

# TB-Series

## TB-Series

### 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:

[Download 3D CAD Files](#)

[IGS >](#) [STP >](#)

[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



**Carling Technologies®**

Innovative Designs. Powerful Solutions.

**Carling Technologies, Inc.**  
60 Johnson Avenue, Plainville, CT 06062  
Email: [sales@carlingtech.com](mailto:sales@carlingtech.com)  
Application Support: [team2@carlingtech.com](mailto:team2@carlingtech.com)  
Phone: 860.793.9281 Fax: 860.793.9231

[www.carlingtech.com](http://www.carlingtech.com)

## 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  
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.  
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.

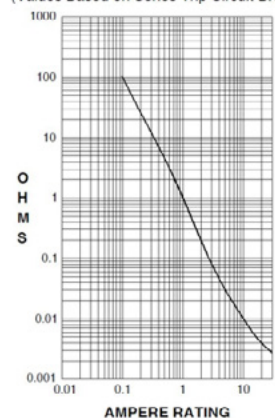
Insulation Resistance Minimum of 100 Megohms @ 500VDC

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

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

### 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  
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.

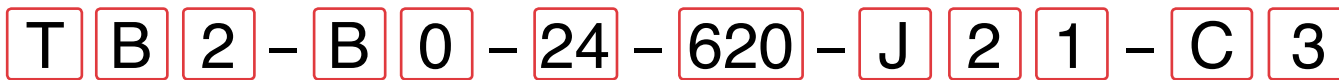
Moisture Resistance/ Humidity Method 106G, i.e. ten 24-hour cycles @ +25°C to +65°C, 80-98% RH

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



1 Type    2 Series    3 Poles    4 Circuit    5 Auxiliary Switch    6 Frequency & Delay    7 Current Rating    8 Terminal    9 Actuator Color    10 Mounting/Barriers    11 Application Rating    12 Agency 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, Hi-Inrush  
**44** 50/60Hz Medium, Hi-Inrush  
**46** 50/60Hz Long, Hi-Inrush

**7 CURRENT RATING (AMPERES)**

CODE	AMPERES	
210	0.10	280 0.80
215	0.15	285 0.85
220	0.20	290 0.90
225	0.25	295 0.95
230	0.30	410 1.00
235	0.35	512 1.25
240	0.40	415 1.50
245	0.45	517 1.75
250	0.50	420 2.00
255	0.55	522 2.25
260	0.60	425 2.50
265	0.65	527 2.75
270	0.70	430 3.00
275	0.75	435 3.50
		440 4.00
		445 4.50
		450 5.00
		455 5.50
		460 6.00
		465 6.50
		470 7.00
		475 7.50
		480 8.00
		485 8.50
		490 9.00
		495 9.50
		610 10.00
		620 20.00

**8 TERMINAL 1**  
**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 2**

	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

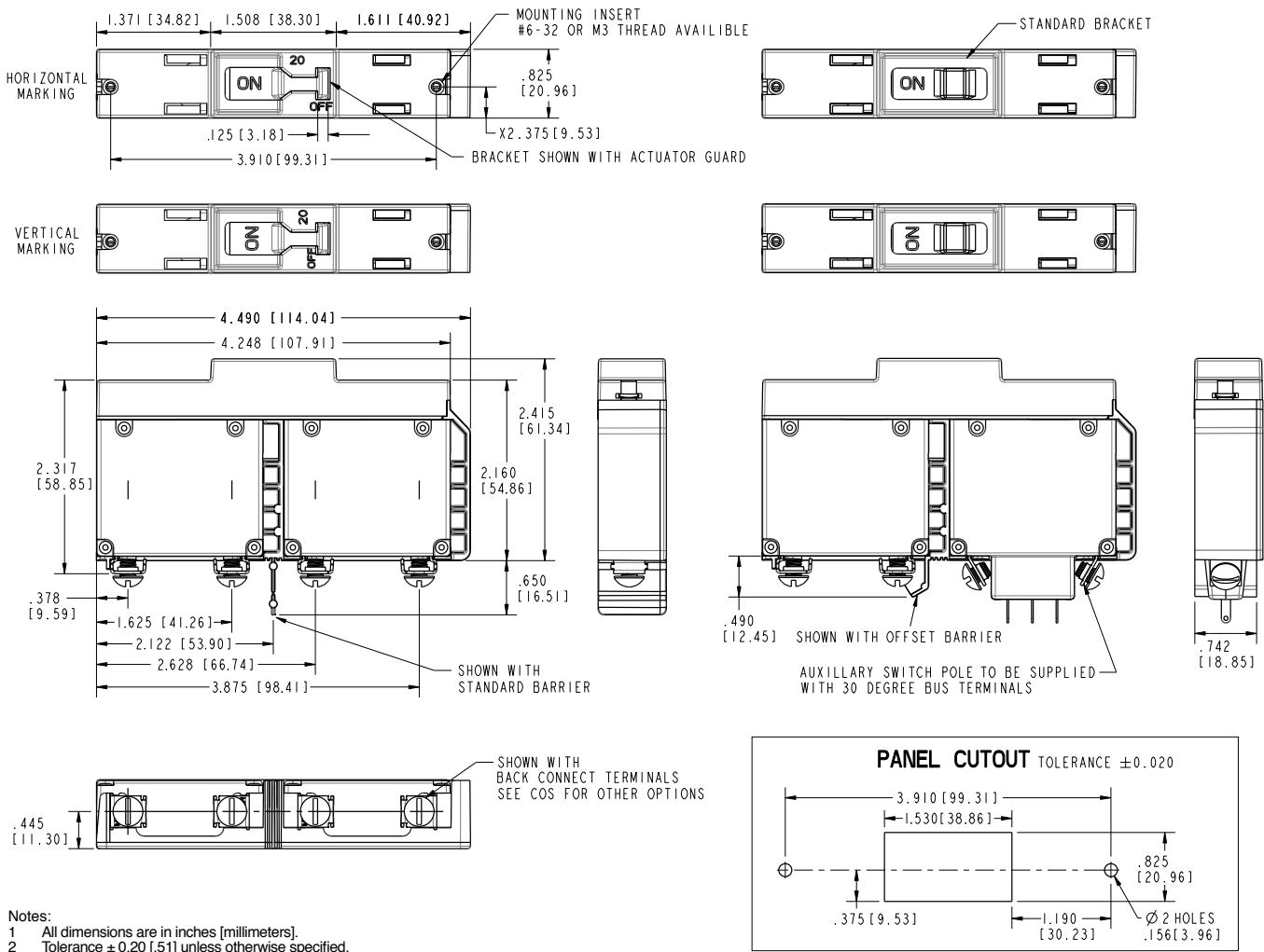
	VERTICAL MOUNTING STYLE	BARRIER
<b>5</b>	6-32 x .195 in. Threaded Inserts	Offset
<b>7</b>	6-32 x .195 in. Threaded Inserts	Standard
<b>E</b>	6-32 x .195 in. Threaded Inserts with Actuator Guard	Offset
<b>G</b>	6-32 x .195 in. Threaded Inserts with Actuator Guard	Standard
<b>6</b>	ISO M3 x 5 mm Threaded 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

