Altech Circuit Protection Devices
SHORT FORM
Altech Miniature Circuit Breaker Advantages

In today’s very competitive marketplace you need reliability, so you need to use circuit breakers that are high quality and technically correct for your application. Altech is a US leader in DIN rail mounted breakers with ratings up to 63A. Only Altech offers DIN rail mounted breakers that meet UL489, UL508 or UL1077 approvals with a short circuit interrupt capacity of up to 10kA.

Overview of Physical Attributes
L, M and R Series

1. Strong thermoplastic housing.
2. Strong terminal barriers.
3. Spring action DIN Rail clips for both top and bottom.
5. Indicator window.
6. Trip curve (D) and amperage (15A) window display.

Ordering Nomenclature
L, M and R Series

EXAMPLE

DC 1 CU 25 L

Series: L = UL489, M = UL508, R = UL1077
Rating: 0.3 – 63A
Trip Curve: B, C, D, G, Z
No. of Poles: 1, 2, 3, 4
Current Type: DC = DC / Blank = AC

For all the details visit: AltechCorp.com/Breakers
L-Series
AC or DC
Miniature Molded Case Circuit Breakers
UL489 Listed Circuit Breakers

• Available in AC and DC models
• DIN Rail Mounted
• 17.5mm width
• Thermal Magnetic
• 240V, 480Y/277V AC, 50/60Hz
• 125VDC (1 pole); 250VDC (2 pole)
• 10kA Short Circuit Interrupting Capacity
• Positive Trip indicator
  (Green - off/tripped, Red - on)
• HACR Type 40°C
• Line/Load reversible

AC - SHORT CIRCUIT INTERRUPTING RATING

<table>
<thead>
<tr>
<th>No. Poles</th>
<th>Type</th>
<th>0.2-32A</th>
<th>33-63A</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>AC</td>
<td>10kA@120, 240, 277V</td>
<td>10kA@120, 240V</td>
</tr>
<tr>
<td>2-4</td>
<td>AC</td>
<td>10kA@120, 240V, 480Y/277V</td>
<td>10kA@120, 240V</td>
</tr>
</tbody>
</table>

DC - SHORT CIRCUIT INTERRUPTING RATING

<table>
<thead>
<tr>
<th>No. Poles</th>
<th>Type</th>
<th>0.2-32A</th>
<th>33-63A</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>DC</td>
<td>10kA@125V</td>
<td>10kA@125V</td>
</tr>
<tr>
<td>2</td>
<td>DC</td>
<td>10kA@250V</td>
<td>10kA@250V</td>
</tr>
</tbody>
</table>

Accessories
• Auxiliary Contact
• Shunt Trip
• Neutral Pole
• Undervoltage (special order)
• Front Mounting Kit with hardware
• Lock-out Adapter

For all the details visit: AltechCorp.com/Breakers

Dimensions

AC Applications

DC Applications

Time versus Current Trip Curve

Listed E305318

Warning!
This information should only be used as a selection guide. The use of a Miniature Circuit Breaker in an application with a certain Trip Characteristic always requires prototype testing! It is the responsibility of the circuit design engineer to select the appropriate Miniature Circuit Breaker for their specific application.

ALTECH CORP.® • 35 Royal Road • Flemington, NJ 08822-6000 • P 908.806-9400 • F 908.806.9490 • www.altechcorp.com
M-Series
Manual Motor Controller with Disconnecting Mean
UL508 Listed Circuit Breakers

• DIN Rail Mounted
• 17.5mm width per pole
• Thermal Magnetic
• 480Y/277V AC, 50/60Hz
• 10kA Short Circuit
Withstand Capacity
• Line / Load reversible
• Positive Trip indicator
  (Green - off/tripped, Red - on)

**SHORT CIRCUIT WITHSTAND RATINGS FOR M-SERIES MANAUL MOTOR CONTROLLER**

<table>
<thead>
<tr>
<th>Trip Curve</th>
<th>Amp Range</th>
<th>UL-Listed Class J Fuse up to 10kA</th>
<th>No Backup Fuse Required up to:</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>0.5 - 6A</td>
<td>4xRC*</td>
<td>10kA</td>
</tr>
<tr>
<td>All</td>
<td>8 - 63A</td>
<td>4xRC*</td>
<td>5kA</td>
</tr>
</tbody>
</table>

*up to nearest rated current

**Dimensions**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>96.1</td>
<td>in.</td>
</tr>
<tr>
<td>85.5</td>
<td>in.</td>
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<tr>
<td>45</td>
<td>in.</td>
</tr>
<tr>
<td>6.5</td>
<td>in.</td>
</tr>
<tr>
<td>44</td>
<td>in.</td>
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<tr>
<td>60</td>
<td>in.</td>
</tr>
<tr>
<td>77</td>
<td>in.</td>
</tr>
</tbody>
</table>

**Accessories**

• Auxiliary Contact
• Shunt Trip
• Neutral Pole
• Undervoltage
  (special order)
• Lock-out Adapter
• Front Mounting Kit with hardware

