E-Series
CIRCUIT BREAKER

The E-Series hydraulic-magnetic circuit breaker is ideally suited for higher current and voltage applications. It is UL listed and CSA certified for branch circuit protection, which does not require a fuse back up. It is also UL recognized and CSA certified as a supplementary protector and as a manual motor controller.

Its physical features include front and back mounting, screw and stud terminals and heavy duty box wire connectors for solid wire or a pressure plate connector for standard wire. The E-series is available with handle actuators and can be configured as .1-125 amps, up to 600VAC or 125VDC, with choice of time delays, actuator colors and 1 to 6 poles configuration. Additionally, a Power Selector device is also available.

Product Highlights:
• UL listed and CSA certified
• Certified for circuit branch protection
• Recognized as a supplementary protector and as a manual motor controller
• Optional power selector device

Typical Applications:
• High Voltage / High Current Applications
• Renewable Energy
• Military
• Industrial Controls
• Generators

Resources:
Configure a Complete Part
Download CAD & Sales Drawing
**E-Series Circuit Breaker – General Specifications**

**Electrical**

- **Maximum Voltage**: 600VAC 50/60 Hz, 125VDC (See Table A)
- **Current Ratings**: Standard current coils: 0.100, 0.250, 0.500, 1.00, 2.50, 5.00, 7.50, 10.0, 15.0, 20.0, 25.0, 30.0, 50.0, 60.0, 70.0 & 100 Amp.
- **Auxiliary Switch Rating SPDT**: 10.1A 250VAC, 1.0A 65VDC; 0.5A 80VDC, 0.1A 125VAC (with gold contacts).
- **Insulation Resistance**: Minimum of 100 Megohms at 500 VDC.
- **Dielectric Strength**: UL, CSA: 2200 V 50/60 Hz for one minute between all electrically isolated terminals. E-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.
- **Resistance, Impedance**: Values from Line to Load Terminal - based on Series Trip Circuit Breaker.

<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 E-Series Circuit Breakers will trip on overload, even when Handle is forcibly held in the ON position.
- **Trip Indication**: The operating Handle moves positively to the OFF position when an overload causes the breaker to trip.

**Physical**

- **Number of Poles**: 1 - 6
- **Mounting**: A 3” minimum spacing must be provided between the circuit breaker arc venting area on back connected E-Series circuit breakers and grounded obstructions. E-Series circuit breakers must be mounted on a vertical surface.
- **Connectors, Box Type**: Front connected E-Series circuit breakers are supplied with box type pressure connectors that accept copper or aluminum conductors as follows: 1/0-14 Copper, 1/0-12 Aluminum.
- **Internal Circuit Configuration**: Series and Switch Only, (with or without auxiliary switch). Shunt with current coils.
- **Weight**: Approximately 252 grams/pole (Approximately 9 ounces/pole)
- **Standard Colors**: Housing-Black; Actuator - See Ordering Scheme.

**Environmental**

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

- **Shock**: Withstands 100 Gs, 6ms, sawtooth while carrying rated current per Method 213, Test Condition “I”.
- **Vibration**: Withstands 0.060° excursion from 10-55 Hz, and 10 Gs 55-500 Hz, at rated current per Method 204C, Test Condition A.
- **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 Listed (489) & CSA Certified (C22.2 No. 5) configurations & performance capabilities as a Molded Case Circuit Breaker.

