**J-Series**

**CIRCUIT BREAKER**

Designed to provide high levels of circuit protection, the J-Series is a compact, low profile hydraulic magnetic circuit breaker ideally suited for high power density applications. This newest addition to the Carling circuit breaker portfolio is available with a variety of actuator styles and terminal options to suit most any requirement.

1-3 poles; ratings from: 1-20 amps, up to 240VAC; UL 489 Listed, cULus Listed and TUV EN60947-2.

**Product Highlights:**
- Low Profile / Depth
- Up to 10,000AIC Short Circuit Capacity
- UL 489 Listed, cULus Listed and TUV EN60947-2

**Typical Applications:**
- Datacom / Telecom
- AC Power Distribution Units
- AC Power Supplies
- Power Dense Motors & Controls
- Marine Applications Requiring Higher Interrupting Capacity

**Resources:**
- Configure a Complete Part
- Download CAD & Sales Drawing
- Watch Product Video
**Electrical Tables**

**Table A: Voltage and Current Rating**

<table>
<thead>
<tr>
<th>Circuit Configuration</th>
<th>Voltage</th>
<th>Current Rating</th>
<th>Short Circuit Capacity (Amps)</th>
<th>Construction Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Max Rating</td>
<td>Frequency</td>
<td>Phase</td>
<td>Full Load Amps</td>
</tr>
<tr>
<td>Series</td>
<td>120/240</td>
<td>50 / 60</td>
<td>1</td>
<td>1.0 - 20.0</td>
</tr>
<tr>
<td></td>
<td>240</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Electrical**

- **Dielectric Strength**: Meets UL and cULUS requirements and can withstand 1500 VAC, 60Hz for one minute between all electrically isolated terminals.
- **Insulation Resistance**: Minimum of 100 Megohms @ 500VDC
- **Overload**: 50 operations @ 600% of rated current for AC rated devices.
- **Inrush Pulse Tolerance**: Standard delays 12 times rated current, high inrush delays 25x for ½ cycle @ 60Hz
- **Interrupt Capacity**: See Table A
- **Resistance / Impedance**: (Across circuit breaker terminals)
- **Agency Approvals**: UL489, cUL CAN/CSA 22.2 No. 5, TUV EN60947-2

**Physical**

- **Number of Poles**: 1 - 3 poles
- **Termination**: Designed for use with straight, fork, flanged fork, and ring terminals.
- **Termination Torque**: See dimensional specs page (Table 1) for tightening torque specifications (Line and Load terminals)
- **Terminal Barrier**: Foldable barriers to comply with regulatory standards.
- **Mounting**: Threaded Insert: #6-32 UNC-2B or M3 x 0.5-6 H B ISO (2 per Pole).
- **Insert Termination Torque**: 7-9 in-lbs
- **Actuator**: Rocker with or without guard
- **Internal Circuit Config.**: Series Trip, without auxiliary switch
- **Materials**: Housing - Glass Filled Polyester, Rocker – Nylon, Line/Load Terminals – Copper Alloy, Bright Acid Tin Plated
- **Weight**: ~170 Grams (~5.75 Ounces) per pole
- **Standard Color**: Housing - Black, Rocker – Several (See ordering scheme)

**Environmental**

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

- **Shock**: Withstands 100G’s, 6ms saw tooth while carrying rated current per Method 213B, Test Condition “I”. Instantaneous and ultra short curves tested @ 90% rated current.
- **Vibration**: Withstands 0.060" excursion from 10-55Hz, and 10G’s 55-500Hz, at rated current per Method 204C, Test Condition A. Instantaneous and ultrashort curves tested @ 90% of rated current.
- **Moisture Resistance**: Method 106G, i.e., Ten 24-hour cycles at +25°C to +65°C, 80-98% RH.
- **Salt Spray**: Method 101, Condition A (90-95% RH @ 5% NaCl Solution, 96 hours)
- **Thermal Shock**: Method 107G, Condition A (Five cycles @ -55°C to +25°C to +85°C to 25°C)
- **Operating Temperature**: -40°C to +85°C
- **Storage Temperature**: -40°C to +85°C

**Agency Approvals**

UL489, cUL CAN/CSA 22.2 No. 5, TUV EN60947-2

*Manufacturer reserves the right to change product specification without prior notice.*
## J-Series Circuit Breaker – Ordering Scheme

