G-Series
DIN-RAIL CIRCUIT BREAKER

The G-Series hydraulic-magnetic circuit breaker insures maximum protection by integrating wiping contacts for longevity; a common trip linkage between poles; a unique terminal bus connection system; and optional integrated auxiliary switch. It is also suitable for reverse feed and provides finger safe terminals. This DIN rail mount circuit breaker accommodates either a 35mm x 7.5mm, or a 35mm x 15mm symmetrical din rails.

G-Series DIN Rail Circuit Breaker:
UL 489 Listed: 1 to 3 poles; 1-50 Amps; 125 VDC, 240 VAC;
UL 1077 Recognized: 1 to 4 poles; 0.1-63 Amps; 80 VDC, 240 VAC/480VAC; cUL, TUV, CSA & CCC.

Resources:
Configure a Complete Part
Download CAD & Sales Drawing

Product Highlights:
- DIN Rail Mounting
- UL 489 Listed
- UL 1077 Recognized, cUL, TUV, CSA & CCC
- Wiping Contacts
- Common Trip Linkage Between Poles
- Optional Integrated Auxiliary Switch

Typical Applications:
- Renewable Energy
- Telecom
- Control Panels
- Industrial Automation Controls
**G-Series**

**DESIGN FEATURES**

**TERMINAL BARRIERS**
Meet UL 489 Spacing Requirements

**OPTIONAL AUXILIARY SWITCH**
Provides Breaker Status Indication

**DIN RAIL LOCK**
Secures Circuit Breaker to the DIN Rail

---

### Auxiliary Switch with Internal Connector

**Example Plugs:**

- Spring clamp terminals
- Screw terminals
- Screw terminals 45° angle

<table>
<thead>
<tr>
<th>Dimensions in mm</th>
<th>Spring clamp terminals</th>
<th>Screw terminals</th>
<th>Screw terminals 45° angle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wire size solid wire</td>
<td>0.2 - 1.5 mm²</td>
<td>Wire size stranded wire</td>
<td>0.2 - 2.5 mm²</td>
</tr>
<tr>
<td>Wire size stranded wire with ferrule</td>
<td>0.25 - 1.5 mm²</td>
<td>Wire stripping length</td>
<td>10 mm</td>
</tr>
</tbody>
</table>

**Advantages:**
- Pre-wiring is possible
- Easy interchangeable
- Time saving solution
- Various connection methods
- Many different plugs

---

*Manufacturer reserves the right to change product specification without prior notice.*
# G-Series Circuit Breaker - DIN Rail – General Specifications

## Electrical Tables

### Table A: Lists UL Recognized, CSA Accepted and TUV Certified capabilities as a Component Supplementary Protector.

<table>
<thead>
<tr>
<th>Circuit Configuration</th>
<th>Voltage</th>
<th>Current Rating</th>
<th>Short Circuit Capacity (Amps)</th>
<th>Application Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Max Rating</td>
<td>Frequency</td>
<td>Phase</td>
<td>Minimum Poles</td>
</tr>
<tr>
<td>Series</td>
<td>80 DC</td>
<td>---</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>240 50 / 60</td>
<td>1</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>240 50 / 60</td>
<td>1</td>
<td>2</td>
<td>.1 - 63</td>
</tr>
<tr>
<td></td>
<td>480 50 / 60</td>
<td>3</td>
<td>3</td>
<td>.1 - 63</td>
</tr>
</tbody>
</table>

### Table B: Lists UL Listed (489) configuration and performance capabilities.

<table>
<thead>
<tr>
<th>Circuit Configuration</th>
<th>Voltage</th>
<th>Current Rating</th>
<th>Interrupting Capacity (Amps RMS)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Max Rating</td>
<td>Frequency</td>
<td>Phase</td>
</tr>
<tr>
<td>Series</td>
<td>80 DC</td>
<td>---</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>125 DC</td>
<td>---</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>120 50 / 60</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>120 / 240</td>
<td>50 / 60</td>
<td>1</td>
</tr>
</tbody>
</table>

1 One pole out of the three poles must be a neutral break.

## Electrical

**Maximum Voltage**
AC: 240VAC (single pole), 480VAC (3 poles, additional pole shall be dedicated for neutral break)
DC: 80VDC (single pole & multipole)
0.1 – 63A. Other ratings available, see Ordering Scheme.

