 125VDC | | |
| | 3-pole | | | |
| Rated Frequency | | 50/60 Hz | | |
| Agency Approvals | | UL, CB | | |

Notes: Line voltage connection suitable for reverse feed
To obtain the most current agency approval information, see the Agency Approval Checklist section on the specific part number's web page.

| Gladiator Miniature Circuit Breaker - IEC | | | | |
|---|---|---|---|---|
| | | B-Curve | C-Curve | D-Curve |
| Short Circuit Trip Response | | 3-5 x In | 5-10 x In | 10-20 x In |
| Current Rating | | 1, 2, 3, 4, 5, 6, 8, 10 ,15, 16, 20 ,25, 30, 32, 40, 50, 63A | | |
| Maximum Voltage Ratings - IEC/EN 60947-2 | 1-pole | 500VAC | | |
| | 2-pole / 3-pole | | | |
| | 2 poles in series | | | |
| Thermal Tripping Characteristics (Temperature) | Single-pole | 104°F [40°C] | | |
| | Multi-pole | | | |
| Interrupt Ratings (At Max Voltage) Uimp | | 6kV | | |
| Rated Frequency | | 50/60 Hz | | |

| General Specifications | | |
|---|---|---|
| Lifespan / Endurance | | 6,000 operations electrical |
| Operating Temperature | | 23°F to 104°F [-5°C to 40°C] |
| Housing Material | | Engineering plastic |
| Mounting Position | | On 35mm DIN rail (vertical) |
| Weight | 1-pole | 0.28 lb [130g] |
| | 2-pole | 0.58 lb [260g] |
| | 3-pole | 0.86 lb [390g] |
| **Wire Size** | | |
| Conductor Size Copper Only, 149°F [65°C] | | Lug type 14-4 AWG |
| **Tightening Torque** | | |
| Tightening Torque | | 35 lb•in [3.9 N•m] |

# Gladiator® from AutomationDirect Series Technical Data (UL 489)

## Temperature Derating (UL 489)

**Temperature Derating for UL 489**
**Influence of Ambient Temperature T on Load Carrying Capacity (UL 489)**

| Device Current Rating in Amps at 104°F [40°C] | In (A) at Higher Ambient Temperature | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | -40°F [-40°C] | -22°F [-30°C] | -4°F [-20°C] | 14°F [-10°C] | 32°F [0°C] | 50°F [10°C] | 68°f [20°C] | 86°F [30°C] | 104°F [40°C] | 122°F [50°C] | 140°F [60°C] | 158°F [70°C] |
| **1** | 1.5 | 1.4 | 1.3 | 1.3 | 1.2 | 1.2 | 1.1 | 1.1 | 1.0 | 0.9 | 0.8 | 0.8 |
| **2** | 3.0 | 2.8 | 2.7 | 2.6 | 2.4 | 2.3 | 2.2 | 2.1 | 2.0 | 1.8 | 1.7 | 1.5 |
| **3** | 4.4 | 4.2 | 4.0 | 3.8 | 3.6 | 3.5 | 3.3 | 3.2 | 3.0 | 2.8 | 2.5 | 2.3 |
| **4** | 5.9 | 5.6 | 5.4 | 5.1 | 4.9 | 4.6 | 4.4 | 4.2 | 4.0 | 3.7 | 3.4 | 3.1 |
| **5** | 7.4 | 7.0 | 6.7 | 6.4 | 6.1 | 5.8 | 5.5 | 5.3 | 5.0 | 4.6 | 4.2 | 3.9 |
| **6** | 8.9 | 8.4 | 8.0 | 7.7 | 7.3 | 6.9 | 6.6 | 6.3 | 6.0 | 5.5 | 5.0 | 4.6 |
| **8** | 11.8 | 11.3 | 10.7 | 10.2 | 9.7 | 9.3 | 8.8 | 8.4 | 8.0 | 7.3 | 6.7 | 6.2 |
| **10** | 14.8 | 14.1 | 13.4 | 12.8 | 12.2 | 11.6 | 11.0 | 10.5 | 10.0 | 9.2 | 8.4 | 7.7 |
| **15** | 22.2 | 21.1 | 20.1 | 19.1 | 18.2 | 17.4 | 16.5 | 15.8 | 15.0 | 13.8 | 12.6 | 11.6 |
| **16** | 23.6 | 22.5 | 21.4 | 20.4 | 19.4 | 18.5 | 17.6 | 16.8 | 16.0 | 14.7 | 13.5 | 12.3 |
| **20** | 29.5 | 28.1 | 26.8 | 25.5 | 24.3 | 23.2 | 22.1 | 21.0 | 20.0 | 18.3 | 16.8 | 15.4 |
| **25** | 36.9 | 35.2 | 33.5 | 31.9 | 30.4 | 28.9 | 27.6 | 26.3 | 25.0 | 22.9 | 21.0 | 19.3 |
| **30** | 44.3 | 42.2 | 40.2 | 38.3 | 36.5 | 34.7 | 33.1 | 31.5 | 30.0 | 27.5 | 25.2 | 23.1 |
| **32** | 47.3 | 45.0 | 42.9 | 40.8 | 38.9 | 37.0 | 35.3 | 33.6 | 32.0 | 29.3 | 26.9 | 24.7 |
| **40** | 59.1 | 56.3 | 53.6 | 51.1 | 48.6 | 46.3 | 44.1 | 42.0 | 40.0 | 36.7 | 33.6 | 30.8 |
| **50** | 73.9 | 70.4 | 67.0 | 63.8 | 60.8 | 57.9 | 55.1 | 52.5 | 50.0 | 45.9 | 42.0 | 38.6 |
| **63** | 93.1 | 88.6 | 84.4 | 80.4 | 76.6 | 72.9 | 69.5 | 66.2 | 63.0 | 57.8 | 53.0 | 48.6 |