<table>
<thead>
<tr>
<th>CIRCUIT CONFIGURATION</th>
<th>VOLTAGE</th>
<th>CURRENT RATING</th>
<th>INTERRUPTING CAPACITY (AMPS)</th>
<th>MAX. RATING</th>
<th>FREQUENCY</th>
<th>PHASE</th>
<th>WITHOUT BACKUP FUSE</th>
<th>FULL LOAD AMPS</th>
<th>WITHheld INTERRUPTING CAPACITY (AMPS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SERIES</td>
<td>80 DC</td>
<td>0.10 - 100</td>
<td>5,000</td>
<td>125 DC</td>
<td>0.10 - 100</td>
<td>125</td>
<td>0.10 - 125</td>
<td>10,000</td>
<td>50,000</td>
</tr>
<tr>
<td></td>
<td>120 DC</td>
<td>0.10 - 120</td>
<td>10,000</td>
<td>120 / 240</td>
<td>0.10 - 30</td>
<td>120 / 240</td>
<td>0.10 - 125</td>
<td>5,000</td>
<td>10,000</td>
</tr>
<tr>
<td></td>
<td>240 DC</td>
<td>0.10 - 125</td>
<td>10,000</td>
<td>240 / 240</td>
<td>0.10 - 30</td>
<td>240 / 240</td>
<td>0.10 - 125</td>
<td>5,000</td>
<td>10,000</td>
</tr>
</tbody>
</table>

### Table B: Lists UL Recognized & CSA Accepted configurations & performance capabilities as a Component Supplementary Protector.

<table>
<thead>
<tr>
<th>CIRCUIT CONFIGURATION</th>
<th>VOLTAGE</th>
<th>CURRENT RATING</th>
<th>UL/CSA</th>
<th>SHORT CIRCUIT CAPACITY (AMPS)</th>
<th>MAX. RATING</th>
<th>FREQUENCY</th>
<th>PHASE</th>
<th>FULL LOAD AMPS</th>
<th>WITHheld UL/CSA</th>
<th>WITHOUT BACKUP FUSE</th>
<th>UL</th>
<th>CSA</th>
</tr>
</thead>
<tbody>
<tr>
<td>SERIES &amp; SHUNT</td>
<td>125 DC</td>
<td>0.02 - 100</td>
<td>TC1,2, OL1, U1</td>
<td>125 DC</td>
<td>0.02 - 100</td>
<td>125 DC</td>
<td>0.02 - 125</td>
<td>5,000</td>
<td>TC1,2, OL1, U1</td>
<td>TC1,2, OL1, U1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>150 DC</td>
<td>0.02 - 100</td>
<td>TC1,2, OL1, U1</td>
<td>150 DC / 300</td>
<td>0.02 - 100</td>
<td>150 DCSHUNT</td>
<td>150 DC / 300</td>
<td>0.02 - 100</td>
<td>TC1,2, OL1, U1</td>
<td>TC1,2, OL1, U1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>160 DC</td>
<td>0.02 - 100</td>
<td>TC1,2, OL1, U1</td>
<td>160 DC</td>
<td>0.02 - 100</td>
<td>160 DCSHUNT</td>
<td>160 DC / 300</td>
<td>0.02 - 100</td>
<td>TC1,2, OL1, U1</td>
<td>TC1,2, OL1, U1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>240 DC</td>
<td>0.02 - 100</td>
<td>TC1,2, OL1, U1</td>
<td>240 DC</td>
<td>0.02 - 100</td>
<td>240 DCSHUNT</td>
<td>240 DC / 300</td>
<td>0.02 - 100</td>
<td>TC1,2, OL1, U1</td>
<td>TC1,2, OL1, U1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>250 DC</td>
<td>0.02 - 100</td>
<td>TC1,2, OL1, U1</td>
<td>250 DC</td>
<td>0.02 - 100</td>
<td>250 DCSHUNT</td>
<td>250 DC / 300</td>
<td>0.02 - 100</td>
<td>TC1,2, OL1, U1</td>
<td>TC1,2, OL1, U1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>277 DC</td>
<td>0.02 - 100</td>
<td>TC1,2, OL1, U1</td>
<td>277 DC</td>
<td>0.02 - 100</td>
<td>277 DCSHUNT</td>
<td>277 DC / 300</td>
<td>0.02 - 100</td>
<td>TC1,2, OL1, U1</td>
<td>TC1,2, OL1, U1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>480 DC</td>
<td>0.02 - 100</td>
<td>TC1,2, OL1, U1</td>
<td>480 DC</td>
<td>0.02 - 100</td>
<td>480 DCSHUNT</td>
<td>480 DC / 300</td>
<td>0.02 - 100</td>
<td>TC1,2, OL1, U1</td>
<td>TC1,2, OL1, U1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>600 DC</td>
<td>0.02 - 100</td>
<td>TC1,2, OL1, U1</td>
<td>600 DC</td>
<td>0.02 - 100</td>
<td>600 DCSHUNT</td>
<td>600 DC / 300</td>
<td>0.02 - 100</td>
<td>TC1,2, OL1, U1</td>
<td>TC1,2, OL1, U1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes:
1. Per pole opposite polarity rating - Delta Configuration.
2. 4 Poles connected in series
3. Requires branch circuit backup with a UL Listed Type K5 or RK5 fuse rated 15A minimum and no more than 4 times full load amp rating and not to exceed 225A.
E-Series Circuit Breaker – General Specifications

