



Carling Technologies®
Innovative Designs. Powerful Solutions.

THERMAL

Circuit Protection



CATALOG

FOUNDED IN 1920



Since its founding, Carling Technologies has continually forged a tradition of leadership in quality and product innovation.

There are few products that Carling Technologies hasn't turned "ON" and fewer industries that haven't turned to Carling for solutions. With ISO and TS registered manufacturing facilities and technical sales offices worldwide, Carling ranks among the world's largest manufacturers of circuit breakers, switches, power distribution units, digital switching systems and electronic controls.



SWITCHES & CONTROLS

- Rocker
- Toggle
- Pushbutton
- Rotary

CIRCUIT PROTECTION

- Hydraulic-Magnetic
- Thermal
- GFCI / ELCI

CUSTOM SOLUTIONS

- PDU's
- Keypads
- Control Modules

MULTIPLEXED POWER SYSTEMS

- HMI Devices & I/O Modules
- Programmable Displays
- Data Communication Interfaces
- Electrical Systems Monitoring

STRATEGIC MARKETS SERVED:



On/Off Highway



Marine



Telecom/Datacom



Military



Renewable Energy

GLOBAL LOCATIONS:

Carling Technologies
World Headquarters
Plainville, CT, USA
ISO9001:2008
ISO/TS16949:2009

Maretron
Phoenix, AZ, USA

Carling Technologies
Brownsville, TX, USA
ISO14001:2004
ISO9001:2008
ISO/TS16949:2009

Carling Technologies
Matehuala, Mexico
ISO14001:2004
ISO9001:2008
ISO/TS16949:2009

Carling Technologies
Jupiter, FL, USA

Carling Technologies
European Headquarters
Exeter, UK
ISO9001:2008
ISO/TS16949:2009

Carling Technologies
Kowloon, Hong Kong
ISO9001:2008
ISO/TS16949:2009

Carling Technologies
Zhongshan, China
ISO14001:2004
ISO9001:2008
ISO/TS16949:2009

OTHER SERVED INDUSTRIES:



Medical



Industrial Control



Audio / Visual



Commercial Food



HVAC



Floor Care



Generators



Small Appliances



Security Systems



Test & Measurement

WORLDWIDE NUMBERS:



2000+
EMPLOYEES



150+
ENGINEERS

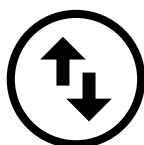


70+
DISTRIBUTORS



50+
REP FIRMS

COMPETITIVE ADVANTAGES⁺



Vertical
Integration



Reliable &
On-Time Delivery



Excellent
Customer Service



Innovative &
Eco-Friendly Products

Table of Contents

Selector Guide	2
C1005B–Series	3
Lighted Rocker Thermal Circuit Protection, Ratings up to 16A AC/DC	
CTB–Series	5
Panel Mount Rocker Thermal Circuit Protection, Ratings up to 15A AC/DC	
CMB–Series	7
Pushbutton Thermal Circuit Protection, Ratings up to 20A AC/DC	
CLB–Series	9
Pushbutton Thermal Circuit Protection, Ratings up to 60A AC/DC	
CMBA/CLBA–Series	11
Auto-Reset Thermal Circuit Protection, Ratings up to 40A AC/DC	

Thermal Circuit Protectors

This catalog features Carling Technologies’ current line of thermal circuit protectors, from 3 to 60 amps, which offer reliable, cost effective circuit protection. Thermal circuit protectors utilize a bimetallic strip electrically in series with the circuit. The heat generated by the current during an overload deforms the bimetallic strip and trips the breaker. Thermal protectors have a significant advantage over fuses in that they can be reset after tripping. They can also be used as the main ON/OFF switch for the equipment being protected.

Typical Applications Include:

- Household Appliances
- Transportation
- Marine
- Power Strips
- Medical Equipment
- Audio Visual Equipment
- Power Supplies
- Exercise Equipment



					
	<i>C1005B-Series</i>	<i>CTB-Series</i>	<i>CMB-Series</i>	<i>CLB-Series</i>	<i>CMBA/CLBA-Series</i>
Number of Poles	1	1	1	1	1
Actuator Style	rocker, lighted rocker	rocker	pushbutton	pushbutton	n/a
Max Current & Voltage Ratings	7 to 16A, 125-250VAC, 32VDC	3 to 16A, 125-250VAC, 50VDC	3 to 20A, 125-250VAC, 32 VDC	3 to 60A, 125-250VAC, 32 VDC	3 to 60A, 125-250VAC, 32 VDC
Max Interrupting Capacity	1000A	1000A	2500A@32VDC	2500A@32VDC	2500A@32VDC
Available Circuits	series trip manual reset	series trip manual reset	series trip manual reset	series trip manual reset	series trip auto reset
Terminal Options	.250" tab, solder lug	.250" tab	.250" tab, .250" tab with 90° bend, screw terminal, screw terminal with 90° bend	.250" tab, .250" tab with 90° bend, screw terminal, screw terminal with 90° bend	.250" tab, .250" tab with 90° bend screw terminal, screw terminal with 90° bend
Mounting Method	front panel snap-in	front panel snap-in	threaded bushing, front panel snap-in	threaded bushing, front panel snap-in	plug-in
Operating Temperature	-10°C to 65°C	-10°C to 60°C	-10°C to 60°C	-10°C to 60°C	-10°C to 60°C
Agency Approvals	UL, cUL, TUV	UL, cUL, VDE, CE	UL, cUL, CSA, TUV, CE, UL 1500 / ISO 8846 for ignition protection / marine	UL, cUL, CSA, TUV, CE, UL 1500 / ISO 8846 for ignition protection / marine	UL, cUL, TUV, UL 1500 / ISO 8846 for ignition protection / marine

