

BD-Series

BATTERY DISCONNECT POWER SWITCH

Carling Technologies BD-Series battery disconnect switch is designed to minimize battery drain, ensure maintenance personnel safety, and when used in conjunction with a padlock, provide vehicle theft protection.



Resources:

[Configure a Complete Part](#)

[Download CAD & Sales Drawing >](#)

[Watch Product Video](#)



Product Highlights:

- Single Pole, 100-300 Amps
- 12VDC/24VDC
- IP67 Sealing Protection
- Red, Yellow or Black Ergonomic Knob
- Lock Compatible

Typical Applications:

- On/Off-Highway Equipment
- Military
- Marine



Carling Technologies®

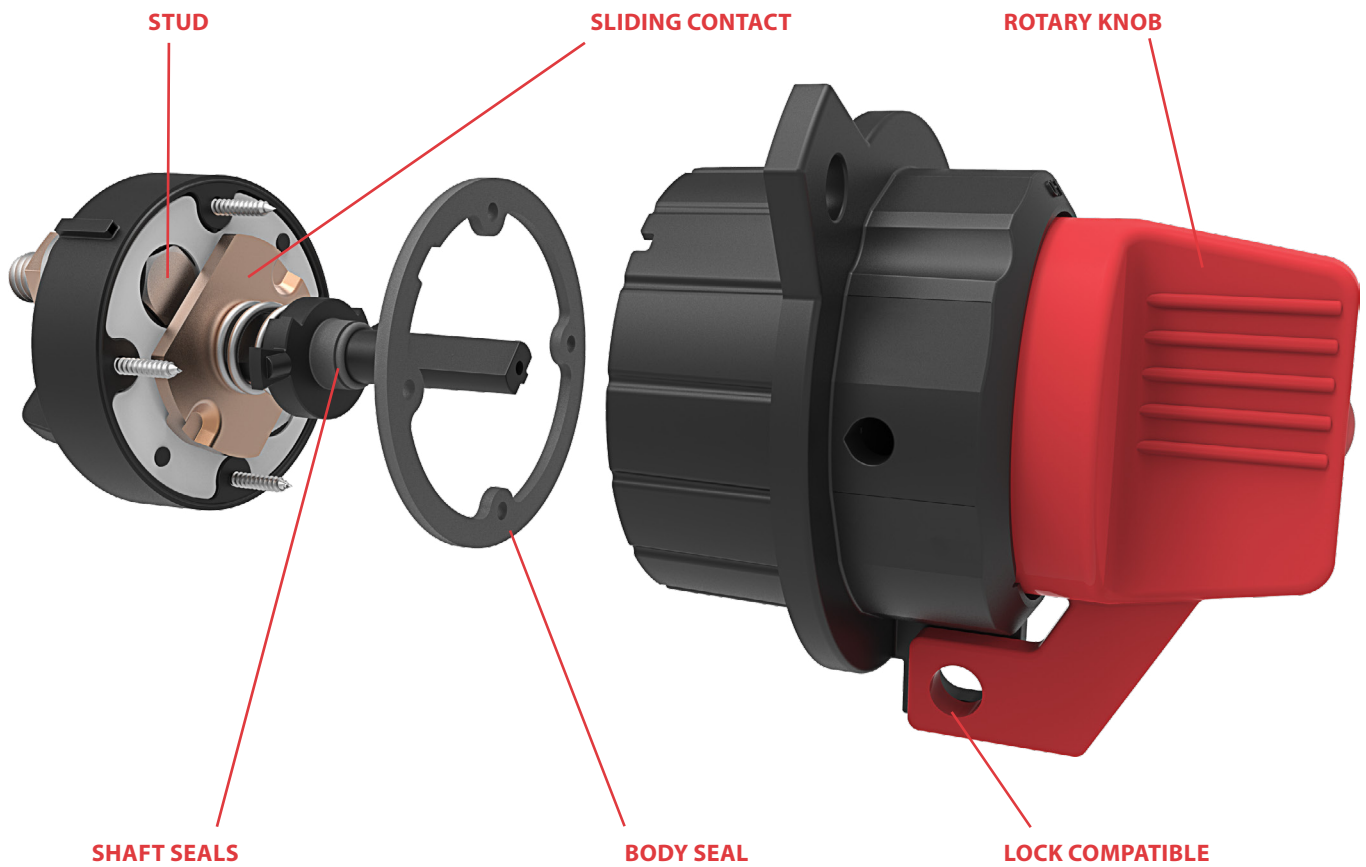
Innovative Designs. Powerful Solutions.