Electrical Tables

Table C: 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>CURRENT RATING</th>
<th>SHORT CIRCUIT CAPACITY (AMPS)</th>
<th>APPLICATION CODES</th>
<th>CONSTRUCTION NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX. RATING</td>
<td>FREQUENCY</td>
<td>PHASE</td>
<td>FULL LOAD AMPS</td>
<td>UL/CSA</td>
<td>VDE (Iom)</td>
</tr>
<tr>
<td>SERIES &amp; SHUNT</td>
<td>125 DC</td>
<td>---</td>
<td>0.1 - 100</td>
<td>---</td>
<td>5,000</td>
</tr>
<tr>
<td></td>
<td>240 50 / 60</td>
<td>1 &amp; 3</td>
<td>0.1 - 100</td>
<td>---</td>
<td>5,000</td>
</tr>
<tr>
<td></td>
<td>415 50 / 60</td>
<td>1 &amp; 3</td>
<td>0.1 - 100</td>
<td>10,000</td>
<td>---</td>
</tr>
<tr>
<td>SWITCH ONLY</td>
<td>125 DC</td>
<td>---</td>
<td>0.1 - 125</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>240 50 / 60</td>
<td>1 &amp; 3</td>
<td>0.1 - 100</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>415 50 / 60</td>
<td>1 &amp; 3</td>
<td>0.1 - 100</td>
<td>---</td>
<td>---</td>
</tr>
</tbody>
</table>

Table D: Lists UL Recognized, CSA Accepted configurations and performance capabilities as Protectors, Supplementary for Marine Electrical and Fuel Systems (Guide PEQZ2, File E75596). Ignition Protected per UL 1500. UL Classified Small Craft Electrical Devices, Marine in accordance with ISO 8846 (Guide UZMK, File MQ1515) as Marine 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>MAX. RATING</td>
<td>FREQUENCY</td>
<td>PHASE</td>
<td>FULL LOAD AMPS</td>
<td>WITHOUT BACKUP FUSE</td>
</tr>
<tr>
<td>SERIES</td>
<td>65 DC</td>
<td>---</td>
<td>0.02 - 100</td>
<td>5,000</td>
</tr>
<tr>
<td></td>
<td>125 50 / 60</td>
<td>1</td>
<td>0.02 - 100</td>
<td>1,500</td>
</tr>
<tr>
<td></td>
<td>250 50 / 60</td>
<td>1</td>
<td>0.02 - 100</td>
<td>1,500</td>
</tr>
</tbody>
</table>

Notes:
1 Requires branch circuit backup with a UL LISTED Type K5 or RK5 fuse rated 15A minimum and no more than 4 times full load amp rating and not to exceed 225 amps.

Agency Certifications

UL Recognized
UL Standard 1077
- Component Recognition Program as Protectors, Supplementary (Guide QVN UN, File E75596)

UL Standard 1500
- Protectors, Supplementary for Marine Electrical & Fuel Systems (Guide PEQZ2, File E75596)

UL Listed
UL Standard 489
- Circuit Breakers, Molded Case (Guide DIVQ, File E129899)

CSA Accepted
- Component Supplementary Protector (Class 3215 30, File 047848 0 000)
- CSA Standard C22.2 No. 235

CSA Certified
- Circuit Breaker Molded Case (Class 1432 01, File 093910), CSA Standard C22.2 No. 5.1 - M