*Manufacturer reserves the right to change product information without prior notice

C1005B-Series

THERMAL CIRCUIT PROTECTORS

The C1005B-Series offers the functionality of a switch and circuit breaker in a single compact package, which fits an industry standard .550 x 1.125 mounting hole. This combo device eliminates the need for both a switch and thermal circuit protector on customer panels. By using only this multipurpose product, wiring and assembly costs are greatly reduced, while at the same time, valuable panel real estate is saved.

The C1005B-Series is available lighted or unlighted, in a variety of colors, with solder lug or .250 tabs. Current ratings range from 7-16 amps@125 and 250 VAC and up to 32 VDC.



Product Highlights:

- ♦ .550 x 1.125 mounting hole (14mm x 28.6mm)
- ♦ Ratings from 7-16A
- ♦ Standard Reset/Off Legend
- ♦ Curved Rocker & Angular Bezel
- ♦ .250 Tabs or Solder Lug Terminations
- ♦ 65°C Max Operating Temperature
- ♦ 1000 AIC Interrupting Capacity
- ♦ 1500 VAC Dielectric Strength
- ♦ 100M ohms @500VDC Insulation Resistance
- ♦ Compact Space-Saving Envelope
- ♦ UL1077, UL1363, IEC 60934

Typical Applications:

- ♦ Household Appliances
- ♦ Commercial Appliances
- ♦ Transportation
- ♦ Marine
- ♦ Telecommunications
- ♦ Power Strips
- ♦ Audio-visual Equipment
- ♦ Medical equipment
- ♦ Power supplies
- ♦ Generators

C1005B**- 3****B****15****1****B****R****3**1
Series2
Illumination3
Termination4
Current
Rating5
Contact
Material6
Bezel
Legend7
Rocker
Color8
Lamp
Voltage**1 SERIES**
C1005B**2 ILLUMINATION**

- 2 Non-Lighted
-
- 3 Lighted

3 TERMINATION

- A Solder Lug
-
- B .250 Tab

4 CURRENT RATING (AMPERES)

07	7 amps	12	12 amps
08	8 amps	13	13 amps
09	9 amps	14	14 amps
10	10 amps	15	15 amps
11	11 amps	16	16 amps

5 CONTACT MATERIAL ¹

- 1 Silver Cad Oxide (switch), Silver plated copper (breaker)

6 BEZEL LEGEND IMPRINT

- B Black Bezel with white legend
-
- W White Bezel with black legend
-
- C Gray Bezel with black legend

7 ROCKER COLOR

- R Red
-
- G Green
-
- U Blue
-
- T Clear

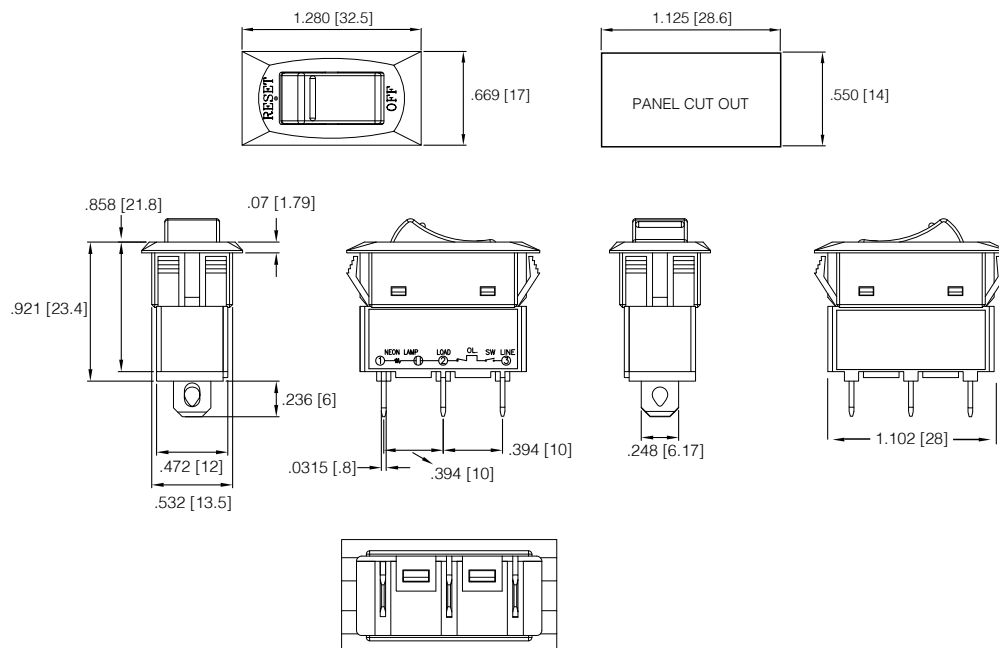
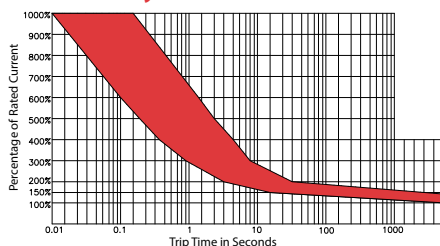
Note: RESET OFF Legend is standard.