**Current Rating**
0.1 – 63A. Other ratings available, see Ordering Scheme.

**Auxiliary Switch Rating**
(Optional) Integrated, load side.
SPST, 3A – 125VAC, 2A – 30VDC.
Auxiliary switch senses the on & off position of circuit breaker handle, as well as contact arm position.
Switch connections are screw terminals.

**Insulation Resistance**
Minimum of 100 Megohms at 500 VDC
UL, CSA: 1960 V 50/60 Hz for one minute between all electrically isolated terminals. G-Series circuit breakers comply with the 8mm spacing and 3750V 50/60 Hz dielectric requirements from hazardous voltage to operator accessible surfaces, between adjacent poles and from main circuits to auxiliary circuits per Publications EN 60950 and VDE 0805.

**Dielectric Strength**
AC: 240VAC (single pole), 480VAC (3 poles, additional pole shall be dedicated for neutral break)
DC: 80VDC (single pole & multipole)
0.1 – 63A. Other ratings available, see Ordering Scheme.

**Resistance, Impedance**
Values from Line to Load Terminal - based on series trip circuit breaker.

## Mechanical

**Endurance**
10,000 ON-OFF operations @ 6 per minute; with rated current & voltage.
All G-Series circuit breakers will trip on overload, even when actuator is forcibly held in the ON position.

**Trip Free**
The operating actuator moves positively to the OFF position when an overload causes the breaker to trip. With mid-trip, the handle moves to the mid position on electrical trip of the circuit breaker. With mid trip handle with alarm switch, handle moves to the mid position and the alarm switch actuates when the circuit breaker is electrically tripped.

**Trip Indication**
The operating actuator moves positively to the OFF position when an overload causes the breaker to trip. With mid-trip, the handle moves to the mid position on electrical trip of the circuit breaker. With mid trip handle with alarm switch, handle moves to the mid position and the alarm switch actuates when the circuit breaker is electrically tripped.

## Physical

**Number of Poles**
1 pole ≤ 63A, 2 poles ≤ 63A per pole

**Weight**
Approx. 172 grams/pole (4.13 oz).

**Standard Colors**
Housing: Black

## Environmental

**Designed in accordance with requirements of specification MIL-PRF-55629 & MIL-STD-202 as follows:**

**Shock**
Withstands 100 Gs, 6ms sawtooth while carrying rated current per Method 213, Test Condition "I".
Instantaneous and ultrashort curves tested @ 90% of rated current.

**Vibration**
Withstands 0.060" excursion from 10-55 Hz & 10 Gs 55-500 Hz, @ rated current per Method 204C, Test Cond. A. Instantaneous & ultrashort curves tested @ 90% of rated current.

**Moisture Resistance**
Method 106D, i.e., ten 24-hour cycles @ -25°C to +65°C, 80-98% RH.

**Salt Spray**
Method 101, Condition A (90-95% RH @ 5% NaCl Solution, 96 hrs).

**Thermal Shock**
Method 107D, Condition A (five cycles @ -55°C to +25°C to +85°C to +25°C).

**Operating Temperature**
-40°C to +85°C
4 | G-Series Circuit Breaker - DIN Rail – UL Recognized – Ordering Scheme

### 1 SERIES

**G**

### 2 ACTUATOR

- **A**: Handle, one per pole
- **S**: Mid-Trip Handle, one per pole

### 3 POLES

- **1**: One
- **2**: Two
- **3**: Three
- **4**: Four

### 4 CIRCUIT

- **A**: Switch Only (no coil)
- **B**: Series Trip (current)

### 5 AUXILIARY / ALARM SWITCH

- **0**: without Aux Switch
- **1**: S.P.D.T., Screw Terminal
- **3**: S.P.D.T. Screw Terminal (Gold Contacts)
- **5**: Plug-in Terminal
- **6**: Plug-in Terminal (Gold Contacts)

### 6 FREQUENCY & DELAY

- **03**: Switch Only
- **10**: DC, Instantaneous
- **11**: DC, Ultra Short
- **12**: DC, Short
- **14**: DC, Medium
- **16**: DC, Long
- **20**: 50/60 Hz Instantaneous
- **21**: 50/60 Hz Ultra Short
- **22**: 50/60 Hz Short
- **24**: 50/60 Hz Medium

