

# TB-Series

## HYDRAULIC-MAGNETIC CIRCUIT BREAKER

The TB-Series is a space saving, tandem pole circuit breaker specifically designed to fit a two pole breaker into a one rack unit, making it ideal for datacom and PDU applications.

The TB-Series is designed with a common trip linkage ensuring if one pole trips, the tandem pole simultaneously trips. It also features a trip-free mechanism, a safety feature making it impossible to manually hold the contacts closed during overcurrent or fault conditions. TB-Series options include available handle guard to prevent inadvertent actuation and an auxiliary switch.

2 poles; ratings from 0.10 to 20 amps, 120/240VAC; UL 489 Listed, TUV, IEC/EN 60947-2.



### Resources:

[Configure a Complete Part](#)

[\*\*Download CAD & Sales Drawing >\*\*](#)

[Watch Product Video](#)



### Product Highlights:

- Fits in 1RU
- 2 Pole Protection in a 1 Pole Package
- Common Trip Included
- Optional Auxiliary Switch

### Typical Applications:

- Datacom
- Power Distribution Units



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## Electrical Tables

**Table A:** Voltage and Current Rating

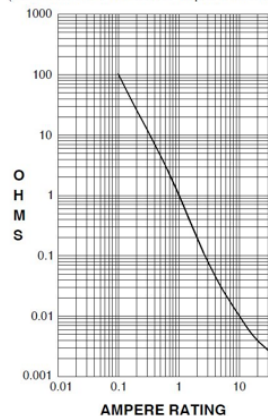
| TB SERIES TABLE A : UL489 LISTED, cUL and TUV CERTIFIED CIRCUIT BREAKERS |                  |           |       |                |                              |       |
|--------------------------------------------------------------------------|------------------|-----------|-------|----------------|------------------------------|-------|
| Circuit Configuration                                                    | Voltage          |           |       | Current Rating | Interrupting Capacity (Amps) |       |
|                                                                          | Max Rating       | Frequency | Phase | Full Load Amps | UL / cUL                     | TUV   |
| Series                                                                   | 120/240          | 50 / 60   | 1     | 0.10 - 20      | 10,000                       | 5,000 |
|                                                                          | 240 <sup>1</sup> | 50 / 60   | 1     | 0.10 - 20      | ---                          | 5,000 |

Notes:  
 1 Voltage rating requires wiring configuration according to TUV, see Dimensional Specifications drawings for wiring diagram.

### Electrical

|                                  |                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Maximum Voltage                  | 120/240VAC 50/60 Hz                                                                                                                                                                                                                                                                                                                                                                                                 |
| Current Ratings                  | Standard current coils: 0.200, 0.350, 0.500, 0.750, 1.00, 2.50, 5.00, 7.50, 10.0, 15.0, 20.0 Amps. Other ratings available - consult ordering scheme.                                                                                                                                                                                                                                                               |
| Auxiliary/Alarm Switch Rating(s) | 10.1A 250VAC<br>0.1A 80VDC                                                                                                                                                                                                                                                                                                                                                                                          |
| Dielectric Strength              | Meets UL and CSA Requirements and can withstand 1500 VAC, 60Hz for one minute between all electrically isolated terminals. Breakers to hold 100%, and must trip at 125% of rated current and greater within the time limit shown on Table B.<br>Data shown represents breaker response at ambient temperature of 77° F (25° C) with no preloading. Breakers are mounted vertically in standard wall-mount position. |
| Insulation Resistance            | Minimum of 100 Megohms @ 500VDC                                                                                                                                                                                                                                                                                                                                                                                     |
| Overload                         | 50 operations @ 600% rated current                                                                                                                                                                                                                                                                                                                                                                                  |
| Inrush Pulse Tolerance           | Standard delays 12x rated current, high inrush delays 25x for 1/2 cycle @ 60 Hz                                                                                                                                                                                                                                                                                                                                     |
| Resistance / Impedance           | (Across circuit breaker terminals)                                                                                                                                                                                                                                                                                                                                                                                  |

RESISTANCE, IMPEDANCE VALUES  
from Line to Load Terminals  
(Values Based on Series Trip Circuit Breaker)



| CURRENT (AMPS) | TOLERANCE (%) |
|----------------|---------------|
| 0.10 - 5.0     | ± 15          |
| 5.1 - 20.0     | ± 25          |

### Agency Approvals

UL Listed (489) as Molded Case Circuit Breakers  
 TUV Certified IEC/EN 60947-2  
 CUL Certified CAN/CSA 22.2 No. 5