8 LAMP VOLTAGE

- 3 Neon Lamp 125/250 VAC
-
- 9 Non-lighted

Notes:

1. Silver cad oxide switch and breaker contacts are available as a special order.
-
- Specify 3 for selection 5

Dimensional Specifications: in. [mm]**Time Delay**

Overload	Trip Time
100%	No Trip
150%	Trip in 1 hr
200%	4.0 ~ 40 sec.
300%	0.9 ~ 8.0 sec.
400%	0.42 ~ 5.0 sec.
500%	0.25 ~ 3.0 sec.
600%	0.01 ~ 1.8 sec.

Time Trip Factor ¹
-10 °C x 1.70
-5 °C x 1.60
0 °C x 1.50
5 °C x 1.40
10 °C x 1.30
15 °C x 1.20
20 °C x 1.10
25 °C x 1.00

Time Trip Factor ¹
30 °C x 0.90
35 °C x 0.85
40 °C x 0.80
45 °C x 0.75
50 °C x 0.70
55 °C x 0.65
60 °C x 0.60

Notes:

1. Trip Time factor is a guideline that indicates ambient temperature effect on trip times at various overload values.

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

CTB-Series

THERMAL CIRCUIT PROTECTORS

The CTB-Series is a compact, single pole, rocker actuated family of thermal circuit breakers designed to protect equipment. Utilizing simple, precision design with few moving parts, these breakers offer cost effective, extremely reliable circuit protection with high resistance against shock and vibration. Electrical ratings range from 3 to 16 amps at 125, 250VAC or 50VDC. This breaker resets with the push of a finger and features a snap in mounting style, utilizing a 16mm dia. round Double D mounting hole.



Product Highlights:

- ♦ Ratings from 3-16A, 125, 250VAC, 50VDC
- ♦ .250 Tabs
- ♦ 60°C Max Operating Temperature
- ♦ 1000 AIC Interrupting Capacity
- ♦ 100M ohms Insulation Resistance
- ♦ UL, cUL, VDE, CE

Applications:

- ♦ Household Appliances
- ♦ Transportation
- ♦ Marine
- ♦ Power Strips
- ♦ Medical Equipment
- ♦ Audio Visual Equipment
- ♦ Power Supplies
- ♦ Exercise Equipment
- ♦ ROHS Complaint

CTB - **B** - **B** - **05** - **B**

1 Series 2 Bezel Color 3 Rocker Color 4 Rating 5 Panel Thickness

1 SERIES

CTB

2 BEZEL COLOR ¹

B Black

3 ROCKER COLOR ¹

B Black

4 RATING

03	3 amps	08	8 amps	14	14 amps
04	4 amps	09	9 amps	15	15 amps
05	5 amps	10	10 amps	16	16 amps
06	6 amps	12	12 amps		
07	7 amps	13	13 amps		

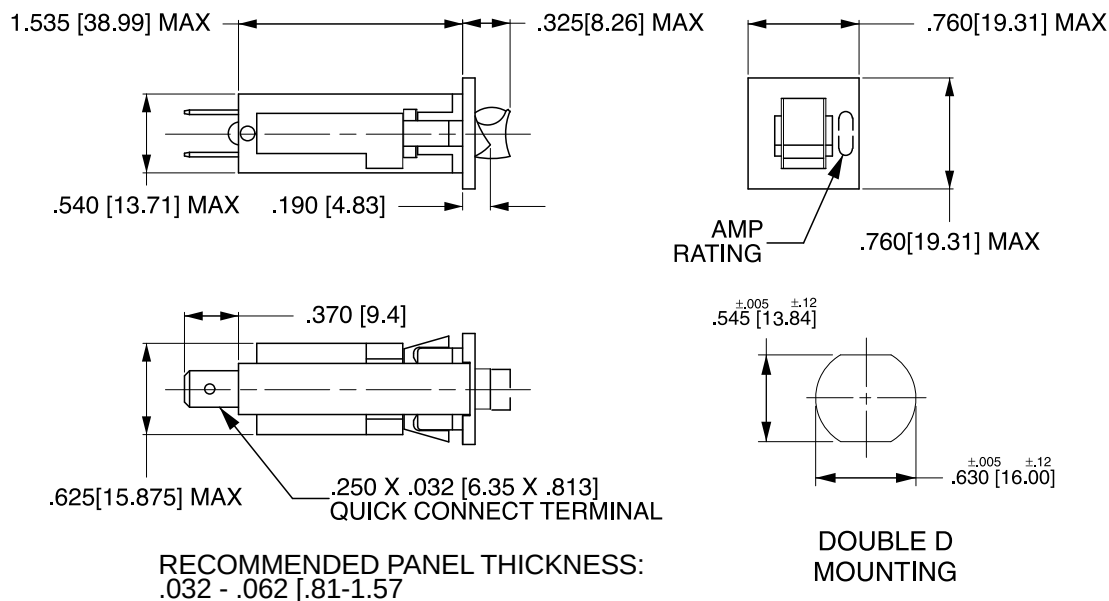
5 PANEL THICKNESS

blank fits standard thickness of .032 – .062
 B fits .070 – .110 panel thickness

Notes:

1. Additional colors available. Consult factory.

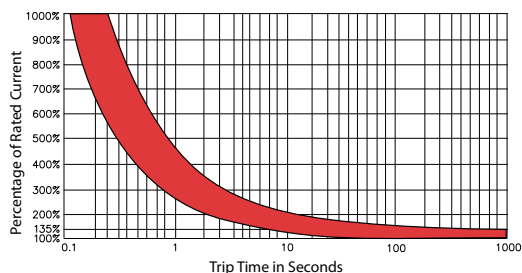
Dimensional Specifications: in. [mm]



Notes:

All dimensions are in inches [millimeters]. Tolerance ± 0.005 [.127] unless otherwise specified. Breaker must hold 100% of rated current and must trip at 150% and above, within the time limits shown in curve. Trip times specified at 25° ambient with no preloading.

Time Delay



Overload	Trip Time
100%	No Trip
135%	Trip in 1 hr
200%	2.2 ~ 15 sec.
300%	0.9 ~ 3.4 sec.
400%	0.57 ~ 1.6 sec.
500%	0.38 ~ 0.94 sec.
600%	0.27 ~ 0.76 sec.

Correction Factor ¹	
0 °C	x 0.85
10 °C	x 0.90
15 °C	x 0.925
18 °C	x 0.952
25 °C	x 1.00
32 °C	x 1.05
40 °C	x 1.15
50 °C	x 1.39
60 °C	x 1.49

Notes:

1. To adjust the breaker rating for ambient temperature, multiply the breaker rating by the factor. ex: 5A rating x .850 = 4.25A. Select 4A rating.

CMB-Series

THERMAL CIRCUIT PROTECTORS

The CMB-Series is a compact, single pole, push-to-reset family of thermal circuit breakers designed to protect equipment. Utilizing simple, precision design with few moving parts, these breakers offer cost effective, extremely reliable circuit protection with high resistance against shock and vibration.



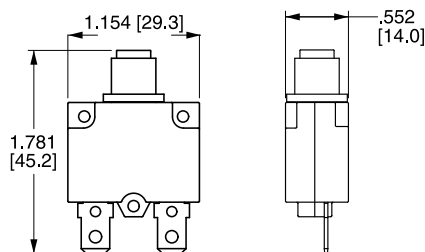
Product Highlights:

- ♦ Ratings from 3-20A, 125, 250VAC, 32VDC
- ♦ 2500 VAC/1 minute
- ♦ 60°C Max Operating Temperature
- ♦ 2500A @ 32VDC Interrupting Capacity
- ♦ 100M ohms Insulation Resistance
- ♦ Voltage drop <0.25 V
- ♦ UL, cUL, CSA, TUV, CE
- ♦ UL1500/ISO8846 for ignition protection/marine

Applications:

- ♦ Household Appliances
- ♦ Transportation
- ♦ Marine
- ♦ Power Strips
- ♦ Medical Equipment
- ♦ Audio Visual Equipment
- ♦ Power Supplies
- ♦ ROHS Compliant

Dimensional Specifications: in. [mm]



CMB - **10** **3** - **11** **C** **3** **N** - **B** - **A** /**10**

1 Series

2 Rating

3 Voltage

4 Mounting Hole

5 Bushing Type

6 Mounting Nut

7 Indicator Plate

8 Button

9 Terminal

10 Button Marking

1 SERIES CMB

3 VOLTAGE

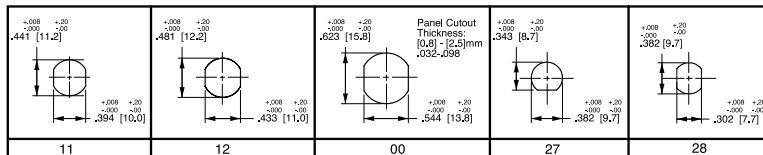
3 125-250VAC/ 32 VDC

2 RATING

03	3 amps	12	12 amps
04	4 amps	13	13 amps
05	5 amps	14	14 amps
06	6 amps	15	15 amps
07	7 amps	16	16 amps
08	8 amps	20	20 amps

4 MOUNTING HOLE

11 1 M11
12 2 M12
00 3 Snap In Style
27 15 3/8" 27 UNS
28 12 3/8" 27 UNS (double flatted)



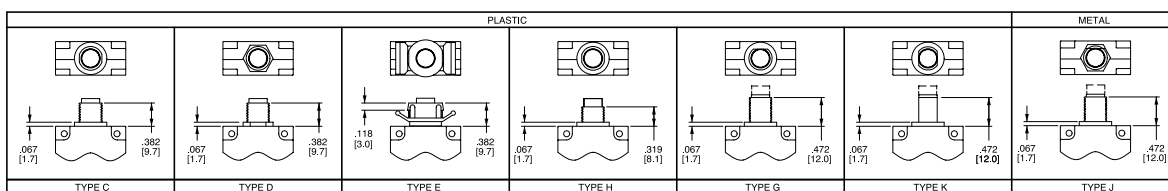
5 BUSHING

PLASTIC

C 4 Type C
D 4 Type D
E 5 Type E
G 8 Type G
H 6 Type H
K 13 Type K

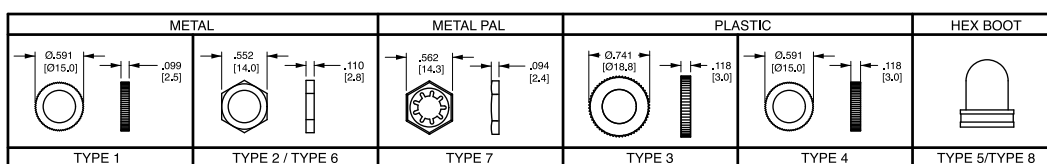
METAL

J 8 Type J



6 MOUNTING NUT 7

N None
1 Type 1
2 Type 2
3 11 Type 3
4 Type 4
5 Type 5
6 14 Type 6
7 9 Type 7
8 9 Type 8

