

# Altech Corp.®

Serving the Automation & Control Industry Since 1984



ISO 9001  
QMI-SAI Global



Characteristics B, C, D



**UL 489**  
Branch Circuit Breaker  
with Ground Fault Relay



**Ground Fault Relay  
with Overload Protection**

**UL 1053**  
Ground Fault Sensing  
and Relaying Device



## UL Ground Fault Equipment Protectors

Rated current mu

# Altech Corp.®

## 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

|            |                   |                       |   |  |   |
|------------|-------------------|-----------------------|---|--|---|
| <b>GFL</b> | <b>2</b>          | <b>C</b>              | <b>08</b>   | <b>030</b>   | <b>2</b>                                |
|            | No. of Poles<br>2 | Trip Curve<br>B, C, D | Rated Current<br>5, 6, 8, 10, 12,<br>13, 15, 16, 20, 25,<br>30*, 32*, 35*, 40A*<br>* S & SN versions only | Residual Current Sensitivity<br>010 = 10mA**<br>030 = 30mA<br>100 = 100mA<br>300 = 300mA | System<br>2, S, SN<br>see note<br>below |

\*\* 10mA only available on current ratings up to 25A

#### NOTE:

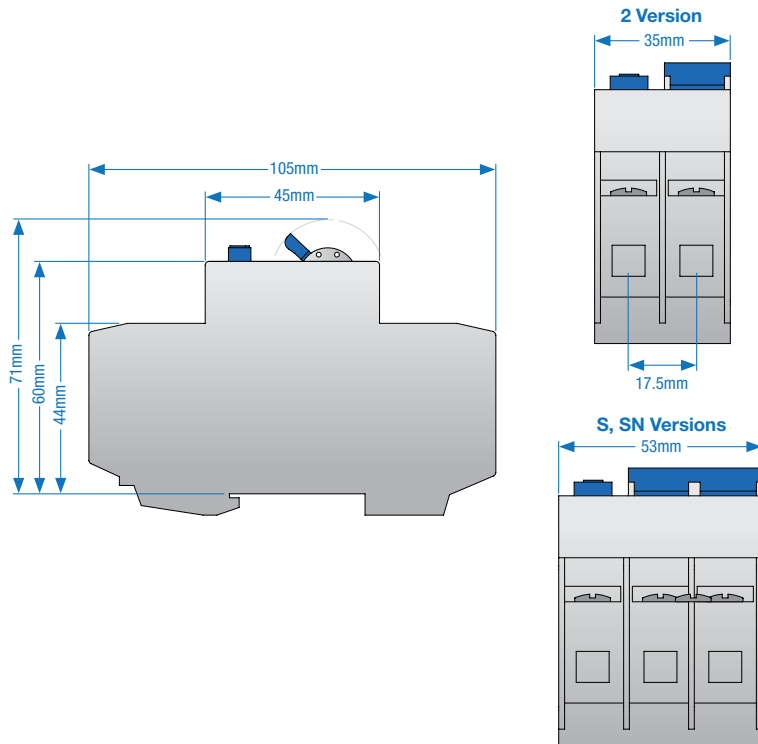
2 = 240V Single Phase System with neutral connection.  
S = 120/240V Split Phase System with no neutral connection.  
SN = 120/240V Split Phase System with neutral connection.