**Applications**

<table>
<thead>
<tr>
<th>Characteristic Trip Boundaries</th>
<th>Lighting Wiring Protection</th>
<th>Business Equipment Appliance</th>
<th>Transformers</th>
<th>Power Supplies</th>
<th>Heaters</th>
<th>General Electronics</th>
<th>Solenoids</th>
<th>Reactive Load</th>
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<tbody>
<tr>
<td>Thermal Trip</td>
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<td>Must Trip &lt; 1hr</td>
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<td>2xRC</td>
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**For all the details visit:**
AltechCorp.com/Breakers

- Voltage Rating: 480Y/277VAC
- Short Circuit Withstand Rating (UL - Ratings):
  - 0.5-6A (RC): 10kA with no back-up fuse
  - 8-63A (RC): 10kA with UL-listed Class J back-up fuse; 5kA with no back-up fuse
- Poles: 1, 2, 3 (4 poles available upon request)
- Trip Characteristics: B, C, D, G
- Interrupting Capacity (IEC/EN60898/60947-2): 0.5-63A (RC): 10kA
- Calibration Temperature: 30°C (86°F)
- Operating Temperature: -25° to 60°C (-13° to 140°F)
- Storage Temperature: -25° to 75°C (-13° to 167°F)
- Terminal Size Acceptability:
  - 14-3 AWG: 17.5 lb-in. (2.0 Nm)
  - 18-16 AWG: 25 lb-in. (2.8 Nm)
- Terminal Protection Degree: IP20
- Vibration Resistance: 3g (8-50Hz)

**Time versus Current Trip Curve**

- Multiple of Rated Current
- 210-3
- 4x10-3
- 4x10-2
- 10-1
- 0.4
- 1
- 4
- 10
- 40
- 60

**Listed C.B.**
E509480

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**Accessories**

- Auxiliary Contact
- Shunt Trip
- Neutral Pole
- Undervoltage
  (special order)
- Lock-out Adapter
- Front Mounting Kit with hardware

**Dimensions**

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</table>
R-Series
Recognized Supplemental Protector
UL1077 Listed Circuit Breakers

- DIN Rail Mounted
- 17.5mm width per pole
- Thermal Magnetic
- 480Y/277V AC, 50/60Hz
- 10kA Short Circuit Withstand Capacity
- Positive Trip indicator (Green - off/tripped, Red - on)

**For all the details visit:**
AltechCorp.com/Breakers

<table>
<thead>
<tr>
<th>Voltage Rating</th>
<th>480Y/277VAC</th>
</tr>
</thead>
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<tr>
<td>Short Circuit Withstand Rating (UL - Ratings)</td>
<td>0.5-6A (RC): 10kA with no back-up fuse</td>
</tr>
<tr>
<td></td>
<td>8-63A (RC): 10kA with UL-listed Class J back-up fuse; 5kA with no back-up fuse</td>
</tr>
<tr>
<td>Poles</td>
<td>1, 2, 3 (4 poles available upon request.)</td>
</tr>
<tr>
<td>Trip Characterisics</td>
<td>B, C, D</td>
</tr>
<tr>
<td>Interrupting Capacity</td>
<td>0.5-63A (RC): 10kA</td>
</tr>
<tr>
<td>(IEC/EN60898/60947-2)</td>
<td></td>
</tr>
<tr>
<td>Calibration Temperature</td>
<td>30°C (86°F)</td>
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<tr>
<td>Operating Temperature</td>
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<tr>
<td>Terminal Size Acceptability and Torque</td>
<td>14-3 AWG: 17.5 lb-in. (2.0 Nm)</td>
</tr>
<tr>
<td></td>
<td>18-16 AWG: 25 lb-in. (2.8 Nm)</td>
</tr>
<tr>
<td>Terminal Protection Degree</td>
<td>IP20 at front</td>
</tr>
<tr>
<td>Electrical Life</td>
<td>6,000 cycles on/off</td>
</tr>
<tr>
<td>Mechanical Life</td>
<td>10,000 cycles on/off</td>
</tr>
<tr>
<td>Wire Connection</td>
<td>copper wire only 60/75°C</td>
</tr>
<tr>
<td>Vibration Resistance</td>
<td>3g (18-50Hz)</td>
</tr>
<tr>
<td>Mounting Orientation</td>
<td>In any plane</td>
</tr>
</tbody>
</table>

**Characteristic Trip Boundaries**

**Thermal Trip**
- Must not Trip at 100ms

**Magnetic Trip**
- Must not Trip at 100ms

**Trip Characteristics**
- B
- C
- D

**Applications**
- Business Equipment
- Control Circuits
- Power Supplies
- General Electronics
- Reactive Load

**Time versus Current Trip Curve**

**Dimension**

**Backup Protection**
- UL-Listed Class J Fuse up to 10kA
- No Backup Fuse Required up to:

<table>
<thead>
<tr>
<th>Trip Curve</th>
<th>Amp Range</th>
<th>Backup Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>0.5 - 6A</td>
<td>4xRC*</td>
</tr>
<tr>
<td>All</td>
<td>8 - 63A</td>
<td>4xRC*</td>
</tr>
</tbody>
</table>