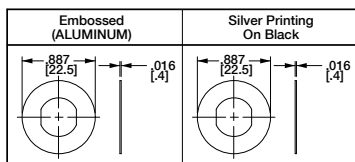


NOTE: Type 5 is clear hex boot. Type 8 is black hex boot (available for bushings G, J & K only); Type 3 nut includes molded in "PRESS TO RESET" marking.

7 INDICATOR PLATE 7

N None
A Embossed Legend
B Silver Printing on Black

All indicator plates are marked "Suppl. Prot. press to reset".



Notes: All dimensions are in [mm]. Tolerance ± 0.05 [127] unless otherwise specified.

- Used with bushing C or D only.
- Used with H bushing only.
- Used with bushing E only.
- Used with M11 mounting hole only.
- Used with mounting hole 00 only.
- Used with M12 mounting hole only.
- All hardware available separately. Consult factory.
- Available with mounting hole 27 only.
- Available with G, J or K bushing only.
- Amp rating must match button marking (ex: 20 will be marked on the button of CMB-203-27G3N-W-A/20)
- Includes molded in "PRESS TO RESET" marking.
- Available with K bushing only.
- Available with mounting hole 28 only.
- Thickness is 3.0 mm, .118 in.
- Available with G or J bushing only.

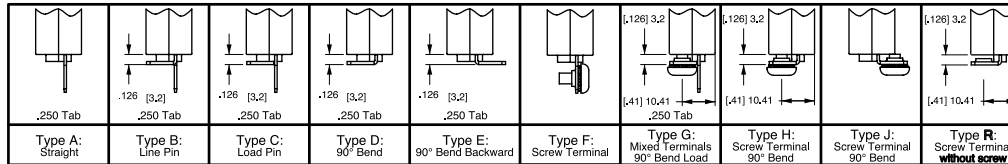
8 BUTTON

B Black **R** Red **W** White

9 TERMINAL

A Type A **F** Type F
B Type B **G** Type G
C Type C **H** Type H
D Type D **J** Type J
E Type E **R** Type R

F,G,H,J TERMINALS ARE 8-32 UNC

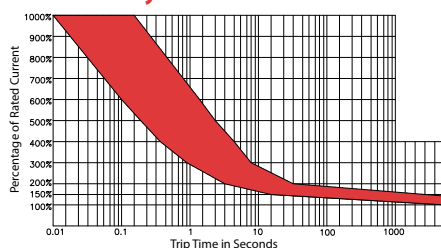


10 BUTTON MARKING (IF BLANK, NO MARKING)¹⁰

Button Marking Orientation: line **20** load

03	3 amp	05	5 amp	07	7 amp	10	10 amp	13	13 amp	15	15 amp	20	20 amp
04	4 amp	06	6 amp	08	8 amp	12	12 amp	14	14 amp	16	16 amp		

Time Delay



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

Overload	Trip Time
100%	No Trip
150%	Trip in 1 hr
200%	4.0 ~ 40 sec.
300%	0.9 ~ 8.0 sec.
400%	0.42 ~ 5.0 sec.
500%	0.25 ~ 3.0 sec.
600%	0.01 ~ 1.8 sec.

Time Trip Factor ¹
-10 °C x 1.70
-5 °C x 1.60
0 °C x 1.50
5 °C x 1.40
10 °C x 1.30
15 °C x 1.20
20 °C x 1.10
25 °C x 1.00

Time Trip Factor ¹
30 °C x 0.90
35 °C x 0.85
40 °C x 0.80
45 °C x 0.75
50 °C x 0.70
55 °C x 0.65
60 °C x 0.60

Notes:

- Trip Time factor is a guideline that indicates ambient temperature effect on trip times at various overload values.

CLB-Series

THERMAL CIRCUIT PROTECTORS

The CLB-Series is a compact, single pole, push-to-reset family of thermal circuit breakers designed to protect equipment. Utilizing simple, precision design with few moving parts, these breakers offer cost effective, extremely reliable circuit protection with high resistance against shock and vibration.



