



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.

0.02 - 50 amps, up to 480 VAC or 65 VDC, 1 - 4 poles (Handle), 1 - 3 poles (Rocker), with a choice of time delays.

## Agency Certifications

### UL Recognized

UL Standard 1077



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

### CSA Accepted



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

UL Standard 508



Switches, Industrial Control (Guide NRNT2, File E148683)

### VDE Certified



EN60934, VDE 0642 under File No. 10537

## Electrical

**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 |             |           |         |                                  |                               |                  |                                     |                                        |                   |                |
|------------------------------------------------------|-------------|-----------|---------|----------------------------------|-------------------------------|------------------|-------------------------------------|----------------------------------------|-------------------|----------------|
| CIRCUIT CONFIGURATION                                | VOLTAGE     |           |         | CURRENT RATING<br>FULL LOAD AMPS | SHORT CIRCUIT CAPACITY (AMPS) |                  |                                     |                                        | APPLICATION CODES |                |
|                                                      | MAX. RATING | FREQUENCY | PHASE 1 |                                  | UL/CSA                        |                  | VDE                                 |                                        | UL                | CSA            |
|                                                      |             |           |         |                                  | WITH BACKUP FUSE              | WITH BACKUP FUSE | (I <sub>nc</sub> ) WITH BACKUP FUSE | (I <sub>cn</sub> ) WITHOUT BACKUP FUSE |                   |                |
| SERIES                                               | 65          | DC        | —       | 0.02 - 50                        | —                             | 5,000            | 5,000                               | 1,500                                  | TC1,2, OL1, U1    | TC1,2, OL1, U1 |
|                                                      | 80          | DC        | —       | 0.02 - 50                        | —                             | 5,000            | 5,000                               | 1,500                                  | TC1,2, OL1, U1    | TC1,2, OL1, U1 |
|                                                      | 125 / 250   | 50 / 60   | 1       | 0.02 - 50                        | —                             | 3,000            | —                                   | —                                      | TC1,2, OL1, U1    | TC1,2, OL1, U1 |
|                                                      | 250         | 50 / 60   | 1 & 3   | 0.02 - 50                        | 5,000 2                       | —                | 5,000                               | 1,500                                  | TC1,2, OL1, C1    | TC1,2, OL1, C1 |
|                                                      | 277         | 50 / 60   | 1       | 0.02 - 50                        | 5,000 2                       | —                | —                                   | —                                      | TC1,2, OL1, C1    | TC1,2, OL1, C1 |
|                                                      | 480 Y 3     | 50 / 60   | 1 & 3   | 0.02 - 50                        | 5,000 2                       | —                | —                                   | —                                      | TC1,2, OL1, C1    | TC1,2, OL1, C1 |
| SWITCH ONLY                                          | 65          | DC        | —       | 0.02 - 50                        |                               |                  |                                     |                                        |                   |                |
|                                                      | 250         | 50 / 60   | 3       | 0.02 - 50                        |                               |                  |                                     |                                        |                   |                |
|                                                      | 277         | 50 / 60   | 1       | 0.02 - 50                        |                               |                  |                                     |                                        |                   |                |
|                                                      | 480 Y 3     | 50 / 60   | 1 & 3   | 0.02 - 30                        |                               |                  |                                     |                                        |                   |                |

Notes for Table A:

- DC and 1Phase 277 V ratings are 1 or 2 poles breaking. Three phase ratings are 3 poles breaking.
- 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.
- 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.

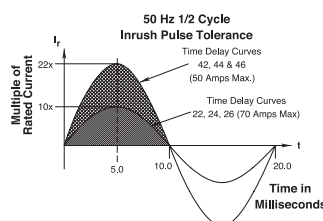
## Electrical

|                        |                                                                                                                                                                                                                                                                                                                 |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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.<br>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 from Line to Load Terminal - based on Series Trip Circuit Breaker                                                                                                                                                                                                                                        |



| CURRENT (AMPS) | TOLERANCE (%) |
|----------------|---------------|
| 0.10 - 5.0     | 15%           |
| 5.1 - 20.0     | 25%           |
| 20.1 - 50.0    | 35%           |

## Pulse Tolerance Curves



## 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                                                                                                                                                                         |

|             |               |            |          |              |          |                        |          |                     |          |               |                     |                       |          |                       |
|-------------|---------------|------------|----------|--------------|----------|------------------------|----------|---------------------|----------|---------------|---------------------|-----------------------|----------|-----------------------|
| <b>D</b>    | <b>A</b>      | <b>3</b>   | <b>–</b> | <b>B0</b>    | <b>–</b> | <b>10</b>              | <b>–</b> | <b>450</b>          | <b>–</b> | <b>1</b>      | <b>2</b>            | <b>1</b>              | <b>–</b> | <b>C</b>              |
| 1<br>Series | 2<br>Actuator | 3<br>Poles |          | 4<br>Circuit |          | 5<br>Frequency & Delay |          | 6<br>Current Rating |          | 7<br>Terminal | 8<br>Actuator Color | 9<br>Mounting/Voltage |          | 10<br>Agency Approval |