**EXAMPLE:  
GFL2C080302**

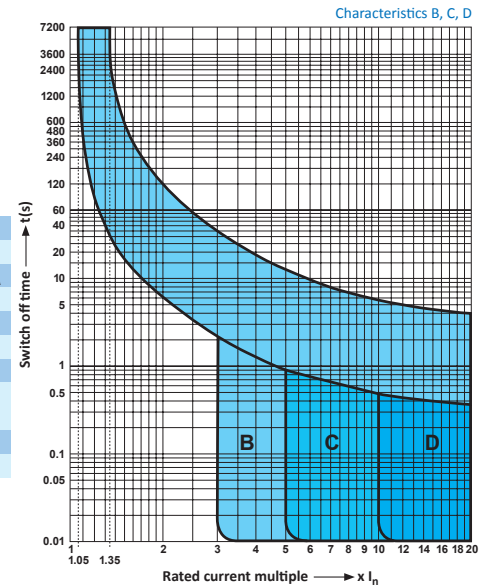
### Technical Specification

|  |  |  |
|--|--|--|
| Number of Poles                                    | 1+N (2)  | 2 (S), 2+N (SN)                                      |
| Rated Voltage (U <sub>n</sub> )                    | 240V AC  |  |
| Rated Current                                      | 5, 6, 8, 10, 12, 13, 15, 16, 20, 25A   | 5, 6, 8, 10, 12, 13, 15, 16, 20, 25, 30, 32, 35, 40A |
| Rated Residual Operating Current (I <sub>n</sub> ) | 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 (2mm <sup>2</sup> - 25mm <sup>2</sup> ) @ 17.5lb-in (2.0Nm)<br>18 - 16 AWG (1mm <sup>2</sup> - 1.5mm <sup>2</sup> ) @ 25lb-in (2.8Nm) |  |
| Electrical Life                                    | 6000 Switching Operations  |  |
| Mechanical Life                                    | 10000 Switching Operations   |  |

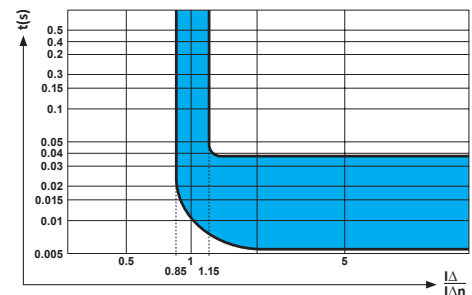
UL 489  
Branch Circuit Breaker  
with Ground Fault Relay



### GFL Series RCBO Overload Trip Curves



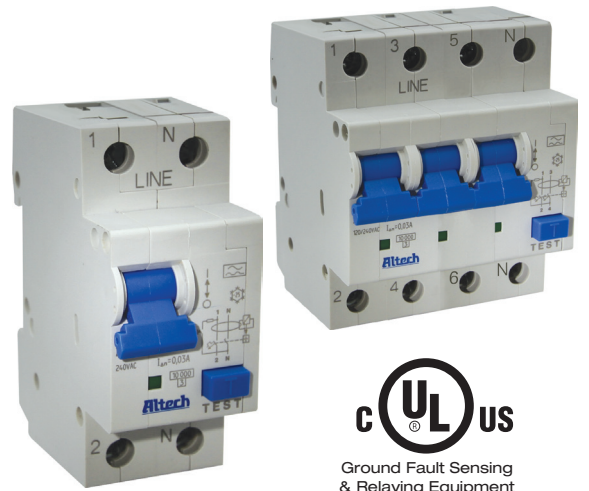
### GFL Series RCBO Ground Fault Trip Curve



# Altech Corp.®

## 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.



Ground Fault Sensing  
& Relaying Equipment  
E483493

### GF Series RCCB Ordering Scheme



**EXAMPLE:  
GF225030**

**No. of Poles**  
2, 4

**Rated Current**  
25, 40, 63A

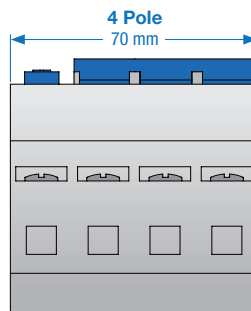
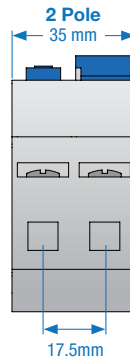
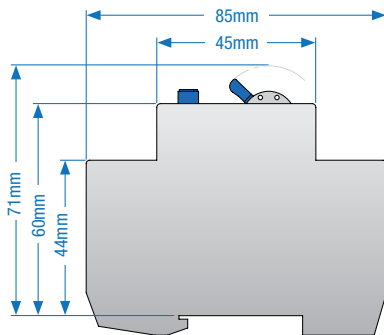
**Residual Current Sensitivity**  
010 = 10mA\*  
030 = 30mA  
100 = 100mA  
300 = 300mA  
500 = 500mA  
\*(ONLY 2 pole, 25A - Cat. No. GF225010)