Product Highlights:

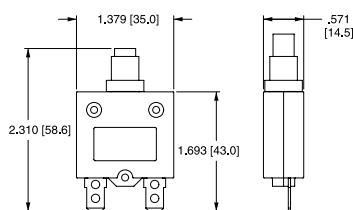
- ♦ Ratings from 3-60A, 125, 250VAC, 32VDC
- ♦ 2500 VAC/1 minute
- ♦ 60°C Max Operating Temperature
- ♦ 2500A @ 32VDC Interrupting Capacity
- ♦ 100M ohms Insulation Resistance
- ♦ Voltage drop <0.25 V
- ♦ UL, cUL, CSA, TUV, CE
- ♦ UL1500/ISO8846 for ignition protection/marine

Applications:

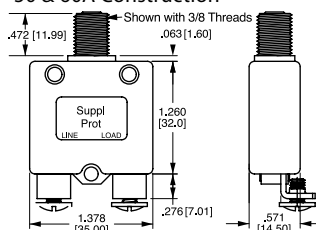
- ♦ Household Appliances
- ♦ Transportation
- ♦ Marine
- ♦ Power Strips
- ♦ Medical Equipment
- ♦ Audio Visual Equipment
- ♦ Power Supplies
- ♦ ROHS Complaint

Dimensional Specifications: in. [mm]

3-40A Construction



50 & 60A Construction



CLB - 10 3 - 12 C 3 B - B - A / 10

1 Series 2 Rating 3 Voltage 4 Mounting Hole 5 Bushing Type 6 Mounting Nut 7 Indicator Plate 8 Button 9 Terminal 10 Button Marking

1 SERIES

CLB

3 VOLTAGE

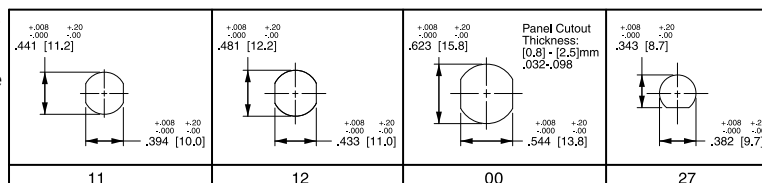
3 125-250VAC/ 32 VDC

2 RATING

03	3 amps	15	15 amps
04	4 amps	18	18 amps
05	5 amps	20	20 amps
06	6 amps	25	25 amps
07	7 amps	30	30 amps
08	8 amps	35	35 amps
10	10 amps	40	40 amps
12	12 amps	50	50 amps
13	13 amps	60	60 amps

4 MOUNTING HOLE

- 11** 1 M11
12 2 M12
00 3 Snap In Style
27 4 3/8" 27 UNS



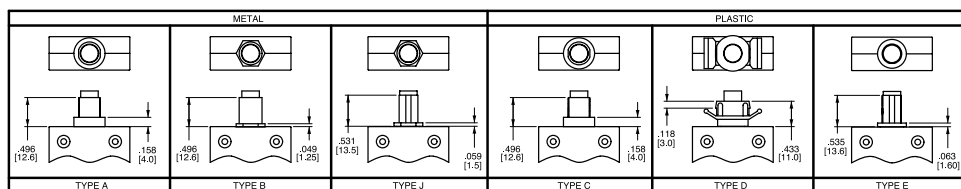
5 BUSHING

METAL

- A** 6 Type A
B 16 Type B
J 8 Type J

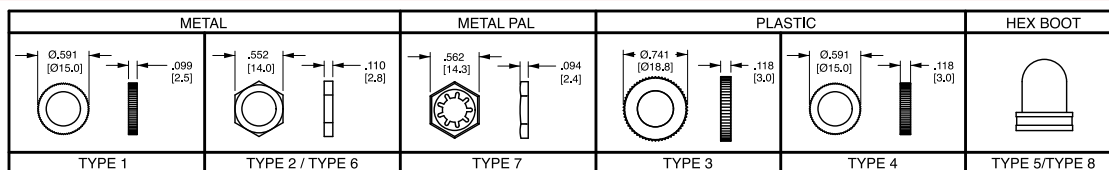
PLASTIC

- C** 5 Type C
D 7 Type D
E 8 Type E



6 MOUNTING NUT 9

- N** None
1 Type 1
2 Type 2
3 17 Type 3
4 Type 4
5 Type 5
6 4, 14 Type 6
7 4 Type 7
8 4 Type 8

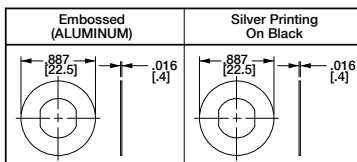


NOTE: Type 5 is clear hex boot. Type 8 is black hex boot (available for bushings E & J only); Type 3 nut includes molded in "PRESS TO RESET" marking.

7 INDICATOR PLATE 9

- N** None
A Embossed
B Silver Printing on Black

All indicator plates are marked "Suppl. Prot. press to reset".



Notes: All dimensions are in [mm]. Tolerance ± 0.005 [0.127] unless otherwise specified.

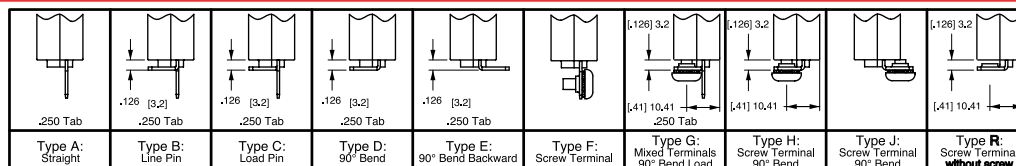
- Used with bushing A or B only.
- Used with bushing A or C only.
- Used with bushing D only.
- Used with bushing E & J only.
- Used with M12 mounting hole only.
- Used with M11 and M12 mounting hole only.
- Used with mounting hole 00 only.
- Used with 27 mounting hole only.
- All hardware available separately.
- Greater than 35 amp rating must use solder joint to connect wire to non-screw type terminals.
- Terminals are .040 [1.0] thickness for ratings greater than 35 amps. Terminals are .315 [0.8] thickness is for ratings less than 35 amps.
- Available only with 10-24 unc. screw terms. (select type F, G, H, J only.) UL, CUL only.
- Amp rating must match button marking (ex: "20" will be marked on the button of the breaker)
- Thickness is 3.0 mm, .118 in.
- Screw terminals are 8-32 UNC
- Used with M11 mounting hole only.
- Includes molded in "PRESS TO RESET" marking.