TUV Certified
- EN60934 under License No. R72031056

VDE Certified
- EN60934, VDE 0642 under File No. 10537
**E-Series Circuit Breaker - UL 1077 – Ordering Scheme**

### 1 Series

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>E</td>
<td>Actuator Color &amp; Legend</td>
</tr>
<tr>
<td>A</td>
<td>Handle, one per pole</td>
</tr>
</tbody>
</table>

### 2 Actuator

A Handle, one per pole

### 3 Polarity

<table>
<thead>
<tr>
<th>One Pole</th>
<th>Three Poles</th>
<th>Five Poles</th>
<th>Six Poles</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

### 4 Circuit

A Switch Only (no coil)

### 5 Auxiliary Switch

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>E</td>
<td>S.P.S.T. 0.110 Q.C. Terminals</td>
</tr>
<tr>
<td>F</td>
<td>S.P.S.T. 0.187 Q.C. Terminals</td>
</tr>
</tbody>
</table>

### 6 Frequency & Delay

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Front Mounting Inserts (Optional Use)</td>
</tr>
<tr>
<td>4</td>
<td>Front Mounting Inserts (Optional Use)</td>
</tr>
</tbody>
</table>

### 7 Current Rating (Ampere) 7

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>020</td>
<td>235 0.350 430 3.000 614 14000</td>
</tr>
<tr>
<td>025</td>
<td>240 0.400 400 4.000 615 15000</td>
</tr>
<tr>
<td>030</td>
<td>245 0.450 440 4.000 616 16000</td>
</tr>
<tr>
<td>035</td>
<td>250 0.500 450 4.500 617 17000</td>
</tr>
<tr>
<td>040</td>
<td>255 0.550 450 5.000 618 18000</td>
</tr>
<tr>
<td>045</td>
<td>260 0.600 450 5.500 620 20000</td>
</tr>
<tr>
<td>050</td>
<td>265 0.650 460 6.000 622 22000</td>
</tr>
<tr>
<td>055</td>
<td>270 0.700 460 6.500 624 24000</td>
</tr>
<tr>
<td>060</td>
<td>275 0.750 470 7.000 625 25000</td>
</tr>
<tr>
<td>065</td>
<td>280 0.800 475 7.500 630 27000</td>
</tr>
<tr>
<td>070</td>
<td>285 0.850 480 8.000 635 35000</td>
</tr>
<tr>
<td>075</td>
<td>290 0.900 485 8.500 640 40000</td>
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<tr>
<td>080</td>
<td>295 0.950 490 9.000 650 50000</td>
</tr>
<tr>
<td>085</td>
<td>300 1.000 495 9.500 660 60000</td>
</tr>
<tr>
<td>090</td>
<td>305 1.050 500 10.000 670 70000</td>
</tr>
<tr>
<td>095</td>
<td>310 1.100 500 10.500 680 80000</td>
</tr>
<tr>
<td>100</td>
<td>315 1.150 510 11.000 690 90000</td>
</tr>
<tr>
<td>115</td>
<td>320 1.200 520 12.000 710 100000</td>
</tr>
<tr>
<td>120</td>
<td>325 1.250 520 12.500 720 120000</td>
</tr>
<tr>
<td>125</td>
<td>330 1.300 527 13.000 725 125000</td>
</tr>
</tbody>
</table>

### 8 Terminal

Back Connected (Front Mounted Only) Max. Rating

1. 1-32 Stud (All Terminals: 50 A)
2. 1/4-20 Stud (All Terminals: 50 A)
3. 1/4-20 Screw (Load & Line: 50 A)
4. 1/4-20 Screw (Load & Line: 50 A)
5. 1/4-20 Screw (Load & Line: 50 A)
6. 1/4-20 Screw (Load & Line: 50 A)
7. 1/4-20 Screw (Load & Line: 50 A)
8. 1/4-20 Screw (Load & Line: 50 A)
9. 1/4-20 Screw (Load & Line: 50 A)