### Mechanical

|                 |                                                                                                               |
|-----------------|---------------------------------------------------------------------------------------------------------------|
| Endurance       | 6,000 ON-OFF operations @ 6 per minute; with rated Current and Voltage. 4,000 ON-OFF operations with no load. |
| Trip Free       | All TB-Series Circuit Breakers will trip on overload, even when Handle 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

|                                 |                                                                              |
|---------------------------------|------------------------------------------------------------------------------|
| Internal Circuit Configurations | Series, with or without auxiliary / alarm switch                             |
| Weight                          | Approximately 170g/5.75oz per unit                                           |
| Standard Colors                 | Housing – Black<br>Actuator – White or Black with contrasting ON-OFF legends |
| Mounting                        | Refer to the dimensional specifications page                                 |

### Environmental

|                                                                                                              |                                                                                                                                                                                      |
|--------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Designed and tested in accordance with requirements of specification MIL-PRF-55629 & MIL-STD-202 as follows: |                                                                                                                                                                                      |
| Shock                                                                                                        | Withstands 100G's, 6ms sawtooth 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 204D, Test Condition A. Instantaneous and ultrashort curves tested @ 90% of rated current. |
| Moisture Resistance/ Humidity                                                                                | Method 106G, i.e. ten 24-hour cycles @ +25°C to +65°C, 80-98% RH                                                                                                                     |
| Salt Spray                                                                                                   | Method 101E, 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                                                                                        | -20° C to +85° C                                                                                                                                                                     |
| Storage Temperature                                                                                          | -40° C to +85° C                                                                                                                                                                     |

\*Manufacturer reserves the right to change product specification without prior notice.

|           |             |            |          |              |                          |          |                        |          |                     |          |               |                        |                             |          |                             |                          |
|-----------|-------------|------------|----------|--------------|--------------------------|----------|------------------------|----------|---------------------|----------|---------------|------------------------|-----------------------------|----------|-----------------------------|--------------------------|
| <b>T</b>  | <b>B</b>    | <b>2</b>   | <b>-</b> | <b>B</b>     | <b>0</b>                 | <b>-</b> | <b>24</b>              | <b>-</b> | <b>620</b>          | <b>-</b> | <b>J</b>      | <b>2</b>               | <b>1</b>                    | <b>-</b> | <b>C</b>                    | <b>3</b>                 |
| 1<br>Type | 2<br>Series | 3<br>Poles |          | 4<br>Circuit | 5<br>Auxiliary<br>Switch |          | 6<br>Frequency & Delay |          | 7<br>Current Rating |          | 8<br>Terminal | 9<br>Actuator<br>Color | 10<br>Mounting/<br>Barriers |          | 11<br>Application<br>Rating | 12<br>Agency<br>Approval |

**1 TYPE****T** Tandem Breaker**2 SERIES****B** B-Series Circuit Breaker**3 POLES****2** Two**4 CIRCUIT****B** Series Trip (Current)**5 AUXILIARY SWITCH <sup>3</sup>**

**0** without Aux Switch  
**1** S.P.D.T., 0.093 Q.C. Term.  
**2** S.P.D.T., 0.110 Q.C. Term.  
**3** S.P.D.T., 0.110 Solder Lug  
**8** S.P.S.T., 0.187 Q.C. Term.  
**9** S.P.D.T., 0.187 Q.C. Term.

**6 FREQUENCY & TIME DELAY**

**21** 50/60Hz Ultra Short  
**22** 50/60Hz Short  
**24** 50/60Hz Medium  
**26** 50/60Hz Long  
**42** 50/60Hz Short, High-inrush  
**44** 50/60Hz Medium, High-inrush  
**46** 50/60Hz Long, High-inrush

**7 CURRENT RATING (AMPERES)**

| CODE            | AMPERES         |                  |                  |  |  |
|-----------------|-----------------|------------------|------------------|--|--|
| <b>210</b> 0.10 | <b>280</b> 0.80 | <b>440</b> 4.00  | <b>611</b> 11.00 |  |  |
| <b>215</b> 0.15 | <b>285</b> 0.85 | <b>445</b> 4.50  | <b>711</b> 11.50 |  |  |
| <b>220</b> 0.20 | <b>290</b> 0.90 | <b>450</b> 5.00  | <b>612</b> 12.00 |  |  |
| <b>225</b> 0.25 | <b>295</b> 0.95 | <b>455</b> 5.50  | <b>712</b> 12.50 |  |  |
| <b>230</b> 0.30 | <b>410</b> 1.00 | <b>460</b> 6.00  | <b>613</b> 13.00 |  |  |
| <b>235</b> 0.35 | <b>512</b> 1.25 | <b>465</b> 6.50  | <b>614</b> 14.00 |  |  |
| <b>240</b> 0.40 | <b>415</b> 1.50 | <b>470</b> 7.00  | <b>615</b> 15.00 |  |  |
| <b>245</b> 0.45 | <b>517</b> 1.75 | <b>475</b> 7.50  | <b>616</b> 16.00 |  |  |
| <b>250</b> 0.50 | <b>420</b> 2.00 | <b>480</b> 8.00  | <b>617</b> 17.00 |  |  |
| <b>255</b> 0.55 | <b>522</b> 2.25 | <b>485</b> 8.50  | <b>618</b> 18.00 |  |  |
| <b>260</b> 0.60 | <b>425</b> 2.50 | <b>490</b> 9.00  | <b>620</b> 20.00 |  |  |
| <b>265</b> 0.65 | <b>527</b> 2.75 | <b>495</b> 9.50  |                  |  |  |
| <b>270</b> 0.70 | <b>430</b> 3.00 | <b>610</b> 10.00 |                  |  |  |
| <b>275</b> 0.75 | <b>435</b> 3.50 | <b>710</b> 10.50 |                  |  |  |