### 7 CURRENT RATING (AMPERES)

<table>
<thead>
<tr>
<th>CODE</th>
<th>AMPERES</th>
</tr>
</thead>
<tbody>
<tr>
<td>210</td>
<td>0.100</td>
</tr>
<tr>
<td>220</td>
<td>0.200</td>
</tr>
<tr>
<td>225</td>
<td>0.250</td>
</tr>
<tr>
<td>230</td>
<td>0.300</td>
</tr>
<tr>
<td>235</td>
<td>0.350</td>
</tr>
<tr>
<td>240</td>
<td>0.400</td>
</tr>
<tr>
<td>245</td>
<td>0.450</td>
</tr>
<tr>
<td>250</td>
<td>0.500</td>
</tr>
<tr>
<td>255</td>
<td>0.550</td>
</tr>
<tr>
<td>260</td>
<td>0.600</td>
</tr>
<tr>
<td>265</td>
<td>0.650</td>
</tr>
<tr>
<td>270</td>
<td>0.700</td>
</tr>
<tr>
<td>275</td>
<td>0.750</td>
</tr>
<tr>
<td>280</td>
<td>0.800</td>
</tr>
<tr>
<td>285</td>
<td>0.850</td>
</tr>
<tr>
<td>290</td>
<td>0.900</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CODE</th>
<th>AMPERES</th>
</tr>
</thead>
<tbody>
<tr>
<td>410</td>
<td>1.000</td>
</tr>
<tr>
<td>512</td>
<td>1.250</td>
</tr>
<tr>
<td>415</td>
<td>1.500</td>
</tr>
<tr>
<td>517</td>
<td>1.750</td>
</tr>
<tr>
<td>420</td>
<td>2.000</td>
</tr>
<tr>
<td>522</td>
<td>2.250</td>
</tr>
<tr>
<td>425</td>
<td>2.500</td>
</tr>
<tr>
<td>527</td>
<td>2.750</td>
</tr>
<tr>
<td>430</td>
<td>3.000</td>
</tr>
<tr>
<td>435</td>
<td>3.500</td>
</tr>
<tr>
<td>440</td>
<td>4.000</td>
</tr>
<tr>
<td>445</td>
<td>4.500</td>
</tr>
<tr>
<td>450</td>
<td>5.000</td>
</tr>
<tr>
<td>455</td>
<td>5.500</td>
</tr>
<tr>
<td>460</td>
<td>6.000</td>
</tr>
<tr>
<td>465</td>
<td>6.500</td>
</tr>
<tr>
<td>470</td>
<td>7.000</td>
</tr>
<tr>
<td>475</td>
<td>7.500</td>
</tr>
<tr>
<td>480</td>
<td>8.000</td>
</tr>
<tr>
<td>485</td>
<td>8.500</td>
</tr>
<tr>
<td>490</td>
<td>9.000</td>
</tr>
<tr>
<td>495</td>
<td>9.500</td>
</tr>
<tr>
<td>510</td>
<td>10.000</td>
</tr>
<tr>
<td>517</td>
<td>10.500</td>
</tr>
<tr>
<td>522</td>
<td>11.000</td>
</tr>
<tr>
<td>527</td>
<td>11.500</td>
</tr>
<tr>
<td>532</td>
<td>12.000</td>
</tr>
<tr>
<td>537</td>
<td>12.500</td>
</tr>
<tr>
<td>542</td>
<td>13.000</td>
</tr>
<tr>
<td>547</td>
<td>13.500</td>
</tr>
<tr>
<td>552</td>
<td>14.000</td>
</tr>
<tr>
<td>557</td>
<td>14.500</td>
</tr>
<tr>
<td>562</td>
<td>15.000</td>
</tr>
<tr>
<td>563</td>
<td>15.500</td>
</tr>
</tbody>
</table>