## 1 SERIES

**D**

## 2 ACTUATOR<sup>1</sup>

### Handle<sup>2</sup>

**A** Handle, one per pole

**B** Handle, one per multipole unit

### Visi-Rocker<sup>3</sup>

**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<sup>3</sup>

**J** Vertical legend

**K** Horizontal legend

**L** No legend (VDE approval not available with no legend)

| ROCKER STYLE DESCRIPTIONS |                   |                   |
|---------------------------|-------------------|-------------------|
|                           | INDICATE "ON"     | INDICATE "OFF"    |
| VERTICAL STYLE            | CODE "C"<br>      | CODE "F", "N"<br> |
|                           | CODE "D"<br>      | CODE "G", "O"<br> |
| HORIZONTAL STYLE          | CODE "J", "R"<br> | CODE "K", "U"<br> |
|                           | CODE "L"<br>      | CODE "M"<br>      |

## 3 POLES

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

## 4 CIRCUIT

**A0** Switch Only (No Coil) <sup>4</sup>

**B0** Series Trip (Current)

**C0** Series Trip (Voltage)

## 5 FREQUENCY & DELAY

|                       |                         |                       |                           |
|-----------------------|-------------------------|-----------------------|---------------------------|
| <b>03</b>             | DC 50/60Hz, Switch Only | <b>26</b>             | 50/60Hz Long              |
| <b>10<sup>5</sup></b> | DC Instantaneous        | <b>32</b>             | DC, 50/60Hz Short         |
| <b>11</b>             | DC Ultra Short          | <b>34</b>             | DC, 50/60Hz Medium        |
| <b>12</b>             | DC Short                | <b>36</b>             | DC, 50/60Hz Long          |
| <b>14</b>             | DC Medium               | <b>42<sup>6</sup></b> | 50/60Hz Short, Hi-Inrush  |
| <b>16</b>             | DC Long                 | <b>44<sup>6</sup></b> | 50/60Hz Medium, Hi-Inrush |
| <b>20<sup>5</sup></b> | 50/60Hz Instantaneous   | <b>46<sup>6</sup></b> | 50/60Hz Long, Hi-Inrush   |
| <b>21</b>             | 50/60Hz Ultra Short     | <b>52<sup>6</sup></b> | DC, Short, Hi-Inrush      |
| <b>22</b>             | 50/60Hz Short           | <b>54<sup>6</sup></b> | DC, Medium, Hi-Inrush     |
| <b>24</b>             | 50/60Hz Medium          | <b>56<sup>6</sup></b> | DC, Long, Hi-Inrush       |

## 6 CURRENT RATING (AMPERES)

|            |       |            |       |            |        |            |        |
|------------|-------|------------|-------|------------|--------|------------|--------|
| <b>020</b> | 0.020 | <b>280</b> | 0.800 | <b>460</b> | 6.000  | <b>619</b> | 19.000 |
| <b>025</b> | 0.025 | <b>285</b> | 0.850 | <b>465</b> | 6.500  | <b>620</b> | 20.000 |
| <b>030</b> | 0.030 | <b>410</b> | 1.000 | <b>470</b> | 7.000  | <b>621</b> | 21.000 |
| <b>050</b> | 0.050 | <b>512</b> | 1.250 | <b>572</b> | 7.250  | <b>622</b> | 22.000 |
| <b>075</b> | 0.075 | <b>413</b> | 1.300 | <b>475</b> | 7.500  | <b>623</b> | 23.000 |
| <b>080</b> | 0.080 | <b>414</b> | 1.400 | <b>480</b> | 8.000  | <b>624</b> | 24.000 |
| <b>085</b> | 0.085 | <b>415</b> | 1.500 | <b>485</b> | 8.500  | <b>625</b> | 25.000 |
| <b>210</b> | 0.100 | <b>517</b> | 1.750 | <b>490</b> | 9.000  | <b>626</b> | 26.000 |
| <b>215</b> | 0.150 | <b>420</b> | 2.000 | <b>495</b> | 9.500  | <b>627</b> | 27.000 |
| <b>220</b> | 0.200 | <b>522</b> | 2.250 | <b>610</b> | 10.000 | <b>628</b> | 28.000 |
| <b>225</b> | 0.250 | <b>425</b> | 2.500 | <b>710</b> | 10.500 | <b>629</b> | 29.000 |
| <b>230</b> | 0.300 | <b>527</b> | 2.750 | <b>611</b> | 11.000 | <b>630</b> | 30.000 |
| <b>235</b> | 0.350 | <b>430</b> | 3.000 | <b>711</b> | 11.500 | <b>632</b> | 32.000 |
| <b>240</b> | 0.400 | <b>532</b> | 3.250 | <b>612</b> | 12.000 | <b>635</b> | 35.000 |
| <b>245</b> | 0.450 | <b>435</b> | 3.500 | <b>712</b> | 12.500 | <b>640</b> | 40.000 |
| <b>250</b> | 0.500 | <b>436</b> | 3.600 | <b>613</b> | 13.000 | <b>645</b> | 45.000 |
| <b>255</b> | 0.550 | <b>440</b> | 4.000 | <b>614</b> | 14.000 | <b>650</b> | 50.000 |
| <b>260</b> | 0.600 | <b>445</b> | 4.500 | <b>615</b> | 15.000 |            |        |
| <b>265</b> | 0.650 | <b>547</b> | 4.750 | <b>616</b> | 16.000 |            |        |
| <b>270</b> | 0.700 | <b>450</b> | 5.000 | <b>617</b> | 17.000 |            |        |
| <b>275</b> | 0.750 | <b>455</b> | 5.500 | <b>618</b> | 18.000 |            |        |