### Technical Specification

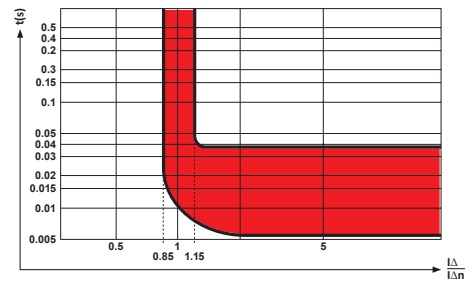
|  |  |              |
|--|--|--------------|
| Number of Poles                                    | 2  | 4            |
| Rated Voltage (U <sub>n</sub> )                    | 277V AC  | 480Y/277V AC |
| Rated Current                                      | 25, 40, 63A  |              |
| Rated Residual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

### GF Series RCCB Short Circuit Withstand Rating

| V                      | IR   | Backup  |
|------------------------|------|---|
| 2 Pole<br>277V AC      | 10kA | Class J Fuse 250A or lower<br>Altech L Series Branch Circuit Breaker<br>Altech R Series Supplementary Protector |
| 4 Pole<br>480Y/277V AC | 10kA | Class J Fuse 250A or lower<br>Altech L Series Branch Circuit Breaker<br>Altech R Series Supplementary Protector |



### GF Series RCCB Ground Fault Trip Curve



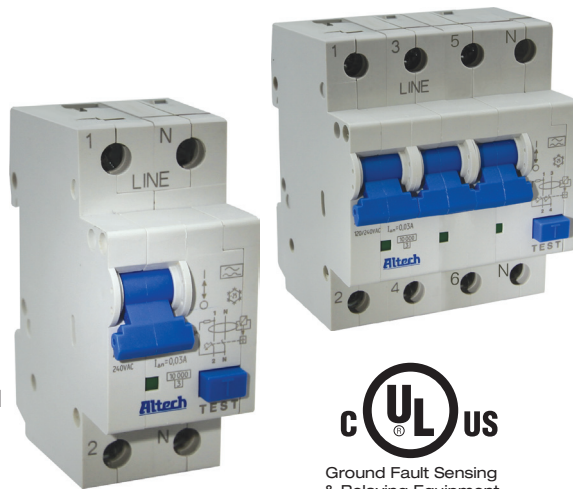
**UL 1053**  
Ground Fault Sensing  
and Relaying Device



# Altech Corp.®

## 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

|            |              |            |  |  |
|------------|--------------|------------|--|--|
| <b>GFR</b> | <b>2</b>     | <b>B</b>   | <b>06</b>  | <b>030</b>   |
|            | No. of Poles | Trip Curve | Rated Current  | Residual Current Sensitivity   |
|            | 2, 4         | B, C, D    | 5, 6, 8, 10, 12, 13, 15, 16, 20, 25, 30, 32, 35, 40A | 010 = 10mA*<br>030 = 30mA<br>100 = 100mA<br>300 = 300mA<br>500 = 500mA |

**EXAMPLE:  
GFR2B06030**

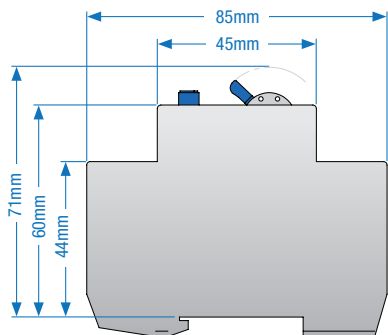
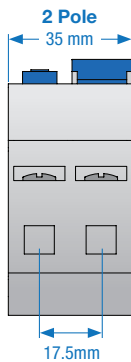
\* 10mA only available on current ratings up to 25A, 2 pole only

