NEW 1st Ever

UL 489 Branch Circuit Breaker with Ground Fault Relay

UL 1053 Ground Fault Sensing and Relaying Device

Ground Fault Relay with Overload Protection

UL Ground Fault Equipment Protectors
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

<table>
<thead>
<tr>
<th>GFL</th>
<th>2</th>
<th>C</th>
<th>08</th>
<th>030</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Poles</td>
<td>2</td>
<td>Trip Curve</td>
<td>B, C, D</td>
<td>Rated Current</td>
<td>5, 6, 8, 10, 12, 13, 15, 16, 20, 25, 30, 32, 35, 40A*</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>* S &amp; SN versions only</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Residual Current Sensitivity</td>
<td>010 = 10mA**</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>030 = 30mA</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>100 = 100mA</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>300 = 300mA</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>System</td>
<td>2, S, SN</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>see note below</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>** 10mA only available on current ratings up to 25A</td>
<td></td>
</tr>
</tbody>
</table>

### Technical Specification

- **Number of Poles**: 1+N (2), 2 (S), 2+N (SN)
- **Rated Voltage** (Uo): 240V AC, 120/240V AC
- **Rated Current** (Ii): 5, 6, 8, 10, 12, 13, 15, 16, 20, 25, 30, 32, 35, 40A
- **Rated Residual Operating Current (In)**: 10**, 30, 100, 300mA
- **Rated Short Circuit Capacity (Inc)**: 10kA
- **Rated Frequency**: 50/60Hz
- **Overload Tripping**: B, C and D
- **Cable Size & Tightening Torque**: 14 - 3 AWG (2mm² - 25mm²) @ 17.5lb-in (2.0Nm) 18 - 16 AWG (1mm² - 1.5mm²) @ 25lb-in (2.8Nm)
- **Electrical Life**: 6000 Switching Operations
- **Mechanical Life**: 10000 Switching Operations

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**Example**: GFL2C080302

- **System**: 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.

**NOTE**: 2 = 240V Single Phase System with neutral connection.

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### GFL Series RCBO Ground Fault Trip Curve

**Characteristics**: B, C, D

**Switch off time**: t(s)  
**Rated current multiple**: x Iₚ₀

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### GFL Series RCBO Overload Trip Curves

**Characteristics**: B, C, D

**Switch off time**: t(s)  
**Rated current multiple**: x Iₚ₀

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**UL 489** Listed Branch Circuit Breaker with Equipment Ground Fault Protection (RCBO)

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**35 Royal Road ● Flemington, NJ 08822-6000 ● t 908-806-9400 ● f 908-806-9490 ● www.altechcorp.com**
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

<table>
<thead>
<tr>
<th>GF</th>
<th>25</th>
<th>030</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Poles</td>
<td>Rated Current</td>
<td>Residual Current Sensitivity</td>
</tr>
<tr>
<td>2, 4</td>
<td>25, 40, 63A</td>
<td>010 = 10mA*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>030 = 30mA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>100 = 100mA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>300 = 300mA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>500 = 500mA</td>
</tr>
</tbody>
</table>

*(ONLY 2 pole, 25A - Cat. No. GF225010)

EXAMPLE: GF225030

Technical Specification

- Number of Poles: 2, 4
- Rated Voltage (Un): 277V AC, 480Y/277V AC
- Rated Current: 25, 40, 63A
- Rated Residual Operating Current (I_n): 10*, 30, 100, 300, 500mA
- Rated Frequency: 50/60Hz
- Cable Size & Tightening Torque:
  - Stranded wire sized 16 - 3 AWG (1.5mm² - 25mm²) @ 17.5lb-in (2.0Nm)
  - Solid wire sized 16 - 10 AWG (1.5mm² - 5.5mm²) @ 17.5lb-in (2.0Nm)
  - Solid wire sized 18 - 16 AWG (1mm² - 1.5mm²) @ 25lb-in (2.8Nm)
- Electrical Life: 6000 Switching Operations
- Mechanical Life: 10000 Switching Operations

GF Series RCCB Ordering Scheme

<table>
<thead>
<tr>
<th>V</th>
<th>IR</th>
<th>Backup</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Pole</td>
<td>277V AC</td>
<td>Class J Fuse 250A or lower</td>
</tr>
<tr>
<td>4 Pole</td>
<td>480Y/277V AC</td>
<td>Class J Fuse 250A or lower</td>
</tr>
</tbody>
</table>

GF Series RCCB Short Circuit Withstand Rating

<table>
<thead>
<tr>
<th>V</th>
<th>IR</th>
<th>Backup</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Pole</td>
<td>277V AC</td>
<td>Altech L Series Branch Circuit Breaker</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Altech R Series Supplementary Protector</td>
</tr>
<tr>
<td>4 Pole</td>
<td>480Y/277V AC</td>
<td>Altech L Series Branch Circuit Breaker</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Altech R Series Supplementary Protector</td>
</tr>
</tbody>
</table>

GF Series RCCB Ground Fault Trip Curve
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**

<table>
<thead>
<tr>
<th>No. of Poles</th>
<th>Trip Curve</th>
<th>Rated Current</th>
<th>Residual Current Sensitivity</th>
</tr>
</thead>
</table>
| 2, 4         | B, C, D    | 5, 6, 8, 10, 12, 13, 15, 16, 20, 25, 30, 32, 35, 40A | 010 = 10mA*  
030 = 30mA  
050 = 50mA  
100 = 100mA  
300 = 300mA  
500 = 500mA |

* 10mA only available on current ratings up to 25A, 2 pole only

**Technical Specification**

- **Number of Poles**: 2, 4
- **Rated Voltage (Un)**: 277V AC, 480Y/277V AC
- **Rated Current**: 5, 6, 8, 10, 12, 13, 15, 16, 20, 25, 30, 32, 35, 40A
- **Rated Residual Operating Current (In)**: 10*, 30, 100, 300, 500mA
- **Rated Frequency**: 50/60Hz
- **Overload Tripping**: B, C and D
- **Cable Size & Tightening Torque**: Stranded wire sized 16 - 3 AWG (1.5mm2 - 25mm2) @ 17.5lb-in (2.0Nm)  
Solid wire sized 16 - 10 AWG (1.5mm2 - 5.5mm2) @ 17.5lb-in (2.0Nm)  
Solid wire sized 18 - 16 AWG (1mm2 - 1.5mm2) @ 25lb-in (2.8Nm)
- **Electrical Life**: 6000 Switching Operations
- **Mechanical Life**: 10000 Switching Operations

**GFR Series RCBO Short Circuit Withstand Rating**

<table>
<thead>
<tr>
<th>V</th>
<th>I</th>
<th>IR</th>
<th>Backup</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Pole</td>
<td>≤20A</td>
<td>10kA</td>
<td>35 mm</td>
</tr>
</tbody>
</table>
| 277V AC    | >20A       | 10kA      | Class J Fuse 250A or lower  
Altech L Series Branch Circuit Breaker  
Altech R Series Supplementary Protector |
| 4 Pole     | ≤20A       | 10kA      | None   |
| 480Y/277V AC| >20A       | 10kA      | Class J Fuse 250A or lower  
Altech L Series Branch Circuit Breaker  
Altech R Series Supplementary Protector |

**GFR Series RCBO Overload Trip Curves**

- **Characteristics B, C, D**

**GFR Series RCBO Ground Fault Trip Curve**

- **Rated current multiple** × Iₙ