### 8 TERMINAL

- **1**: Screw Terminal

### 9 ACTUATOR COLOR & LEGEND

<table>
<thead>
<tr>
<th>Actuator Color</th>
<th>I-O</th>
<th>ON-OFF</th>
<th>Dual</th>
<th>Legend Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>A</td>
<td>B</td>
<td>1</td>
<td>Black</td>
</tr>
<tr>
<td>Black</td>
<td>C</td>
<td>D</td>
<td>2</td>
<td>White</td>
</tr>
<tr>
<td>Red</td>
<td>F</td>
<td>G</td>
<td>3</td>
<td>White</td>
</tr>
<tr>
<td>Green</td>
<td>H</td>
<td>J</td>
<td>4</td>
<td>White</td>
</tr>
<tr>
<td>Blue</td>
<td>K</td>
<td>L</td>
<td>5</td>
<td>White</td>
</tr>
<tr>
<td>Yellow</td>
<td>M</td>
<td>N</td>
<td>6</td>
<td>Black</td>
</tr>
<tr>
<td>Gray</td>
<td>P</td>
<td>Q</td>
<td>7</td>
<td>Black</td>
</tr>
<tr>
<td>Orange</td>
<td>R</td>
<td>S</td>
<td>8</td>
<td>Black</td>
</tr>
</tbody>
</table>

### 10 APPLICATION RATING

- **B**: 125 VDC
- **D**: 240 VAC
- **H**: 480 VAC
- **M**: 80 VDC

### 11 AGENCY APPROVAL

- **A**: Without Approvals
- **C**: UL Recognized, CSA Accepted
- **E**: UL Recognized, CSA Accepted, TUV Certified, CCC Certified

**Notes:**
1. Switch only circuit only available when tied to a protected pole (Circuit code B) - for 2 to 30 amps select current code 630 - for 31 to 50 amps select current code 650 - for 51 to 63 amps select current code 663 - Use delay 03 for all switch only poles
2. Hi Inrush Delays limited to 50A max
3. On multi-pole breakers one auxiliary switch is supplied, mounted in the extreme left pole when viewed from front of panel
4. 480 VAC rating requires 3 or 4 pole break 3Φ and 2 pole break 1Φ
5. This construction is polarity sensitive when constructed as a single pole unit, 125 VDC is only available without agency approvals
# G-Series Circuit Breaker - DIN Rail – UL489 – Ordering Scheme

## 1 Series
- **G**

## 2 Actuator
- **A** Handle, one per pole
- **S** 1 Mid-Trip Handle, one per pole

## 3 Poles
- 1 One
- 2 Two
- 3 Three

## 4 Circuit
- **B** Series Trip (current)

## 5 Auxiliary / Alarm Switch
- 0 without Aux Switch
- 1 S.P.D.T. Screw Terminal
- 3 S.P.D.T. Screw Terminal (Gold Contacts)
- 5 Plug-in Terminal
- 6 Plug-in Terminal (Gold Contacts)

## 6 Frequency & Delay
- 11 DC, Ultra Short
- 12 DC, Short
- 14 DC, Medium
- 16 DC, Long
- 21 50/60 Ultra Short
- 22 50/60 Hz Short
- 24 50/60 Hz Medium
- 26 50/60 Hz Long

## 7 Current Rating (Amperes)

<table>
<thead>
<tr>
<th>Code</th>
<th>AMPERES</th>
<th>512</th>
<th>1.250</th>
<th>450</th>
<th>5.000</th>
<th>710</th>
<th>10.500</th>
<th>620</th>
<th>20.000</th>
</tr>
</thead>
<tbody>
<tr>
<td>510</td>
<td>1.000</td>
<td>445</td>
<td>4.500</td>
<td>610</td>
<td>10.000</td>
<td>618</td>
<td>18.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>415</td>
<td>1.500</td>
<td>455</td>
<td>5.500</td>
<td>611</td>
<td>11.000</td>
<td>622</td>
<td>22.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>417</td>
<td>1.750</td>
<td>460</td>
<td>6.000</td>
<td>711</td>
<td>11.500</td>
<td>624</td>
<td>24.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>420</td>
<td>2.000</td>
<td>465</td>
<td>6.500</td>
<td>612</td>
<td>12.000</td>
<td>625</td>
<td>25.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>425</td>
<td>2.500</td>
<td>475</td>
<td>7.500</td>
<td>712</td>
<td>12.500</td>
<td>630</td>
<td>30.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>427</td>
<td>2.750</td>
<td>480</td>
<td>8.000</td>
<td>614</td>
<td>14.000</td>
<td>640</td>
<td>40.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>430</td>
<td>3.000</td>
<td>485</td>
<td>8.500</td>
<td>615</td>
<td>15.000</td>
<td>650</td>
<td>50.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>435</td>
<td>3.500</td>
<td>490</td>
<td>9.000</td>
<td>616</td>
<td>16.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>440</td>
<td>4.000</td>
<td>495</td>
<td>9.500</td>
<td>617</td>
<td>17.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## 8 Terminal
- 1 Screw Terminal