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BD-Series

DESIGN FEATURES



Electrical

Application Voltage	DC Rated voltage: 12VDC / 24VDC Range of operating voltage: 12VDC: min 9VDC, max 16VDC; 24VDC: min 18VDC, max 32VDC
Current Ratings	12VDC/24VDC: rated 100A, max 300A (M10 Studs); 12VDC/24VDC: rated 300A (M14 Studs)
Intermittent Current	24VDC/1500A, 3 seconds on, 60 seconds off, 10 cycles: voltage drop should not exceed 400mV between main terminals. 28V/1500A/30 seconds: voltage drop should not exceed 400mV 28V/2000A/5 seconds followed by 28V/750A/30 seconds followed by 28V/250A/24 hours: voltage drop should not exceed 100mV
Dielectric Strength	50HZ, 550VAC for 1 minute between electrically / isolated terminals in main circuit; between terminals of main circuit, knob and enclosure.
Insulation Resistance	Minimum of 100 Megohms 1 min @ 500VDC
Temperature Rise	Terminal should not exceed 60°C above ambient.
Endurance	For M10 Studs: 2 seconds ON and 2 seconds OFF per operation, load with rated current & voltage. 12V test @ 14V±0.1V; 24V test @ 28V±0.2V. 50,000 cycles: 100A current; 20,000 cycles: 200A current; 3,000 cycles: 250A current 2 seconds ON and 6 seconds OFF per operation, load with rated current & voltage. 12V test @ 14V±0.1V; 24V test @ 28V±0.2V 3,000 cycles: 300A current For M14 Studs: 2 seconds ON and 6 seconds OFF per operation, load with rated current & voltage. 12V test @ 14V±0.1V; 24V test @ 28V±0.2V 3,000 cycles: 300A current

Mechanical

Handling Shock	Fully functional after 3 drops from 1000 mm height. Surface damage may occur.
Endurance	More than 100,000 cycles without load

Environmental

Operating Temp.	-40 °C to +85 °C.
Moisture Resistance	IEC 60068-2-38 or G/T 2423.34, Test Z/AD: Composite temperature/humidity cycle test, ten 24-hour cycles @ -10°C to +65°C, ≤80-96% RH.
Thermal Cycling	IEC 60068-2-14 or GB/T 2423.22, Test Nb, 25 Cycles -40°C to +85°C
Thermal Shock	IEC 60068-2-14 or GB/T 2423.22, Test Na (5 cycles @ -55°C to +25°C to +85°C to +25°C)
Thermal Resistance	IEC 60068-2-1 or GB/T 2423.1 Cold: Test A, operate 8 hours @ -40°C IEC 60068-2-2 or GB/T 2423.2 Heat: Test B, operate 8 hours @ +85°C
Vibration	IEC 60068-2-34 or GB/ T 2423.11, 10-500 Hz, Random vibration test for 8 hours in each of the 3 mutually perpendicular axes. 25Gs @ Z axes, 12.5Gs @ X/Y axes. powered.
Salt Spray	IEC 60068-2-11 or GB/T 2423.17, 48 hours
Fire and Smoke	IEC 60695-11-10 or GB/T 2408, HB
Dust / Waterproof	IEC 60529 or GB4208, IP67
Chemical Splash	Gasoline, Diesel, Motor Oil, Brake Fluid, Ammonia, Armor All
UV Protection	ASTM G155-05a, cycle 11, 300 hr Xenon Arc, 1.4W / (m2 Nm), wavelength 420 Nm

Physical

Number of Poles	1 pole
Wiring Terminals	Line / Load terminal: M10 brass nuts Torque value: M10 (6-8 Nm); M14 (10-14 Nm)
Mounting	M8 Iron nut, torque value: (10-15 Nm)
Torque Operation	1.0-3.0 Nm
Body Color	Black
Actuator Color	Handle color optional, with white color "Arrow" legends.
Weight	(M10 Studs): 340±10 g / set; (M14 Studs): 385±10 g / set
Material	Base (PBT glass filled), Bracket & Knob (nylon glass filled), Studs (Copper + Tin plating), Nuts (Brass)

*Manufacturer reserves the right to change product specification without prior notice.
GPS-0001 Rev: D

BD **A** **10** - **R** **A**

1 Series 2 Rating 3 Termination 4 Knob Color 5 Legend

1 SERIES

BD Battery Disconnect Power Switch

2 RATING / CYCLES

A 100A @ 24VDC: 50,000 Cycles
 200A @ 24VDC: 20,000 Cycles
 250A @ 24VDC: 3,000 Cycles
B 300A @ 24VDC: 3,000 Cycles

Note: Refer to General Specifications for test parameters.

