D-Series
DIN Rail Hydraulic-Magnetic Circuit Breaker

Typical Applications
- Industrial Controls
- Renewable Energy

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.

<table>
<thead>
<tr>
<th>Poles</th>
<th>Amps</th>
<th>VDC Max</th>
<th>VAC Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-4</td>
<td>0.02-50</td>
<td>80</td>
<td>480Y</td>
</tr>
</tbody>
</table>
### Tech Specs

#### Electrical

<table>
<thead>
<tr>
<th>Maximum Voltage</th>
<th>AC, 480V VAC (See Table A), 50/60 Hz, 80VDC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Current Coils</td>
<td>0.10, 0.250, 0.500, 0.750, 1.0, 2.50, 5.00, 7.50, 10, 15.0, 20.0, 25.0, 30.0, 35.0, 40.0 &amp; 50.0. Other ratings available - consult factory.</td>
</tr>
<tr>
<td>Standard Voltage Coils</td>
<td>DC – 6V, 12V; AC – 120V, other ratings available, see ordering scheme.</td>
</tr>
<tr>
<td>Insulation Resistance</td>
<td>Minimum of 100 Megohms at 500 VDC.</td>
</tr>
<tr>
<td>Dielectric Strength</td>
<td>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.</td>
</tr>
</tbody>
</table>

#### Mechanical

<table>
<thead>
<tr>
<th>Endurance</th>
<th>10,000 ON-OFF operations @ 6 per minute, with rated current &amp; voltage.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trip Free</td>
<td>All D-Series circuit breakers will trip on overload, even when actuator is forcibly held in the ON position.</td>
</tr>
<tr>
<td>Trip Indication</td>
<td>The operating actuator moves positively to the OFF position when an overload causes the breaker to trip.</td>
</tr>
</tbody>
</table>

#### Physical

<table>
<thead>
<tr>
<th>Number of Poles</th>
<th>Rocker Type: 1-3; Handle Type: 1-4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal Circuit Config.</td>
<td>Switch Only and Series Trip with current or voltage trip coils.</td>
</tr>
<tr>
<td>Weight</td>
<td>Approximately 128 grams/pole (Approximately 4.57 ounces/pole)</td>
</tr>
<tr>
<td>Standard Colors</td>
<td>Housing – Black; Actuator – See Ordering Scheme.</td>
</tr>
<tr>
<td>Mounting</td>
<td>Mounts on a standard 35mm Symmetrical DIN Rail (35 x 7.5 or 35 x 15mm per DIN EN5002).</td>
</tr>
</tbody>
</table>

#### Environmental

<table>
<thead>
<tr>
<th>Shock</th>
<th>Withstands 100 Gs, 6ms, sawtooth while carrying rated current per Method 213, Test Condition &quot;I&quot;. Instantaneous and ultra-short curves tested @ 90% of rated current.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vibration</td>
<td>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.</td>
</tr>
<tr>
<td>Moisture Resistance</td>
<td>Method 106D, i.e., ten 24-hour cycles @ +25°C to +65°C, 80–98% RH.</td>
</tr>
<tr>
<td>Salt Spray</td>
<td>Method 101, Condition A (90–95% RH @ 5% NaCl Solution, 96 hrs).</td>
</tr>
<tr>
<td>Thermal Shock</td>
<td>Method 107D, Condition A (Five cycles @ +55°C to +25°C to +85°C to +25°C).</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-40°C to +85°C</td>
</tr>
</tbody>
</table>

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*Manufacturer reserves the right to change product specification without prior notice.*
### Tech Specs

#### Tables

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

<table>
<thead>
<tr>
<th>Circuit Configuration</th>
<th>Voltage</th>
<th>Max Rating</th>
<th>Frequency</th>
<th>Phase</th>
<th>Current Rating with Full Load Amps</th>
<th>Short Circuit Capacity (Amps)</th>
<th>Application Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Series</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>UL/CASA</td>
<td>VDE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>65 DC</td>
<td>80</td>
<td>50 / 60</td>
<td>1 &amp; 3</td>
<td>0.02 - 50</td>
<td>5,000</td>
<td>TC1, 2, OL1, UI</td>
</tr>
<tr>
<td></td>
<td>125 / 250</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
<td>5,000</td>
<td>TC1, 2, OL1, UI</td>
</tr>
<tr>
<td></td>
<td>277</td>
<td></td>
<td></td>
<td>1 &amp; 3</td>
<td>3,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>480 Y</td>
<td>3</td>
<td></td>
<td>1 &amp; 3</td>
<td>1500</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Switch Only</strong></td>
<td>65 DC</td>
<td>250</td>
<td>50 / 60</td>
<td>1</td>
<td>0.02 - 50</td>
<td>1500</td>
<td>TC1, 2, OL1, C1</td>
</tr>
<tr>
<td></td>
<td>277</td>
<td></td>
<td></td>
<td>3</td>
<td>50 / 60</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>480 Y</td>
<td>3</td>
<td></td>
<td>1 &amp; 3</td>
<td>0.02 - 30</td>
<td></td>
<td></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 150 A for 250V rating and 125 A 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.