### 9 Actuator Color & Legend

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Actuator Color I-O ON-OFF Dual Legend Color</td>
</tr>
<tr>
<td>B</td>
<td>White</td>
</tr>
<tr>
<td>C</td>
<td>Black</td>
</tr>
<tr>
<td>D</td>
<td>Red</td>
</tr>
<tr>
<td>E</td>
<td>Green</td>
</tr>
<tr>
<td>F</td>
<td>Blue</td>
</tr>
<tr>
<td>G</td>
<td>Yellow</td>
</tr>
<tr>
<td>H</td>
<td>Gray</td>
</tr>
<tr>
<td>I</td>
<td>Orange</td>
</tr>
</tbody>
</table>

### 10 Mounting / Barriers

Back Connected (Front Mounted Only)

Mounting Inserts

A 6-32
B ISO M3

### 11 Maximum Application Rating

A 65 VDC, 120 A
B 125 VDC, 120 A
C 200 VAC, 100 A
D 240 VAC, 100 A
E 277/480 VAC, 100 A
F 277 VAC, 100 A

### 12 Agency Approval

B UL 1077 / UL508 Recognized & CSA Accepted
D UL 1077 Recognized, CSA Accepted, & VDE Certified

Notes:

1. VDE approval on 1-5 poles only. Standard multi-pole units identical poles except when specifying auxiliary switch - (see Note 4). For mixed ratings, consult factory.
2. Switch Only & Series Trip construction available with either front or back connected terminals. Shunt construction available with both back connected terminals. (Terminal Codes 1 & 2) only.
3. Switch Only construction: 30 amps or less select Current Rating Code 630; 31-70 amps, select Current Rating Code 670; 71-110 amps, select Current Rating Code 810; 101-125 amps Select Current Rating Code 912. Switch Only is VDE approved only if tied to a protected pole.

### OR Voltage Coil (MIN. TRIP RATING, VOLS)

A06 6 DC, 5 DC A65 65 DC, 55 DC J48 48 AC, 40 AC
A12 12 DC, 10 DC B25 125 DC, 105 DC J65 65 AC, 55 AC
A18 18 DC, 15 DC J06 6 AC, 5 AC K20 120 DC, 65 AC
A24 24 DC, 20 DC J12 12 AC, 10 AC L40 240 AC, 130 AC
A32 32 DC, 25 DC J18 18 AC, 15 AC
A48 48 DC, 40 DC J24 24 AC, 20 AC

### Agency Approval

Email: sales@carlingtech.com Application Support: team2@carlingtech.com Phone: (860) 793–9281 Fax: (860) 793–9231 www.carlingtech.com

Frequency & Delay Codes 92,94 & 96 are not VDE Certified.
<table>
<thead>
<tr>
<th>E</th>
<th>A</th>
<th>2</th>
<th>B</th>
<th>0</th>
<th>24</th>
<th>450</th>
<th>1</th>
<th>2</th>
<th>A</th>
<th>C</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 SERIES</td>
<td>2 ACTUATOR</td>
<td>3 POLES</td>
<td>4 CIRCUIT</td>
<td>5 AUXILIARY SWITCH</td>
<td>6 FREQUENCY &amp; DELAY</td>
<td>7 CURRENT RATING (AMPERES)</td>
<td>8 TERMINAL</td>
<td>9 ACTUATOR COLOR</td>
<td>10 MOUNTING/ BARRIERS</td>
<td>11 MAXIMUM APPLICATION RATING</td>
<td>12 AGENCY APPROVAL</td>
</tr>
<tr>
<td>E</td>
<td>A Handle, one per pole</td>
<td>One</td>
<td>Two</td>
<td>Three</td>
<td>Four</td>
<td>Six</td>
<td>One</td>
<td>Black</td>
<td>Short, High-(i)nrush</td>
<td>UL 489 Listed &amp; CSA Certified</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>1/4-20 Stud (All Terminals)</td>
<td>Four</td>
<td>Six</td>
<td>100 A</td>
<td>50 A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 8 TERMINAL

**Back Connected (Front Mounted Only)**

- **Max. Rating**
  - 1: 10-32 Stud (All Terminals) 50 A
  - 2: 1/4-20 Stud (All Terminals) 125 A