### Technical Specification

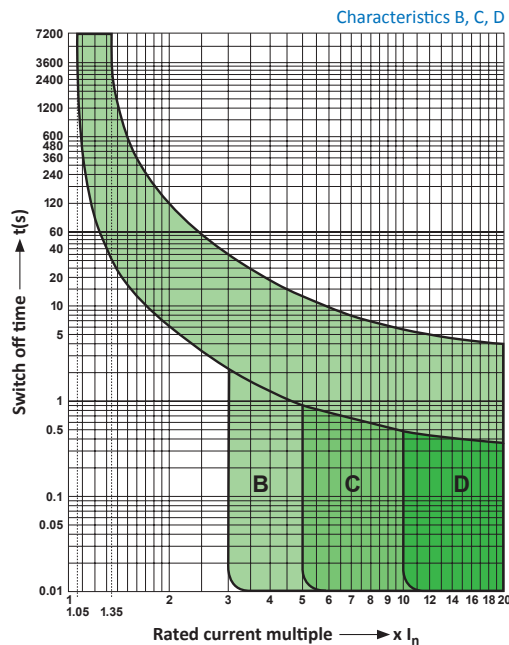
|  |  |              |
|--|--|--------------|
| Number of Poles                                    | 2  | 4            |
| Rated Voltage (U <sub>n</sub> )                    | 277V AC  | 480Y/277V AC |
| Rated Current                                      | 5, 6, 8, 10, 12, 13, 15, 16, 20, 25, 30, 32, 35, 40A   |              |
| Rated Residual Operating Current (I <sub>n</sub> ) | 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 (1.5mm <sup>2</sup> - 25mm <sup>2</sup> ) @ 17.5lb-in (2.0Nm)<br>Solid wire sized 16 - 10 AWG (1.5mm <sup>2</sup> - 5.5mm <sup>2</sup> ) @ 17.5lb-in (2.0Nm)<br>Solid wire sized 18 - 16 AWG (1mm <sup>2</sup> - 1.5mm <sup>2</sup> ) @ 25lb-in (2.8Nm) |              |
| Electrical Life                                    | 6000 Switching Operations  |              |
| Mechanical Life                                    | 10000 Switching Operations   |              |

### GFR Series RCBO Short Circuit Withstand Rating

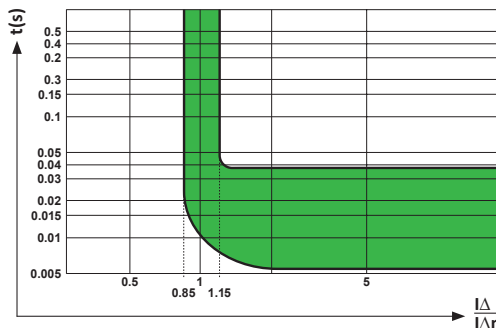
| V                      | I    | IR   | Backup  |
|------------------------|------|------|---|
| 2 Pole<br>277V AC      | ≤20A | 10kA | None  |
|                        | >20A | 10kA | Class J Fuse 250A or lower<br>Altech L Series Branch Circuit Breaker<br>Altech R Series Supplementary Protector |
| 4 Pole<br>480Y/277V AC | ≤20A | 10kA | None  |
|                        | >20A | 10kA | Class J Fuse 250A or lower<br>Altech L Series Branch Circuit Breaker<br>Altech R Series Supplementary Protector |



### GFR Series RCBO Overload Trip Curves



### GFR Series RCBO Ground Fault Trip Curve



UL 1077  
Ground Fault Relay  
with Overload Protection