**8 TERMINAL <sup>1</sup>**

**J** Screw M5 Back Connect  
**K** Screw 10-32 Back Connect  
**N** Screw M4 Back Connect  
**Y** Screw 8-32 Back Connect

**9 ACTUATOR COLOR & LEGEND**

| Actuator Color | ON-OFF   | Dual     | Legend Color |
|----------------|----------|----------|--------------|
| White          | <b>B</b> | <b>1</b> | Black        |
| Black          | <b>D</b> | <b>2</b> | White        |
| Red            | <b>G</b> | <b>3</b> | White        |
| Green          | <b>J</b> | <b>4</b> | White        |
| Blue           | <b>L</b> | <b>5</b> | White        |
| Yellow         | <b>N</b> | <b>6</b> | Black        |
| Gray           | <b>Q</b> | <b>7</b> | Black        |
| Orange         | <b>S</b> | <b>8</b> | Black        |

**10 MOUNTING <sup>2</sup>**

|          | HORIZONTAL MOUNTING STYLE                            | BARRIER  |
|----------|------------------------------------------------------|----------|
| <b>1</b> | 6-32 x .195 in. Threaded Inserts                     | Offset   |
| <b>3</b> | 6-32 x .195 in. Threaded Inserts                     | Standard |
| <b>A</b> | 6-32 x .195 in. Threaded Inserts with Actuator Guard | Offset   |
| <b>C</b> | 6-32 x .195 in. Threaded Inserts with Actuator Guard | Standard |
| <b>2</b> | ISO M3 x 5 mm Threaded Inserts                       | Offset   |
| <b>4</b> | ISO M3 x 5 mm Threaded Inserts                       | Standard |
| <b>B</b> | ISO M3 x 5 mm Threaded Inserts with Actuator Guard   | Offset   |
| <b>D</b> | ISO M3 x 5 mm Threaded Inserts with Actuator Guard   | Standard |
|          | VERTICAL MOUNTING STYLE                              | BARRIER  |
| <b>5</b> | 6-32 x .195 in. Threaded Inserts                     | Offset   |
| <b>7</b> | 6-32 x .195 in. Threaded Inserts                     | Standard |
| <b>E</b> | 6-32 x .195 in. Threaded Inserts with Actuator Guard | Offset   |
| <b>G</b> | 6-32 x .195 in. Threaded Inserts with Actuator Guard | Standard |
| <b>6</b> | ISO M3 x 5 mm Threaded Inserts                       | Offset   |
| <b>8</b> | ISO M3 x 5 mm Threaded Inserts                       | Standard |
| <b>F</b> | ISO M3 x 5 mm Threaded Inserts with Actuator Guard   | Offset   |
| <b>H</b> | ISO M3 x 5 mm Threaded Inserts with Actuator Guard   | Standard |