8 BUTTON

- B** Black **R** Red **W** White

9 TERMINAL 10,11,15

- A** Type A **F** Type F
B Type B **G** Type G
C Type C **H** Type H
D Type D **J** Type J
E Type E **R** Type R

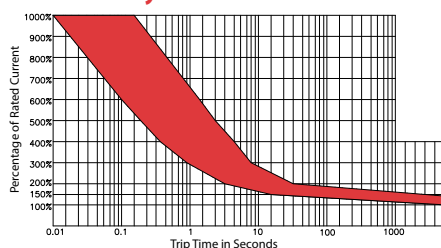


10 BUTTON MARKING (IF BLANK, NO MARKING)¹³ Button Marking Orientation:

line **(20)** load

03	3 amp	06	6 amp	10	10 amp	15	15 amp	25	25 amp	40	40 amp
04	4 amp	07	7 amp	12	12 amp	18	18 amp	30	30 amp	50	50 amp
05	5 amp	08	8 amp	13	13 amp	20	20 amp	35	35 amp	60	60 amp

Time Delay



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

Overload	Trip Time
100%	No Trip
150%	Trip in 1 hr
200%	4.0 ~ 40 sec.
300%	0.9 ~ 8.0 sec.
400%	0.42 ~ 5.0 sec.
500%	0.25 ~ 3.0 sec.
600%	0.01 ~ 1.8 sec.

Time Trip Factor ¹
-10 °C x 1.70
-5 °C x 1.60
0 °C x 1.50
5 °C x 1.40
10 °C x 1.30
15 °C x 1.20
20 °C x 1.10
25 °C x 1.00

Time Trip Factor ¹
30 °C x 0.90
35 °C x 0.85
40 °C x 0.80
45 °C x 0.75
50 °C x 0.70
55 °C x 0.65
60 °C x 0.60

Notes:

- Trip Time factor is a guideline that indicates ambient temperature effect on trip times at various overload values.

CMBA/CLBA-Series

THERMAL CIRCUIT PROTECTORS

The CMBA/CLBA-Series features automatic cycling and resetting thermal protection capabilities with the same performance as its traditional push-to-reset counterparts.



Product Highlights:

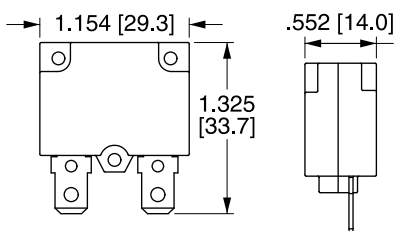
- CMBA: 3-20A, 125, 250VAC, 32VDC
- CLBA: 3-40A, 125, 250VAC, 32VDC
- 2500 VAC/1 minute
- 60°C Max Operating Temperature
- 2500A @ 32VDC Interrupting Capacity
- 100M ohms Insulation Resistance
- Voltage drop <0.25 V
- UL, cUL, TUV

Applications:

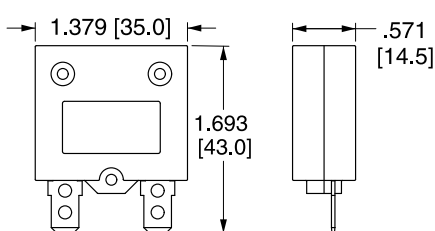
- Household Appliances
- Transportation
- Power Strips
- Medical Equipment
- Audio Visual Equipment
- Power Supplies
- ROHS Complaint

Dimensional Specifications: in. [mm]

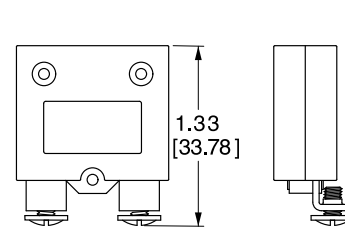
CMBA Construction



CLBA Construction: (3-40A)



(50A, 60A)



CMBA - **10** **3** - **NN** **F** **N** **N** - **B** - **A**

1 Series 2 Rating 3 Voltage 4 Mounting 5 Bushing 6 Mounting Nut 7 Indicator Plate 8 Button Color 9 Terminal

1 SERIES

CMBA

2 RATING

03	3 amps	10	10 amps
04	4 amps	12	12 amps
05	5 amps	13	13 amps
06	6 amps	15	15 amps
07	7 amps	18	18 amps
08	8 amps	20	20 amps