## Power Loss at $I_n$ (UL 489)

**Power Loss at $I_n$**
**Characteristic B**

| $I_n$ [A] | 1p P[W] | 2p P[W] | 3p P[W] |
|---|---|---|---|
| **1** | 1.2 | 1.5 | 3.2 |
| **2** | 1.4 | 3.2 | 3.5 |
| **3** | 1.2 | 2.9 | 3.9 |
| **4** | 1.3 | 3.1 | 4.3 |
| **5** | 1.6 | 3.2 | 3.5 |
| **6** | 1.3 | 2.6 | 3.9 |
| **8** | 1.5 | 3.1 | 4.3 |
| **10** | 1.6 | 3.7 | 5.3 |
| **15** | 1.9 | 4.4 | 5.2 |
| **16** | 1.9 | 4.3 | 6.1 |
| **20** | 2.5 | 5.3 | 8.6 |
| **25** | 3.2 | 6.1 | 9.3 |
| **30** | 3.6 | 6.5 | 9.6 |
| **32** | 3.5 | 7.0 | 10.5 |
| **40** | 4.2 | 8.2 | 12.4 |
| **50** | 5.5 | 10.2 | 15.5 |
| **63** | 6.3 | 12.6 | 19.1 |

**Power Loss at $I_n$**
**Characteristic C**

| $I_n$ [A] | 1p P[W] | 2p P[W] | 3p P[W] |
|---|---|---|---|
| **1** | 1.1 | 1.8 | 3.2 |
| **2** | 1.3 | 2.2 | 4.2 |
| **3** | 1.1 | 2.1 | 3.7 |
| **4** | 1.2 | 2.8 | 4.0 |
| **5** | 1.5 | 3.0 | 3.7 |
| **6** | 1.2 | 2.3 | 3.5 |
| **8** | 1.4 | 3.1 | 4.2 |
| **10** | 1.5 | 2.8 | 4.3 |
| **15** | 1.8 | 3.3 | 4.8 |
| **16** | 1.8 | 3.6 | 5.4 |
| **20** | 2.7 | 4.8 | 8.2 |
| **25** | 3.1 | 5.9 | 9.1 |
| **30** | 3.3 | 6.4 | 9.5 |
| **32** | 3.7 | 7.1 | 10.7 |
| **40** | 4.0 | 7.9 | 12.3 |
| **50** | 4.8 | 9.7 | 15.1 |
| **63** | 6.1 | 12.1 | 18.5 |

**Power Loss at $I_n$**
**Characteristic D**

| $I_n$ [A] | 1p P[W] | 2p P[W] | 3p P[W] |
|---|---|---|---|
| **1** | 1.5 | 2.1 | 2.8 |
| **2** | 1.2 | 2.3 | 3.3 |
| **3** | 1.3 | 2.4 | 3.9 |
| **4** | 1.1 | 2.3 | 3.8 |
| **5** | 1.4 | 2.5 | 3.8 |
| **6** | 1.4 | 2.4 | 3.7 |
| **8** | 1.9 | 2.9 | 3.2 |
| **10** | 1.5 | 2.7 | 4.2 |
| **15** | 1.6 | 2.9 | 4.3 |
| **16** | 1.7 | 3.1 | 4.5 |
| **20** | 2.0 | 3.3 | 4.9 |
| **25** | 2.7 | 5.4 | 7.3 |
| **30** | 3.0 | 5.9 | 8.8 |
| **32** | 3.3 | 5.9 | 9.8 |
| **40** | 3.7 | 7.2 | 10.7 |
| **50** | 4.8 | 9.2 | 14.1 |
| **63** | 6.0 | 11.6 | 17.9 |