### 9 ACTUATOR COLOR & LEGEND

- **Actuator Color**
  - ON-OFF: Dual
  - Legend Color: Dual

### 10 MOUNTING / BARRIERS

- **Back Connected (Front Mounted Only)**
  - Mounting Inserts
    - A: 6-32
    - B: ISO M3
    - C: 120/240 VAC, 100 A
    - D: 240 VAC, 100 A

### 11 MAXIMUM APPLICATION RATING

- **Application**
  - 1: 120 VAC
  - B: 125 VDC
  - C: 120/240 VAC, 100 A
  - D: 240 VAC, 100 A

### 12 AGENCY APPROVAL

- **VDE** Certified
  - UL 489 Listed & CSA Certified
  - UL 489 Listed, CSA Certified, & VDE Certified

---

**Notes:**

1. Standard multi-pole units identical poles except when specifying auxiliary switch - (see Note 4). For mixed ratings, consult factory: VDE Certification on 1-5 poles only.
2. Series Trip construction available with either front or back connected terminals.
3. Series Trip construction with a voltage coil (drum) is not available as a single pole unit and must be associated to a protected pole.
4. On multi-pole units, only one auxiliary switch is normally supplied mounted in the extreme right pole per Figure A. Back mounted units require special mounting provisions when auxiliary switch is specified. VDE Certification on auxiliary switch codes 2, 3, 4 only.
5. Voltage Trip Coils are not rated for continuous duty. Available only with Frequency & Delay Codes 10 & 20.
6. Frequency & Delay Codes 92, 94 & 96 are not VDE Certified.
7. Current Ratings under 0.100 amps are not VDE Certified.
8. An Anti-Flash Over Barrier is supplied between poles on multi-pole units with 10-32 Stud (Terminal Code 1) or 1/4-20 Stud (Terminal Code 2) terminals per UL requirement.
9. Box Wire Connector will accept #14 through 0 AWG, copper wire or #12 through 0 AWG, aluminum wire.
10. Box Wire Connector with Pressure Plate for stranded wire, consult factory for details.
11. Back mounted breakers can also be front mounted by utilizing the proper front panel mounting kit.
12. VDE Certification requires dual (I-O, ON-OFF) markings on all handles.
Notes:
1. All dimensions are in inches [millimeters].
4. 51-120 amps: 1/4-20 & M6 Studs .750±.062/19.05±1.574 long.
**Dimensional Specifications: in. [mm]**

**Notes:**

1. 1/4 -20 stud terminal in Series Trip circuit configuration shown.
2. A 3” min spacing must be provided between the circuit breaker arc venting area of back connected E-Series circuit breaker and grounded obstructions.
3. All dimensions are in inches [millimeters].
5. Circuit breakers must be mounted on vertical surface.

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**MOUNTING INSERTS:**

- #6-32 [M] THREAD x .220 [.56]
- MIN. DEEP (2 PCS/POLE)
- 1.026 [26.06]
- 2.750 [69.85]
- 2.156 [54.76]
- 4.750 [120.65]
- 1.375 [34.95]
- TYPICAL OPTIONAL: "ON-OFF, W/O" LEGEND

**CLEARANCE AREA**

SEE NOTE 2

**TYPICAL ANTI-FLASHOVER BARRIER**

- 3.00 [76.2]
- .002 [0.05]

**5,125 [130.16] TYP**

**5,560 [141.17] TYP**

**SEE NOTE 1**

**PANEL CUTOUT DETAIL**

- 6 POLES
- 5 POLES
- 4 POLES
- 3 POLES
- 2 POLES
- 1 POLES
- 1,026 [26.06] TYP
- 2,750 [69.85]
- 6,276 [159.40] MAX.
- 5,230 [132.85] MAX.
- 4,185 [106.3] MAX.
- 3,138 [79.70] MAX.
- 2,092 [53.15] MAX.
- 1,026 [26.06] TYP