3 VOLTAGE

3 125-250VAC/ 32 VDC

4 MOUNTING

NN Plug In

5 BUSHING

F None

6 MOUNTING NUT

N N/A

7 INDICATOR PLATE

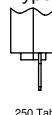
N N/A

8 BUTTON COLOR

B Flush Black

9 TERMINAL

A Type A



CLBA - **10** **3** - **NN** **F** **N** **N** - **B** - **A**

1 Series 2 Rating 3 Voltage 4 Mounting 5 Bushing 6 Mounting Nut 7 Indicator Plate 8 Button Color 9 Terminal

1 SERIES

CLBA

2 RATING

03	3 amps	15	15 amps
04	4 amps	18	18 amps
05	5 amps	20	20 amps
06	6 amps	25	25 amps
07	7 amps	30	30 amps
08	8 amps	35	35 amps
10	10 amps	40	40 amps
12	12 amps	50 ¹	50 amps
13	13 amps	60 ¹	60 amps

3 VOLTAGE

3 125-250VAC/ 32 VDC

4 MOUNTING

NN Plug In

5 BUSHING

F None

6 MOUNTING NUT

N N/A

7 INDICATOR PLATE

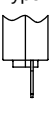
N N/A

8 BUTTON COLOR

B Flush Black

9 TERMINAL²

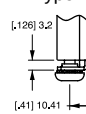
A Type A



F Type F



H Type H



J Type J



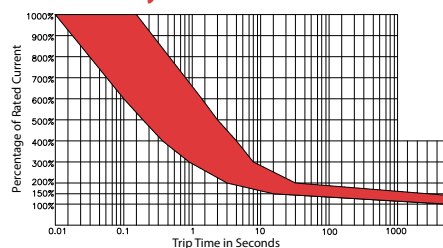
R Type R



Notes:

- Available with termination options F, H, J and R only.
- Type A termination not available for 50A and 60A ratings.

Time Delay



Overload	Trip Time
100%	No Trip
150%	Trip in 1 hr
200%	4.0 ~ 40 sec.
300%	0.9 ~ 8.0 sec.
400%	0.42 ~ 5.0 sec.
500%	0.25 ~ 3.0 sec.
600%	0.01 ~ 1.8 sec.

Time Trip Factor ¹	
-10 °C	x 1.70
-5 °C	x 1.60
0 °C	x 1.50
5 °C	x 1.40
10 °C	x 1.30
15 °C	x 1.20
20 °C	x 1.10
25 °C	x 1.00

Time Trip Factor ¹	
30 °C	x 0.90
35 °C	x 0.85
40 °C	x 0.80
45 °C	x 0.75
50 °C	x 0.70
55 °C	x 0.65
60 °C	x 0.60

Notes:

- Trip Time factor is a guideline that indicates ambient temperature effect on trip times at various overload values.

There are several catalogs available featuring complete details on all Carling Technologies products. Below is a list of useful information such as catalogs, brochures and videos. Please visit our website at **carlingtech.com** or scan the QR codes below for complete details.

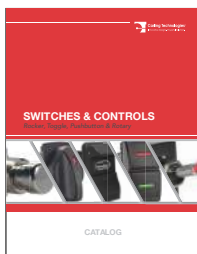
www.carlingtech.com



Watch Company Profile Video



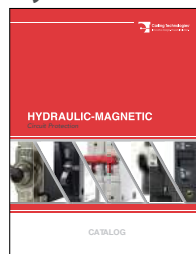
Switches & Controls



catalog

Complete line and ordering details for Switches & Control products including Rocker, Toggle, Pushbutton, and Rotary style switches.

Hydraulic-Magnetic



catalog

Complete line and ordering details for all hydraulic-magnetic circuit breakers.

Thermal



catalog

Complete line and ordering details for all thermal circuit breakers.

GFCI / ELCI



catalog

Complete line and ordering details for all GFCIs/ELCIs.

Marine



catalog



brochure

Complete line of ELCIs, thermal and hydraulic-magnetic circuit breakers specific for marine applications.

On-Off Highway



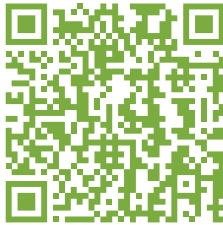
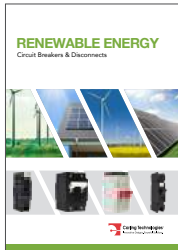
catalog



brochure

Complete line of switches, controls and custom solutions specific for on-off highway applications.

Renewable Energy



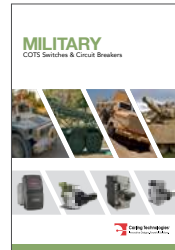
catalog



brochure

Complete line of circuit breakers and disconnect products specific for renewable energy applications.

Military



catalog



brochure

Complete line of COTS (*Commercial-Off-The-Shelf*) switches and circuit breakers specific for military applications.

Telecom/Datacom



catalog



brochure

Complete line of hydraulic-magnetic circuit breakers specific for telecom/datacom applications.

Industrial Automation



brochure

Complete line of switches and circuit breakers specific for industrial automation & controls applications.

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.



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.

To view all of Carling's environmental, quality, health & safety certifications please visit www.carlingtech.com/environmental-certifications

Worldwide Headquarters

Carling Technologies, Inc.
60 Johnson Avenue, Plainville, CT 06062-1177
Phone: 860.793.9281 **Fax:** 860.793.9231
Email: sales@carlingtech.com www.carlingtech.com

Northern Region Sales Office: nrsm@carlingtech.com
Southeast Region Sales Office: sersm@carlingtech.com
Midwest Region Sales Office: mrsrm@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