## 9 Actuator Color & Legend
- **Actuator Color** ON-OFF Dual **Legend Color**
- White  B  1  Black
- Black  D  2  White
- Red    G  3  White
- Green  J  4  White
- Blue   L  5  White
- Yellow N  6  Black
- Gray   Q  7  Black
- Orange S  8  Black

## 10 Application Rating
- **B** 125 VDC 5
- **C** 120/240 VAC 6
- **D** 240 VAC 7
- **K** 120 VAC 8
- **M** 80 VDC 9

## 11 Agency Approval
- **G** UL489 Listed

Notes:
1. Mid-trip Handle(s) available at 1 pole unit and 2 pole unit only.
2. Third pole of a 3 pole unit is switch only pole.
3. On multi-pole breakers one auxiliary switch is supplied, mounted in the extreme left pole when viewed from front of panel.
4. Hi Inrush Delays limited to 50A maximum.
5. 125VDC for 2 pole unit only.
6. 120/240VAC for 2 pole and 3 pole unit only. Limited to 50A maximum, and third pole of a 3-pole unit is switch only pole.
7. 240VAC for 1 pole unit only, limited to 25A maximum
8. 120VAC for 1 pole unit only, limited to 50A maximum.
9. 80VDC for 1 pole unit only
**Dimensional Specifications: in. [mm]**

### 1 POLE WITHOUT AUXILIARY SWITCH

![Diagram of 1 POLE WITHOUT AUXILIARY SWITCH](image)

### 1 POLE WITH AUXILIARY SWITCH (PLUG-IN TERMINAL BLOCK)

![Diagram of 1 POLE WITH AUXILIARY SWITCH (PLUG-IN TERMINAL BLOCK)](image)

### 1 POLE WITH AUXILIARY SWITCH (SCREW TERMINAL BLOCK)

![Diagram of 1 POLE WITH AUXILIARY SWITCH (SCREW TERMINAL BLOCK)](image)

### MULTIPLE POLES WITH AUXILIARY SWITCH (PLUG-IN TERMINAL BLOCK)

![Diagram of MULTIPLE POLES WITH AUXILIARY SWITCH (PLUG-IN TERMINAL BLOCK)](image)

**Notes:**

1. All dimensions are in inches [millimeters].
2. Tolerance ±0.020 [0.51] unless otherwise specified.
Dimensional Specifications: in. [mm]

1 POLE WITHOUT AUXILIARY SWITCH

1 POLE WITH AUXILIARY SWITCH (PENDING) (PLUG-IN TERMINAL BLOCK)

1 POLE WITH AUXILIARY SWITCH (PENDING) (SCREW TERMINAL BLOCK)

MULTIPLE POLES WITH AUXILIARY SWITCH (PENDING) (PLUG-IN TERMINAL BLOCK)

Notes:
1 All dimensions are in inches [millimeters].
2 Tolerance ±0.020 [0.5] unless otherwise specified.
Authorized Sales Representatives and Distributors

Click on a region of the map below to find your local representatives and distributors or visit www.carlingtech.com/findarep.

About Carling

Founded in 1920, Carling Technologies is a leading manufacturer of electrical and electronic switches and assemblies, circuit breakers, electronic controls, power distribution units, and multiplexed power distribution systems. With four ISO registered manufacturing facilities and technical sales offices worldwide, Carling Technologies Sales, Service and Engineering teams do much more than manufacture electrical components, they engineer powerful solutions! To learn more about Carling please visit www.carlingtech.com/company-profile.

To view all of Carling’s environmental, quality, health & safety certifications please visit www.carlingtech.com/environmental-certifications