Gladiator® from AutomationDirect

# Miniature Circuit Breakers Accessories (UL 489)

| Gladiator Miniature Circuit Breakers Accessories | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| ***Part Number*** | ***Price*** | ***Description*** | ***For Use With*** | ***Rating*** | ***Control Voltage ($U_e$)*** | ***Operation Voltage*** | ***Trip Voltage*** | ***VA/Watt*** | ***Operating Time*** | ***Dimensions in [mm]*** |
| ***GMCBU-AUX11*** | $14.00 | Auxiliary contact | UL 489 models | 6A @ 240VAC<br>3A @ 415VAC<br>1A @ 110VDC<br>2A @ 48VDC | – | – | – | – | – | 0.35x4.13x2.60 [9x105x66] |
| ***GMCBU-ALM11*** | $16.00 | Alarm contact | UL 489 models | | | | | | | |
| ***GMCBU-SH110-380VAC*** | $22.50 | Shunt trip | UL 489 models | – | 110-380 VAC<br>60-220 VDC | 80-110% $U_e$ | – | 70 | 300ms | 0.71x4.13x2.60 [18x105x66] |
| ***GMCBU-UV110-120VAC*** | $28.00 | Undervoltage trip | UL 489 models | – | 110-120 VAC<br>220-240 VAC | – | 35-70% Ue | 1 | 2s | 0.71x4.13x2.60 [18x105x66] |
| ***GMCBU-UV220-240VAC*** | $28.00 | Undervoltage trip | UL 489 models | – | | | | 3.5 | 2s | |

GMCBU-AUX11

GMCBU-ALM11

GMCBU-SH110-380VAC

GMCBU-UV110-120VAC
GMCBU-UV220-240VAC

| Gladiator Miniature Circuit Breakers Locking Device | | | | | | |
|---|---|---|---|---|---|---|
| ***Part Number*** | ***Price*** | ***Description*** | ***For use with*** | ***Lock opening diameter*** | ***Weight*** | ***To operate*** |
| ***GMCBU-LOCK*** | $6.50 | Locking device | UL 489 and UL 1077 models | 0.28 in [7.0] | Not less than 4.23 oz [120g | Press button and insert into the handle |

**Note: Do not overpull by 10kg F.**

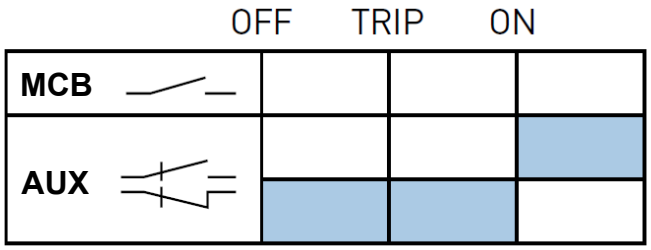
GMCBU-LOCK

Press button and insert into handle

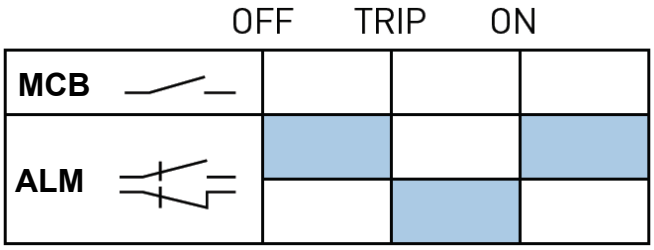
# Gladiator® from AutomationDirect Miniature Circuit Breakers Accessories (UL 489)

## Contact Diagrams

**GMCBU-AUX11**



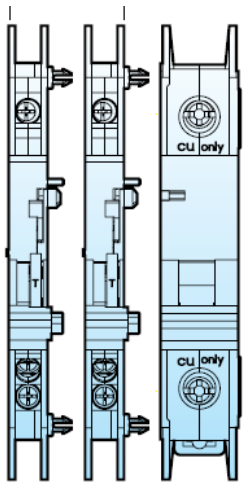

**GMCBU-ALM11**




## Connecting Accessories

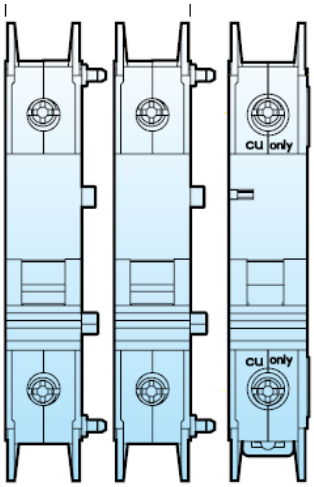
**Auxiliary contacts**

Up to 0.71 in [18mm]




**Tripping devices**

Up to 1.42 in [36mm]




**Both auxiliary contacts and tripping devices**

Up to 2.13 in [54mm]