## OR VOLTAGE COIL (VOLTS, MIN. TRIP RATING)<sup>5</sup>

|            |              |            |              |            |                |
|------------|--------------|------------|--------------|------------|----------------|
| <b>A06</b> | 6 DC, 5 DC   | <b>A48</b> | 48 DC, 40 DC | <b>J24</b> | 24 AC, 20 AC   |
| <b>A12</b> | 12 DC, 10 DC | <b>A65</b> | 65 DC, 55 DC | <b>J48</b> | 48 AC, 40 AC   |
| <b>A18</b> | 18 DC, 15 DC | <b>J06</b> | 6 AC, 5 AC   | <b>K20</b> | 120 AC, 65 AC  |
| <b>A24</b> | 24 DC, 20 DC | <b>J12</b> | 12 AC, 10 AC | <b>L40</b> | 240 AC, 130 AC |
| <b>A32</b> | 32 DC, 25 DC | <b>J18</b> | 18 AC, 15 AC |            |                |

## 7 TERMINAL

- #10 Screw & Pressure Plate for Direct Wire Connection
- #10 Screw without Pressure Plate

## 8 ACTUATOR COLOR & LEGEND

| Actuator or Visi-Color | Marking:   | Marking Color: | Single Color Rocker/Handle | Visi-Rocker (Actuator Black) <sup>7</sup> |
|------------------------|------------|----------------|----------------------------|-------------------------------------------|
| <b>Color:</b>          | <b>I-O</b> | <b>ON-OFF</b>  | <b>Dual</b>                |                                           |
| White                  | <b>A</b>   | <b>B</b>       | <b>1</b>                   | Black                                     |
| Black                  | <b>C</b>   | <b>D</b>       | <b>2</b>                   | White                                     |
| Red                    | <b>F</b>   | <b>G</b>       | <b>3</b>                   | White                                     |
| Green                  | <b>H</b>   | <b>J</b>       | <b>4</b>                   | White                                     |
| Blue                   | <b>K</b>   | <b>L</b>       | <b>5</b>                   | White                                     |
| Yellow                 | <b>M</b>   | <b>N</b>       | <b>6</b>                   | Black                                     |
| Gray                   | <b>P</b>   | <b>Q</b>       | <b>7</b>                   | Black                                     |
| Orange                 | <b>R</b>   | <b>S</b>       | <b>8</b>                   | Black                                     |