**MULTI-POLE UNITS ARE ASSEMBLED AT FACTORY WITH COMMON HANDLE TIE**

- 154.0 [3,914] (2 PCS) TYP PER POLE

---

Email: sales@carlingtech.com  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].
3. Box wire connector terminal in Series Trip circuit configuration shown.
4. Circuit breakers must be mounted on vertical surface.
### E-SERIES TIME DELAY VALUES

<table>
<thead>
<tr>
<th>TRIP TIME (SECONDS)</th>
<th>10%</th>
<th>125%</th>
<th>135%</th>
<th>150%</th>
<th>200%</th>
<th>400%</th>
<th>600%</th>
<th>800%</th>
<th>1000%</th>
<th>1200%</th>
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<tbody>
<tr>
<td>10</td>
<td>No Trip</td>
<td>0.01</td>
<td>0.038</td>
<td>0.052</td>
<td>0.071</td>
<td>0.080</td>
<td>0.089</td>
<td>0.098</td>
<td>0.107</td>
<td>0.116</td>
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<td>12, 72</td>
<td>No Trip</td>
<td>0.50</td>
<td>0.75</td>
<td>1.00</td>
<td>1.25</td>
<td>1.50</td>
<td>1.75</td>
<td>2.00</td>
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<td>14, 74</td>
<td>No Trip</td>
<td>1.50</td>
<td>2.00</td>
<td>2.50</td>
<td>3.00</td>
<td>3.50</td>
<td>4.00</td>
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<td>5.00</td>
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<td>16, 76</td>
<td>No Trip</td>
<td>3.00</td>
<td>4.00</td>
<td>5.00</td>
<td>6.00</td>
<td>7.00</td>
<td>8.00</td>
<td>9.00</td>
<td>10.00</td>
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<tr>
<td>20</td>
<td>No Trip</td>
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<td>5.00</td>
<td>6.00</td>
<td>7.00</td>
<td>8.00</td>
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<td>8.00</td>
<td>9.00</td>
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<td>13.00</td>
<td>14.00</td>
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<tr>
<td>24, 64</td>
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<td>8.00</td>
<td>9.00</td>
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<tr>
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<td>10.00</td>
<td>12.00</td>
<td>14.00</td>
<td>16.00</td>
<td>18.00</td>
<td>20.00</td>
<td>22.00</td>
<td>24.00</td>
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<tr>
<td>30</td>
<td>No Trip</td>
<td>10.00</td>
<td>12.00</td>
<td>14.00</td>
<td>16.00</td>
<td>18.00</td>
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<td>34.00</td>
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<td>28.00</td>
<td>32.00</td>
<td>36.00</td>
<td>40.00</td>
<td>44.00</td>
<td>48.00</td>
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</tbody>
</table>

**NOTES**

Delay Curves 10, 20, 30: Breakers to hold 100% and must trip at 150% of rated current and greater within the time limit shown in these curves.

Delay Curves 12, 14, 16, 24, 26, 32, 34, 36, 72, 74, 76: Breakers to hold 100% and must trip at 125% of rated current and greater within the time limit shown in these curves.

Delay Curves 30, 32, 34, 36, 92, 94, 96: Breakers to hold 100% and must trip at 135% of rated current and greater within the time limit shown in these curves.

All curves: Data shown represents breaker response at ambient temperature of 77°F (25°C) with no preloading: Breakers are mounted in standard wall-mount position.

The minimum inrush pulse tolerance handling capacity on the above standard delays is 16 times rated current &20 times rated current for high inrush delays based on a 60Hz 1/2 cycle, 8.33 ms pulse.

---

**Instantaneous**

**AC**

![Instantaneous AC](image1)

**DC**

![Instantaneous DC](image2)

---

**Short**

**AC**

![Short AC](image3)

**DC**

![Short DC](image4)

---

**Medium**

**AC**

![Medium AC](image5)

**DC**

![Medium DC](image6)

---

**Long**

**AC**

![Long AC](image7)

**DC**

![Long DC](image8)
Time Delay Values – E-Series Circuit Breaker

Instantaneous

Short

Medium

Long

AC/DC
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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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