### 1 SERIES

| J | J-Series Circuit Breaker |

### 2 ACTUATOR

**FLAT ROCKER:**
- Two Color Visi-Rocker: 1. Indicate OFF, vertical legend 2. Indicate OFF, horizontal legend
- Single color: 3. Vertical legend 4. Horizontal legend

**Push-To-Reset, Visi-Rocker:**
- 5. Indicate OFF, vertical legend 6. Indicate OFF, horizontal legend

**CURVED ROCKER:**
- Two Color Visi-Rocker: C. Indicate ON, vertical legend  D. Indicate ON, horizontal legend
- Single color: F. Indicate OFF, vertical legend  G. Indicate OFF, horizontal legend

### 3 POLES

<table>
<thead>
<tr>
<th>1</th>
<th>One</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Two</td>
</tr>
<tr>
<td>3</td>
<td>Three</td>
</tr>
</tbody>
</table>

### 4 CIRCUIT

| B | Series Trip (Current) |

### 5 AUXILIARY SWITCH

| 0 | without Aux Switch |

### 6 FREQUENCY & TIME DELAY

| 20 | 50 / 60Hz Instantaneous |
| 21 | 50 / 60Hz Ultra Short |
| 22 | 50 / 60Hz Short |
| 24 | 50 / 60Hz Medium |
| 26 | 50 / 60Hz Long |
| 42 | 50 / 60Hz Short, Hi-Inrush |
| 44 | 50 / 60Hz Medium, Hi-Inrush |
| 46 | 50 / 60Hz Long, Hi-Inrush |

### 7 CURRENT RATING (AMPERES)

<table>
<thead>
<tr>
<th>CODE AMPERES</th>
<th>410</th>
<th>512</th>
<th>415</th>
<th>517</th>
<th>420</th>
<th>522</th>
<th>425</th>
<th>527</th>
<th>430</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMPERES</td>
<td>1.00</td>
<td>1.25</td>
<td>1.50</td>
<td>1.75</td>
<td>2.00</td>
<td>2.25</td>
<td>2.50</td>
<td>2.75</td>
<td>3.00</td>
</tr>
<tr>
<td>435</td>
<td>3.50</td>
<td>4.00</td>
<td>4.50</td>
<td>5.00</td>
<td>5.50</td>
<td>6.00</td>
<td>6.50</td>
<td>7.00</td>
<td>7.50</td>
</tr>
<tr>
<td>480</td>
<td>8.00</td>
<td>8.50</td>
<td>9.00</td>
<td>9.50</td>
<td>10.00</td>
<td>10.50</td>
<td>11.00</td>
<td>11.50</td>
<td>12.00</td>
</tr>
<tr>
<td>512</td>
<td>12.50</td>
<td>13.00</td>
<td>14.00</td>
<td>15.00</td>
<td>16.00</td>
<td>17.00</td>
<td>18.00</td>
<td>19.00</td>
<td>20.00</td>
</tr>
</tbody>
</table>

### 8 TERMINAL

| 1 | Push-On .250 Tab (O.C.) |
| 2 | Screw 8-32 with upturned lugs |
| 4 | Screw 8-32 (Bus Type) |
| 5 | Screw 10-32 with upturned lugs |
| 6 | Screw 8-32 with upturned lugs and 30° Bend |
| 7 | Screw 8-32 (Bus Type) and 30° Bend |
| 8 | Screw 10-32 with upturned lugs and 30° Bend |
| 9 | Screw 10-32 (Bus Type) and 30° Bend |
| B | Screw M5 with upturned lugs |
| C | Screw M4 with upturned lugs |
| F | Screw M5 with upturned lugs and 30° Bend |
| G | Screw M5 (Bus Type) and 30° Bend |
| H | Screw M5 (Bus Type) |
| J | Screw M5 Back Connect |
| K | Screw 10-32 Back Connect |
| L | Screw 10-32 Back Connect, Alt. Spacing |
| M | Screw M5 Back Connect, Alt. Spacing |
| N | Screw M4 Back Connect |
| P | Screw M4 Back Connect, Alt. Spacing |
| R | Screw 8-32 Back Connect, Alt. Spacing |
| Y | Screw 8-32 Back Connect |

