D-Series
CIRCUIT BREAKER

Designed for snap-on-back panel rail mounting on either a 35mm x 7.5mm, or a 35mm x 15mm Symmetrical Din Rail, allowing rapid and simple mounting and removal of the breaker. It features recessed, wire-ready, touch-proof, shock-resistant terminals, suitable for automatic screwdriver assembly, as well as “Dead Front” construction characteristics.

Available with a Visi-Rocker two-color actuator, which can be specified to indicate either the ON or the TRIPPEd/OFF mode, or solid color rocker or handle type actuators. All actuator types fit in the same industry standard panel cutouts.

Product Highlights:
- 0.02 - 50 Amps
- 480 VAC or 65 VDC
- 1-4 poles (Handle)
- 1-3 poles (Rocker)
- Choice of Time Delays
- DIN rail mounting
- Precise temperature independent operation
- Wiping contacts – mechanical linkage with two-step
- Finger safe terminals
- Common trip linkage between poles ensures that an overload in one pole will trip all adjacent poles

Typical Applications:
- Industrial Controls
- Renewable Energy

Resources:
Configure a Complete Part
Download CAD & Sales Drawing

Carling Technologies, Inc.
60 Johnson Avenue, Plainville, CT 06062
Email: sales@carlingtech.com
Application Support: team2@carlingtech.com
Phone: 860.793.9281  Fax: 860.793.9231
www.carlingtech.com
# D-Series Circuit Breaker – General Specifications

## Electrical

**Maximum Voltage**

AC, 480 wye/277 VAC (See Table A), 50/60 Hz, 65VDC

**Standard Current Coils**

0.100, 0.250, 0.500, 0.750, 1.00, 2.50, 5.00, 7.50, 10.0, 15.0, 20.0, 25.0, 30.0, 35.0, 40.0 & 50.0. Other ratings available - consult factory.

**Standard Voltage Coils**

DC - 6V, 12V; AC - 120V, other ratings available, see ordering scheme.

**Insulation Resistance**

Minimum of 100 Megohms at 500 VDC.

**Dielectric Strength**

UL, CSA: 1960 V 50/60 Hz for one minute between all electrically isolated terminals. D-Series circuit breakers comply with the 8mm spacing and 3750V 50/60 Hz dielectric requirements from hazardous voltage to operator accessible surfaces and between adjacent poles per Publications EN 60950 and VDE 0805.

**Resistance, Impedance Values**

Values from Line to Load Terminal - based on Series Trip Circuit Breaker

### Pulse Tolerance Curves

#### 50 Hz 1/2 Cycle Imush Pulse Tolerance

<table>
<thead>
<tr>
<th>CURRENT (AMPS)</th>
<th>TOLERANCE (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.10 - 5.0</td>
<td>15</td>
</tr>
<tr>
<td>5.1 - 20.0</td>
<td>25</td>
</tr>
<tr>
<td>20.1 - 50.0</td>
<td>35</td>
</tr>
</tbody>
</table>

## Mechanical

**Endurance**

10,000 ON-OFF operations @ 6 per minute; with rated Current and Voltage.

**Trip Free**

All D-Series Circuit Breakers will trip on overload, even when actuator is forcibly held in the ON position.

**Trip Indication**

The operating actuator moves positively to the OFF position when an overload causes the breaker to trip.

## Physical

**Number of Poles**

Rocker Type: 1-3; Handle Type: 1-4

**Internal Circuit Config.**

Switch Only and Series Trip with current or voltage trip coils.

**Weight**

Approximately 128 grams/pole (Approximately 4.57 ounces/pole)

**Standard Colors**

Housing - Black; Actuator - See Ordering Scheme.

**Mounting**

Mounts on a standard 35mm Symmetrical DIN Rail (35 x 7.5 or 35 x 15mm per DIN EN5002).

## Environmental

Designed and tested 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 ultra-short curves tested @ 90% of rated current.

**Vibration**

Withstands 0.060" excursion from 10-55 Hz, and 10 Gs 55-500 Hz, at rated current per Method 204C, Test Condition A. Instantaneous and ultra-short curves tested at 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

*Manufacturer reserves the right to change product specification without prior notice.*
### Electrical Tables

**Table A**: Lists UL Recognized, CSA Accepted and VDE Certified configurations and performance capabilities as a Component Supplementary Protector.