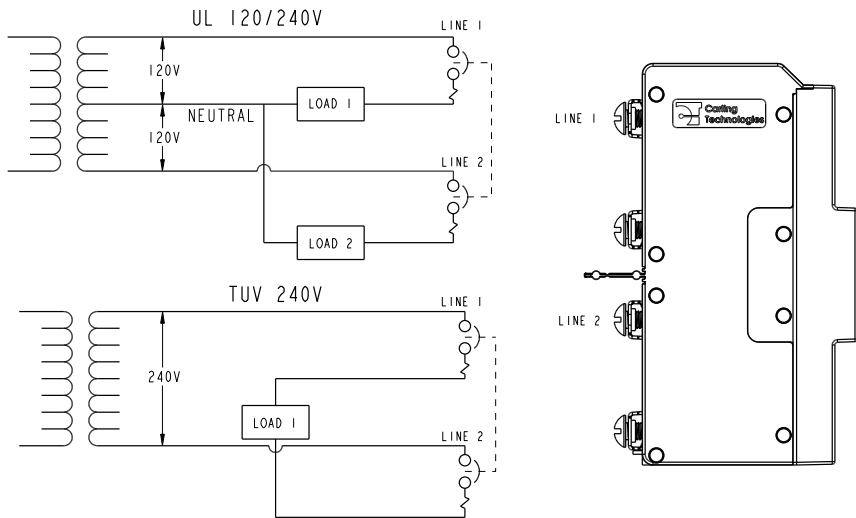
Notes:  
 1 Pole with auxiliary switch is supplied with 30 degree bus terminals.  
 2 Only available with terminal codes J,K,N,Y.  
 3 Supplied with one auxiliary switch. See dimensional specs drawings for location.  
 4 TUV certification only available with I/O ON/OFF markings (Actuator code: 1,2,3,4,5,6,7,8)

### Dimensional Specifications: in. [mm]



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

### Wiring Diagrams:



## Authorized Sales Representatives and Distributors

Click on a region of the map below to find your local representatives and distributors or visit [www.carlingtech.com/findarep](http://www.carlingtech.com/findarep).



## About Carling

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](http://www.carlingtech.com/company-profile).

To view all of Carling's environmental, quality, health & safety certifications please visit [www.carlingtech.com/environmental-certifications](http://www.carlingtech.com/environmental-certifications)

## **Worldwide Headquarters**

Carling Technologies, Inc.  
60 Johnson Avenue, Plainville, CT 06062  
**Phone:** 860.793.9281 **Fax:** 860.793.9231  
**Email:** sales@carlingtech.com

**Northern Region Sales Office:** nrsm@carlingtech.com  
**Southeast Region Sales Office:** sersm@carlingtech.com  
**Midwest Region Sales Office:** mrrsm@carlingtech.com  
**West Region Sales Office:** wrsm@carlingtech.com  
**Latin America Sales Office:** larsm@carlingtech.com

## **Asia-Pacific Headquarters**

Carling Technologies, Asia-Pacific Ltd.,  
Suite 1607, 16/F Tower 2, The Gateway,  
Harbour City, 25 Canton Road,  
Tsimshatsui, Kowloon, Hong Kong  
**Phone:** Int + 852-2737-2277 **Fax:** Int + 852-2736-9332  
**Email:** sales@carlingtech.com.hk

**Shenzhen, China:** shenzhen@carlingtech.com  
**Shanghai, China:** shanghai@carlingtech.com  
**Pune, India:** india@carlingtech.com  
**Kaohsiung, Taiwan:** taiwan@carlingtech.com  
**Yokohama, Japan:** japan@carlingtech.com

## **Europe | Middle East | Africa Headquarters**

Carling Technologies LTD  
4 Airport Business Park, Exeter Airport,  
Clyst Honiton, Exeter, Devon, EX5 2UL, UK  
**Phone:** Int + 44 1392.364422 **Fax:** Int + 44 1392.364477  
**Email:** ltd.sales@carlingtech.com

**Germany:** gmbh@carlingtech.com  
**France:** sas@carlingtech.com



**Carling Technologies®**

Innovative Designs. Powerful Solutions.