### 9 ACTUATOR COLOR & LEGEND

<table>
<thead>
<tr>
<th>Actuator or Visi-Color</th>
<th>Marking:</th>
<th>Marking Color:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Color</td>
<td>ON-OFF</td>
<td>Dual</td>
</tr>
<tr>
<td>Rockerguard (Curved Rocker) / Push-to-Reset (Flat Rocker) Bezel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard Rocker Bezel</td>
<td>A</td>
<td>6-32 x .195 inches</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>ISO M3 x 5 mm</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>6-32 x .195 inches</td>
</tr>
<tr>
<td></td>
<td>D</td>
<td>ISO M3 x 5 mm</td>
</tr>
<tr>
<td></td>
<td>E</td>
<td>6-32 x .195 inches</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>ISO M3 x 5 mm</td>
</tr>
</tbody>
</table>

### 10 MOUNTING

<table>
<thead>
<tr>
<th>Standard Rocker Bezel</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
</tr>
<tr>
<td>B</td>
</tr>
<tr>
<td>C</td>
</tr>
<tr>
<td>D</td>
</tr>
<tr>
<td>E</td>
</tr>
<tr>
<td>F</td>
</tr>
</tbody>
</table>

### 11 APPLICATION RATING

| C                     | 120 / 240 VAC |
| D                     | 240 VAC |

### 12 AGENCY APPROVAL

| A                     | Without Approvals |
| G                     | UL489 Listed, cULus Listed |
| 3                    | UL489 Listed, cULus Listed, TUV Certified |

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**Notes:**
1. 3 Pole Units available when 1 of 3 poles is neutral.
2. 20 Delay available only with no agency approvals.
3. Refer to dimensional specifications for alternate back connect terminal spacing dimension.
4. UL489 Listed, cULus Listed, TUV Certified
5. For codes A through F, rocker to be on Pole 1 for multi pole breakers with behind the panel standoff bracket on pole 1. For 1 & 3 pole breakers use codes A-F.
6. Voltage Rating available with 2 and 3 pole breakers only.

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**Application Support:** team2@carlingtech.com  
**Phone:** (860) 793–9281  
**Fax:** (860) 793–9231  
**www.carlingtech.com**
Dimensional Specifications: in. [mm]

Notes:
1. All dimensions are in inches [millimeters].
2. Tolerance ± 0.020 [.51] unless otherwise specified.
Dimensional Specifications: in. [mm]

**INDICATE “OFF” & SINGLE COLOR (INDICATE “OFF” SHOWN)**

**Notes:**
1. All dimensions are in inches [millimeters].
2. Tolerance ± 0.020 [.51] unless otherwise specified.
**Dimensional Specifications: in. [mm]**

**TERMINAL SPACING**

**SCREW TERMINAL & PUSH-IN O.C. TAB**

- T丰富 2.380 [60.45]
- SCREW 2.430 [61.72]

- 1.569 [39.84]

**SCREW TERMINAL WITH 30° BEND**

- 0.47 [10.53] REF
- 30.0°
- 1.570 [39.87]

**BACK CONNECT SCREW TERMINAL WITH RETAINER**

- 1.250 [31.75]

**BACK CONNECT SCREW TERMINAL WITH RETAINER - ALTERNATIVE SPACING**

- 1.368 [34.74]

**TABLE 1 TIGHTENING TORQUE SPECIFICATIONS**

<table>
<thead>
<tr>
<th>THREAD SIZE</th>
<th>TORQUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>#6-32 &amp; M3 MOUNTING HARDWARE</td>
<td>7-9 IN-LBS (0.8-1.0 NM)</td>
</tr>
<tr>
<td>#8-32 &amp; M4 THREAD TERMINAL SCREW</td>
<td>12-15 IN-LBS (1.4-1.7 NM)</td>
</tr>
<tr>
<td>#10-32 &amp; M5 THREAD TERMINAL SCREW</td>
<td>15-20 IN-LBS (1.7-2.3 NM)</td>
</tr>
</tbody>
</table>

**Notes:**
1. All dimensions are in inches [millimeters].
2. Tolerance ± 0.020 [0.51] unless otherwise specified.
Trip Time Delays

Ultrashort

AC

Short

Medium

Long

High Inrush AC

Short

Medium

Long
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
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