#### D-SERIES TABLE A: COMPONENT SUPPLEMENTARY PROTECTORS

<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>FULL LOAD AMPS</td>
</tr>
<tr>
<td>SERIES</td>
<td>65</td>
<td>DC</td>
<td>--</td>
<td>0.02 - 50</td>
</tr>
<tr>
<td></td>
<td>80</td>
<td>DC</td>
<td>--</td>
<td>0.02 - 50</td>
</tr>
<tr>
<td></td>
<td>125 / 250</td>
<td>50 / 60</td>
<td>1</td>
<td>0.02 - 50</td>
</tr>
<tr>
<td></td>
<td>250</td>
<td>50 / 60</td>
<td>1 &amp; 3</td>
<td>0.02 - 50</td>
</tr>
<tr>
<td></td>
<td>277</td>
<td>50 / 60</td>
<td>1</td>
<td>0.02 - 50</td>
</tr>
<tr>
<td></td>
<td>480 Y³</td>
<td>50 / 60</td>
<td>1 &amp; 3</td>
<td>0.02 - 50</td>
</tr>
<tr>
<td>SWITCH ONLY</td>
<td>65</td>
<td>DC</td>
<td>--</td>
<td>0.02 - 50</td>
</tr>
<tr>
<td></td>
<td>250</td>
<td>50 / 60</td>
<td>3</td>
<td>0.02 - 50</td>
</tr>
<tr>
<td></td>
<td>277</td>
<td>50 / 60</td>
<td>1</td>
<td>0.02 - 50</td>
</tr>
<tr>
<td></td>
<td>480 Y³</td>
<td>50 / 60</td>
<td>1 &amp; 3</td>
<td>0.02 - 30</td>
</tr>
</tbody>
</table>

**Notes:**

1. DC and 1 Phase 277 V ratings are 1 or 2 poles breaking. Three phase ratings are 3 poles breaking.
2. Requires branch circuit backup with a UL LISTED Type K5 or RK5 fuse rated 15A minimum and no more than 4 times full load amps not to exceed 150A for 250V rating and 125A for 277 and 480 V ratings.
3. UL recognition and CSA Acceptance at 480 volts refers to 3 and 4 pole versions, used only in a 3 phase WYE connected circuit or 2 pole versions connected with 2 poles breaking 1 phase and backed up with series fusing per note 2.

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### Agency Certifications

**UL Recognized**

- UL Standard 1077

**CSA Accepted**

- Component Recognition Program as Protectors, Supplementary (Guide QVNU2, File E75596)

**UL Listed**

- UL Standard 508

**VDE Certified**

- EN60934, VDE 0642 under File No. 10537
### D-Series Circuit Breaker - Handle & Rocker – Ordering Scheme

#### 1 Series
- D

#### 2 Actuator
1. Handle
   - A: Handle, one per pole
   - B: Handle, one per multipole unit
2. Indicate ON, vertical legend
3. Indicate ON, horizontal legend
4. Indicate OFF, vertical legend
5. Indicate OFF, horizontal legend
6. Handle, one per multipole unit

#### 3 Polarity
- 1 Pole
  - One
- 2 Pole
  - Two
- 3 Pole
  - Three
- 4 Pole
  - Four

#### 4 Circuit
- A0: Switch Only (No Coil)
- B0: Series Trip (Current)
- C0: Series Trip (Voltage)

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

#### 6 Current Rating
- 03: 0.020
- 05: 0.050
- 07: 0.075
- 08: 0.080
- 09: 0.085
- 10: 0.100
- 20: 0.200
- 22: 0.220
- 25: 0.250
- 30: 0.300
- 31: 0.310
- 32: 0.320
- 40: 0.400
- 45: 0.450
- 50: 0.500
- 52: 0.520
- 54: 0.540
- 60: 0.600
- 62: 0.620
- 63: 0.630
- 65: 0.650
- 70: 0.700

#### 7 Terminal
- 1: #10 Screw & Pressure Plate for Direct Wire Connection
- 2: #10 Screw without Pressure Plate

#### 8 Actuator Color & Legend
- White
  - A: Black
  - C: Red
  - E: Green
  - J: Blue
- Black
  - D: White
  - F: Gray
  - H: Orange
  - K: Yellow
- Yellow
  - M: Black
  - N: Red
  - W: Green
  - Y: Orange
- Gray
  - P: Black
  - Q: Orange
  - R: Gray
  - S: Orange