## 9 MOUNTING/VOLTAGE

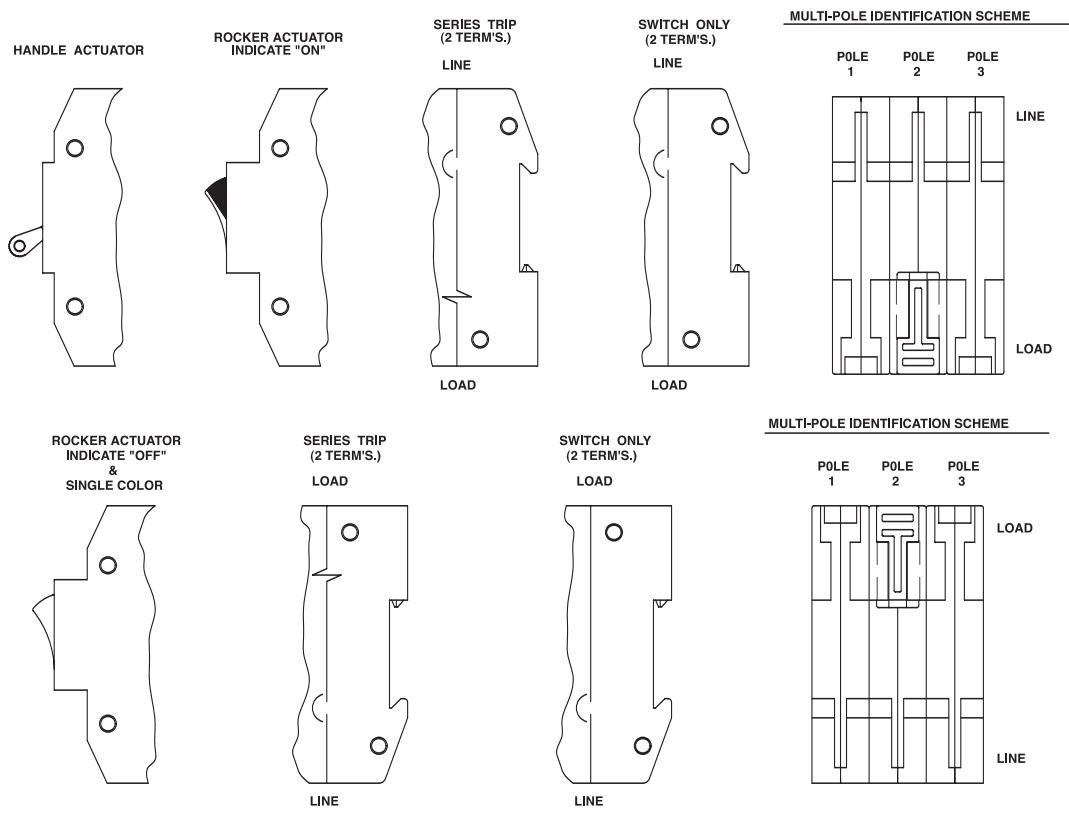
| MOUNTING STYLE                           | VOLTAGE |
|------------------------------------------|---------|
| <b>Threaded Insert</b>                   |         |
| <b>1</b> 6-32 x 0.195 inches             | < 300   |
| <b>C<sup>8</sup></b> 6-32 x 0.195 inches | ≥ 300   |
| <b>2</b> ISO M3 x 5mm                    | < 300   |
| <b>D<sup>8</sup></b> ISO M3 x 5mm        | ≥ 300   |

## 10 AGENCY APPROVAL

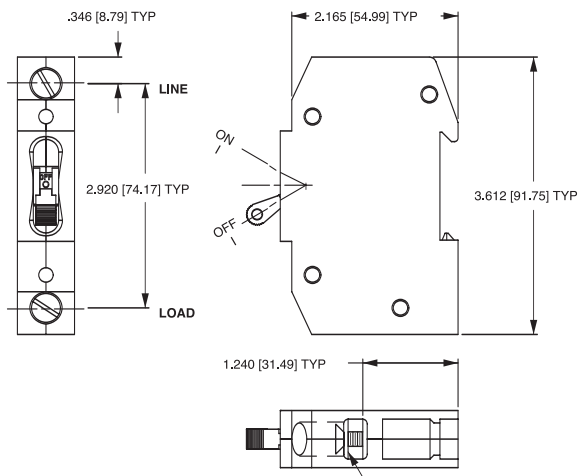
- C** UL Recognized & CSA Accepted
- D<sup>9</sup>** VDE Certified, UL Recognized & CSA Accepted