*up to nearest rated current

**Accessories**
- Auxiliary Contact
- Shunt Trip
- Neutral Pole
- Undervoltage (special order)
- Lock-out Adapter

**Warning!**
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**Short Circuit Withstand Ratings for R-Series Supplementary Protector**

<table>
<thead>
<tr>
<th>Trip Curve</th>
<th>Amp Range</th>
<th>Backup Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>0.5 - 6A</td>
<td>4xRC*</td>
</tr>
<tr>
<td>All</td>
<td>8 - 63A</td>
<td>4xRC*</td>
</tr>
</tbody>
</table>

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**Trip-Characteristics**

- **B-Characteristics**
- **C-Characteristics**
- **D-Characteristics**

**Time versus Current Trip Curve**

**Multiple of Rated Current**

**Dimensions**

**UL**
E301611
Ground Fault Protectors

GFL Series (5A - 40A)
10kA UL489 Listed Branch Circuit Breaker with Equipment Ground Fault Protection (RCBO)

The GFL Series range is a combined Branch Circuit Breaker and Equipment Ground Fault Protector, featuring dual pole switching (live and neutral disconnect) and designed to provide protection against short circuits, overloads, AC ground faults (residual current faults) as well as pulsating DC ground faults.

GFL Series RCBO Ordering Scheme

- **No. of Poles**: 2
- **Trip Curve**: B, C, D
- **Rated Current**: 5, 6, 8, 10, 12, 13, 15, 16, 20, 25, 30*, 32*, 35*, 40A*
  - *S & SN versions only
- **Residual Current Sensitivity**
  - 010 = 10mA**
  - 030 = 30mA
  - 100 = 100mA
  - 300 = 300mA
- **System**: 2, S, SN

**EXAMPLE:**
GFL2C080302

**NOTE:**
- 2 = 240V Single Phase System with neutral connection.
- S = 120/240V Split Phase System with no neutral connection.
- SN = 120/240V Split Phase System with neutral connection.

GF Series (up to 63A)
480Y/277V AC Ground Fault Sensing and Relaying Device (RCCB)

The GF Series of Equipment Ground Fault Protection Relays (Earth Leakage Protection) is the latest addition to Altech's UL Listed product range, providing ground fault (residual current) protection for circuits with loads up to 63A. Short Circuit Withstand rating is 10kA.

GF Series RCCB Ordering Scheme

- **No. of Poles**: 2, 4
- **Rated Current**: 25, 40, 63A
- **Residual Current Sensitivity**
  - 010 = 10mA*
  - 030 = 30mA
  - 100 = 100mA
  - 300 = 300mA
- **Rated Voltage (UL)**: 277V AC

**EXAMPLE:**
GF225030

**GFR Series (5A - 40A)**
480Y/277V AC Ground Fault Relay with Overload Protection (RCBO)

The GFR Series is a combined Equipment Ground Fault Relay and Supplementary Protector (RCBO), featuring dual pole switching (live and neutral) and designed to provide protection against overloads and AC ground faults (residual current faults) as well as pulsating DC ground faults. Short Circuit Withstand rating is 10kA.

GFR Series RCBO Ordering Scheme

- **No. of Poles**: 2, 4
- **Trip Curve**: B, C, D
- **Rated Current**: 5, 6, 8, 10, 12, 13, 15, 16, 20, 25, 30, 32, 35, 40A
- **Residual Current Sensitivity**
  - 010 = 10mA*
  - 030 = 30mA
  - 100 = 100mA
  - 300 = 300mA
  - 500 = 500mA
- **Rated Voltage (UL)**: 277V AC

**EXAMPLE:**
GFR2B06030
Busbars

For all the details visit: AltechCorp.com/Breakers/Busbars

UL489 & UL508/1077

The Altech Busbar System is an innovative way to jumper up to 57 poles of miniature molded case circuit breakers, manual motor controllers or supplementary protectors.

The advantages of this busbar system are:
- 30% Installation time savings
- Panel space savings
- Reduced maintenance
- High electrical ratings

UL489 Busbar System
- Every pin configuration is possible by combination of existing 6, 12 and 18 pin busbars.
- Cuttable busbar system available in any pin configuration
  - consult Altech
- Power Feeding:
  - Power Feed Lug (115A), Direct Power Feed (115A)
- UL listed for Altech’s L-Series of Miniature Circuit Breakers
- UL listed for use with most popular UL489 Miniature Circuit Breakers in the market.

UL1077/508 Busbar System
- 1-57 different pin configurations
- 1/2 pole spacing (auxiliary switch) available
- Power Feeding:
  - Power Feed Lugs (115A), Direct Power Feed (115A), Power Feed Block (200A)
- UL recognized and listed for Altech’s M and R-Series of Manual Motor Controllers and Supplementary Protectors
- UL recognized and listed for use with most popular UL1077 supplementary protectors and UL508 Manual Motor Controllers in the market.
- Customers can cut the Busbar without losing the UL approval
- Line/Load reversible
New Products and Promotions

The NEW Altech ENCLOSURE FINDER

Click here to begin