#### 9 Mounting / Voltage
- 1: 6-32 x 0.195 inches
- 2: ISO M3 x 5mm
- 3: ISO M3 x 5mm

#### 10 Agency Approval
- A: UL Recognized & CSA Accepted
- B: VDE Certified, UL Recognized & CSA Accepted

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**ROCKER STYLE DESCRIPTIONS**

<table>
<thead>
<tr>
<th>Vertical Style</th>
<th>Indicate “ON”</th>
<th>Indicate “OFF”</th>
<th>Single Color</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Horizontal Style</th>
<th>Indicate “ON”</th>
<th>Indicate “OFF”</th>
<th>Single Color</th>
</tr>
</thead>
</table>

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**VOLTAGE COIL (NORMAL RATED VOLTAGE)**

<table>
<thead>
<tr>
<th>Code</th>
<th>AMPERES</th>
</tr>
</thead>
<tbody>
<tr>
<td>A06</td>
<td>6 DC, 5 DC</td>
</tr>
<tr>
<td>A12</td>
<td>12 DC, 10 DC</td>
</tr>
<tr>
<td>A18</td>
<td>18 DC, 15 DC</td>
</tr>
<tr>
<td>A24</td>
<td>24 DC, 20 DC</td>
</tr>
<tr>
<td>A32</td>
<td>32 DC, 25 DC</td>
</tr>
</tbody>
</table>

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**CURRENT RATING (AMPERES)**

<table>
<thead>
<tr>
<th>Code</th>
<th>AMPERES</th>
</tr>
</thead>
<tbody>
<tr>
<td>020</td>
<td>0.020</td>
</tr>
<tr>
<td>025</td>
<td>0.025</td>
</tr>
<tr>
<td>030</td>
<td>0.030</td>
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<tr>
<td>050</td>
<td>0.050</td>
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<tr>
<td>075</td>
<td>0.075</td>
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<tr>
<td>080</td>
<td>0.080</td>
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<tr>
<td>085</td>
<td>0.085</td>
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<td>100</td>
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<td>110</td>
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<td>120</td>
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<tr>
<td>220</td>
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<td>250</td>
<td>0.250</td>
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<tr>
<td>300</td>
<td>0.300</td>
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<tr>
<td>310</td>
<td>0.310</td>
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<tr>
<td>320</td>
<td>0.320</td>
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<tr>
<td>400</td>
<td>0.400</td>
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<tr>
<td>650</td>
<td>0.650</td>
</tr>
<tr>
<td>700</td>
<td>0.700</td>
</tr>
</tbody>
</table>

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**MOUNTING STYLE**

<table>
<thead>
<tr>
<th>Voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>6-32 x 0.195 inches</td>
</tr>
<tr>
<td>ISO M3 x 5mm</td>
</tr>
<tr>
<td>ISO M3 x 5mm</td>
</tr>
</tbody>
</table>

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**Email:** sales@carlingtech.com  
**Application Support:** team2@carlingtech.com  
**Phone:** (860) 793–9281  
**Fax:** (860) 793–9231  
[www.carlingtech.com](http://www.carlingtech.com)
Notes:
1. All dimensions are in inches [millimeters].

**TABLE A**

<table>
<thead>
<tr>
<th>THREAD SIZE</th>
<th>TORQUE</th>
<th>TORQUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>M6-32 [M6] HARDWARE</td>
<td>7.4 IN-LBS</td>
<td>0.8-1.2 NM</td>
</tr>
<tr>
<td>#10-32 THD TERMINAL SCREW</td>
<td>15-50 IN-LBS</td>
<td>1.7-2.3 NM</td>
</tr>
</tbody>
</table>

**TERMINALS ARE SUPPLIED WITH #4-36 SCREW AND PRESSURE PLATE PER TERMINAL.**
**Dimensional Specifications: in. [mm]**

1. All dimensions are in inches [millimeters].
2. Tolerance ±0.020 [0.51] unless otherwise specified.
3. Dimensions apply to all variations shown. Notice that circuit breaker line and load terminal orientation on indicate OFF is opposite of indicate ON.
4. For pole orientation with horizontal legend, rotate front view clockwise 90°.

---

**Notes:**

1. All dimensions are in inches [millimeters].
2. Tolerance ±0.020 [0.51] unless otherwise specified.
3. Dimensions apply to all variations shown. Notice that circuit breaker line and load terminal orientation on indicate OFF is opposite of indicate ON.
4. For pole orientation with horizontal legend, rotate front view clockwise 90°.
Notes:
1. All dimensions are in inches [millimeters].
2. Tolerance ±0.010 [25] unless otherwise specified.
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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.

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