### Notes:

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



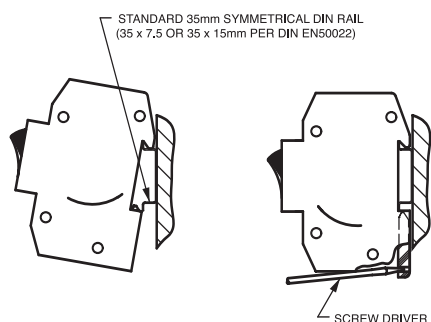
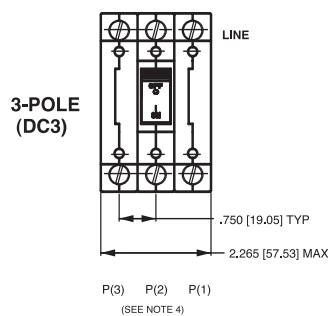
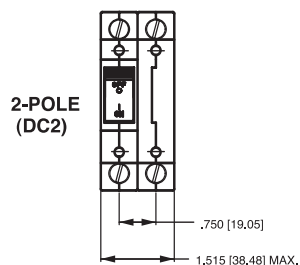
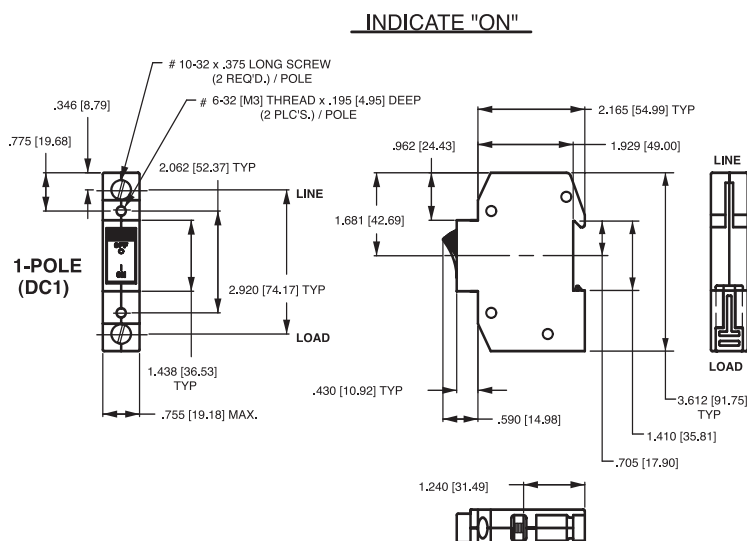
(HANDLE ACTUATOR SHOWN)



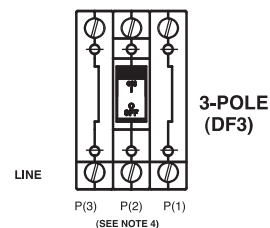
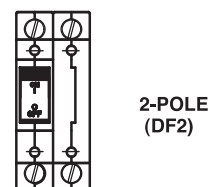
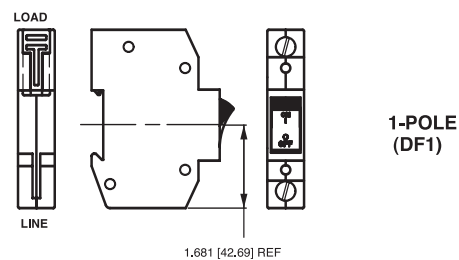
| TABLE A                          |                              |
|----------------------------------|------------------------------|
| TIGHTENING TORQUE SPECIFICATIONS |                              |
| THREAD SIZE                      | TORQUE                       |
| #6-32 [M3] HARDWARE              | 7-9 IN-LBS<br>[0.8-1.0 NM]   |
| #10-32 THD TERMINAL SCREW        | 15-20 IN-LBS<br>[1.7-2.3 NM] |

TERMINALS ARE SUPPLIED WITH #10-32 SCREW AND PRESSURE PLATE PER TERMINAL

Notes:  
1 All dimensions are in inches [millimeters].  
2 Tolerance  $\pm .020$  [.51] unless otherwise specified.

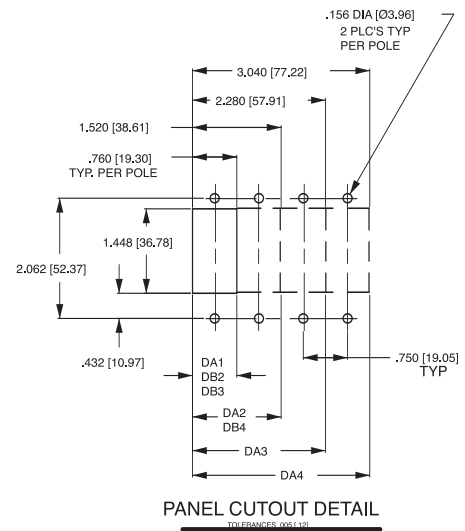
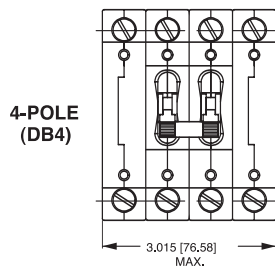


INDICATE "OFF" &  
SINGLE COLOR  
(INDICATE "OFF" SHOWN)



## Notes:

- 1 All dimensions are in inches [millimeters].
- 2 Tolerance  $\pm .020$  [.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  $\pm .020$  [.51] unless otherwise specified.