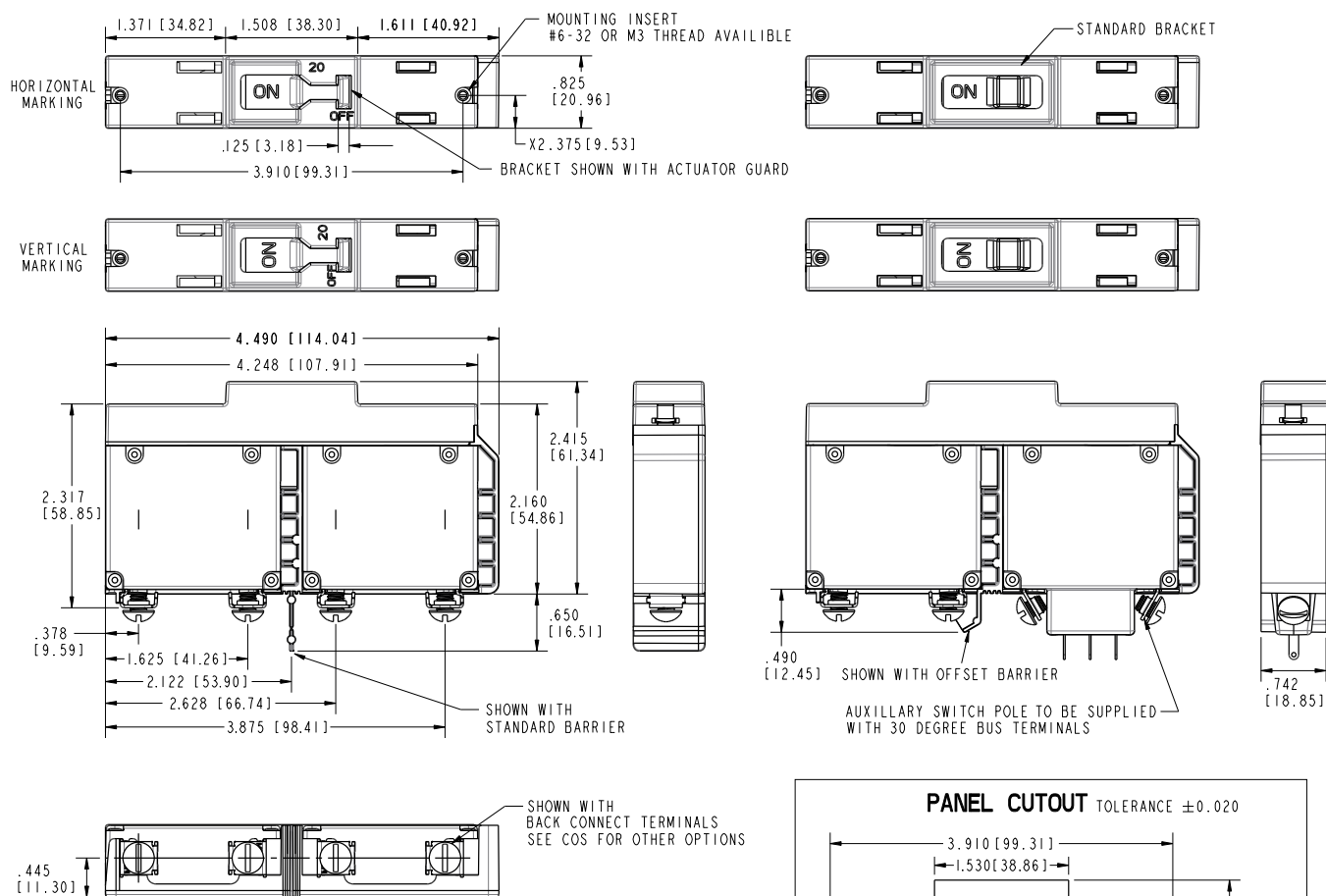
**11 APPLICATION RATING****C** 120/240 VAC**12 AGENCY APPROVAL**

**A** Without Approvals  
**G** UL489 Listed  
**3 4** UL489 Listed, TUV Certified

## Notes:

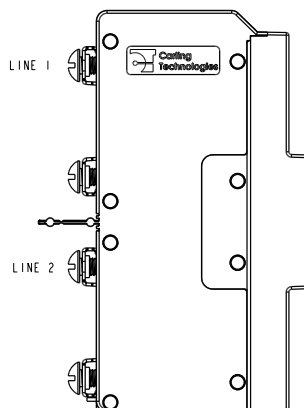
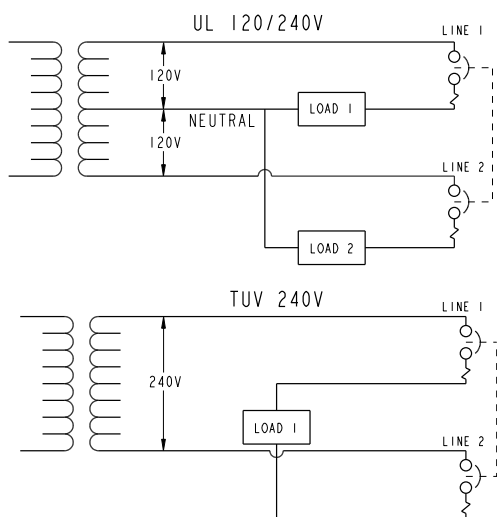
- 1 Pole with auxiliary switch is supplied with 30 degree bus terminals.
- 2 Only available with terminal codes J,K,N,Y.
- 3 Supplied with one auxiliary switch. See dimensional specs drawings for location.
- 4 TUV certification only available with I/O ON/OFF markings (Actuator code: 1,2,3,4,5,6,7,8)

## Dimensional Specifications: in. [mm]



- Notes:
- 1 All dimensions are in inches [millimeters].
  - 2 Tolerance  $\pm 0.20$  [.51] unless otherwise specified.

## Wiring Diagrams:



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