### Agency Approvals

**UL 1077**
Component Recognition Program as Protectors, Supplementary (Guide QVNU2, File E75596)

**UL 508**
Switches, Industrial Control (Guide NRNT2, File E148683)

**CSA Accepted**
Component Supplementary Protector under Class 3215 30, File 047848 0 000, CSA Standard C22.2 No. 235

**VDE Certified**
EN60934, VDE 0642 under File No. 10537
### Ordering Scheme

**Sample Part Number:**

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>3</th>
<th>B0</th>
<th>10</th>
<th>450</th>
<th>1</th>
<th>2</th>
<th>1</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Selection</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
</tbody>
</table>

### 1. SERIES

**D** - Series

### 2. ACTUATOR

**Handle**

- A: Handle, one per pole
- B: Handle, one per multipole unit

**Visi-Rocker**

- C: Indicate ON, vertical legend
- D: Indicate ON, horizontal legend
- E: Indicate ON, no legend (VDE approval not available with no legend)
- F: Indicate OFF, vertical legend
- G: Indicate OFF, horizontal legend
- H: Indicate OFF, no legend (VDE approval not available with no legend)

**Single Color Rocker**

- J: Vertical legend
- K: Horizontal legend
- L: No legend (VDE approval not available with no legend)

### 3. POLES

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

### 4. CIRCUIT

- A: Switch Only (No Coil)
- B: Series Trip (Current)
- C: Series Trip (Voltage)

### 5. FREQUENCY & DELAY

- **DC 50/60Hz, Switch Only**
- **DC Instantaneous**
- **DC Ultra Short**
- **DC Short**
- **DC Medium**
- **DC Long**
- **50/60Hz Instantaneous**
- **50/60Hz Ultra Short**
- **50/60Hz Short**
- **50/60Hz Medium**
- **50/60Hz Long**

### 6. CURRENT RATING (AMPERES)

<table>
<thead>
<tr>
<th>Code</th>
<th>Ampers</th>
</tr>
</thead>
<tbody>
<tr>
<td>020</td>
<td>275</td>
</tr>
<tr>
<td>045</td>
<td>300</td>
</tr>
<tr>
<td>065</td>
<td>325</td>
</tr>
<tr>
<td>085</td>
<td>355</td>
</tr>
<tr>
<td>105</td>
<td>385</td>
</tr>
<tr>
<td>125</td>
<td>415</td>
</tr>
<tr>
<td>145</td>
<td>445</td>
</tr>
<tr>
<td>165</td>
<td>475</td>
</tr>
<tr>
<td>185</td>
<td>505</td>
</tr>
<tr>
<td>205</td>
<td>535</td>
</tr>
<tr>
<td>225</td>
<td>565</td>
</tr>
<tr>
<td>245</td>
<td>595</td>
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<tr>
<td>265</td>
<td>625</td>
</tr>
<tr>
<td>285</td>
<td>655</td>
</tr>
<tr>
<td>305</td>
<td>685</td>
</tr>
<tr>
<td>325</td>
<td>715</td>
</tr>
</tbody>
</table>

### 7. TERMINAL

1. #10 Screw & Pressure Plate for Direct Wire Connection
2. #10 Screw without Pressure Plate

### 8. ACTUATOR COLOR & LEGEND

**Actuator or Visi-Color**

- A: Black
- B: Orange
- C: Black
- D: Yellow
- E: White
- F: Blue
- G: Red
- H: Green
- J: Gray
- K: Orange

**Marking Color**

- I-O: Black
- ON-OFF: Orange
- Dual/None: Blue

**Marking Code**

- Single Color: Black
- Visi-Rocker: Orange

### 9. MOUNTING / VOLTAGE

**Mounting Style**

1. Threaded Insert
2. ISO M3 x 5mm

**Voltage**

1. 6-32 x 0.195 inches < 300
2. 6-32 x 0.195 inches ≥ 300
3. ISO M3 x 5mm < 200
4. ISO M3 x 5mm ≥ 200

### 10. AGENCY APPROVAL

- C: UL Recognized & CSA Accepted
- D: VDE Certified, UL Recognized & CSA Accepted

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**Notes:**

1. Handle breakers available up to four poles. Rocker breakers available up to three poles.
2. Actuator Code:
   - A: Multi-pole units factory assembled with common handle tie.
   - B: Handle location as viewed from front of breaker.
3. Multipole rocker breakers have one rocker per breaker, as viewed from the front of the panel. Two pole - left pole; three pole - center pole
4. ≤ 30A: select Current Rating code 630; 31-50A: select Current Rating code 650.
5. Voltage coil only available with delay codes 10 & 20.
6. Available to 50A max with circuit code B0 only.
7. Color shown is visi and legend with remainder of rocker black.
8. ≥ 300V: three pole breaker 30 or 2 pole breaker 18, UL/CSA limited to 30 FLA max.
9. VDE Approval requires Dual (I-O, ON-OFF) or I-O markings.
Circuit & Terminal Diagram

HANDLE ACTUATOR

ROCKER ACTUATOR

SERIES TRIP

SWITCH ONLY

MULTI-POLE IDENTIFICATION SCHEME

HANDLE ACTUATOR SHOWN

TABLE A

TIGHTENING TORQUE SPECIFICATIONS

<table>
<thead>
<tr>
<th>THREAD SIZE</th>
<th>TORQUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>#6-32 [M3] HARDWARE</td>
<td>7-9 IN-LBS</td>
</tr>
<tr>
<td></td>
<td>[0.8-1.0 NM]</td>
</tr>
<tr>
<td>#6-32 THD TERMINAL SCREW</td>
<td>15-20 IN-LBS</td>
</tr>
<tr>
<td></td>
<td>[1.7-2.3 NM]</td>
</tr>
</tbody>
</table>

Notes:
1. Tolerance ±0.020 [0.51] unless otherwise specified.
**Dimensional Specifications**

inches [millimeters]

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

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INDICATE "OFF" & SINGLE COLOR (INDICATE "OFF" SHOWN)

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INDICATE "ON"
Dimensional Specifications

inches [millimeters]

Notes:
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