3 TERMINATION

10 M10 Stud
14 M14 Stud

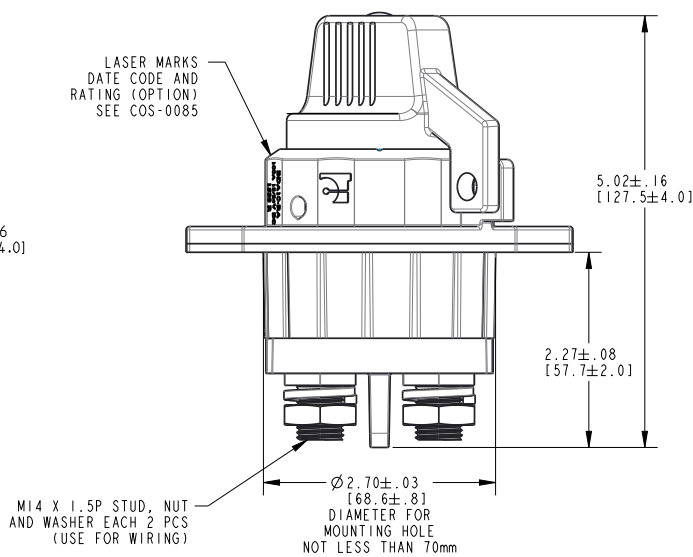
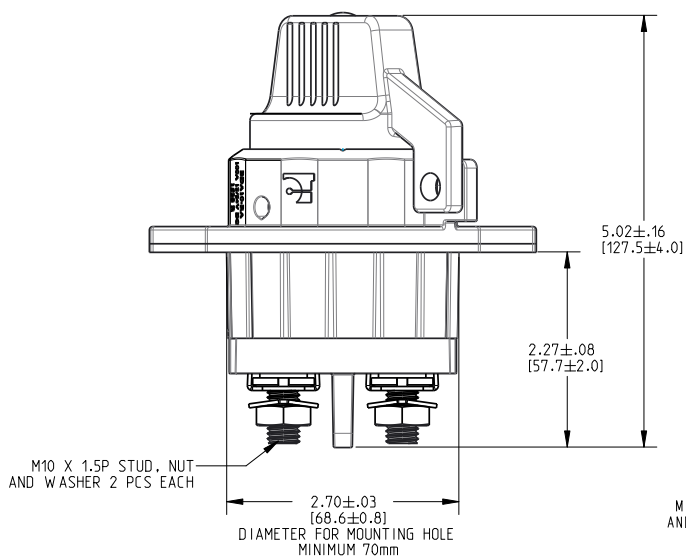
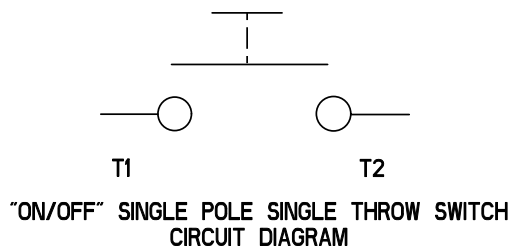
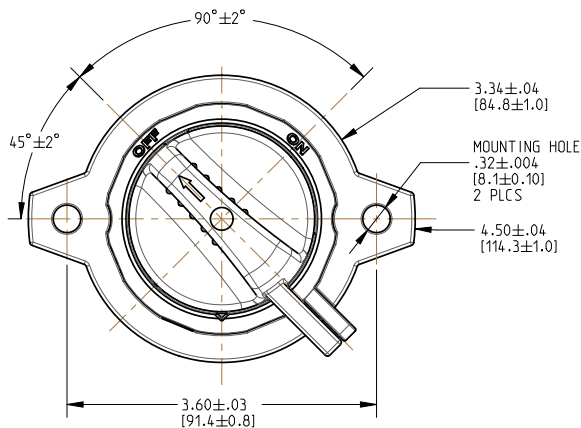
4 KNOB COLOR

R Red
Y Yellow
B Black

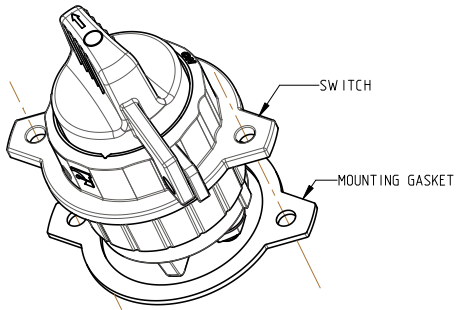
5 LEGEND

A Arrow Legend, White Color

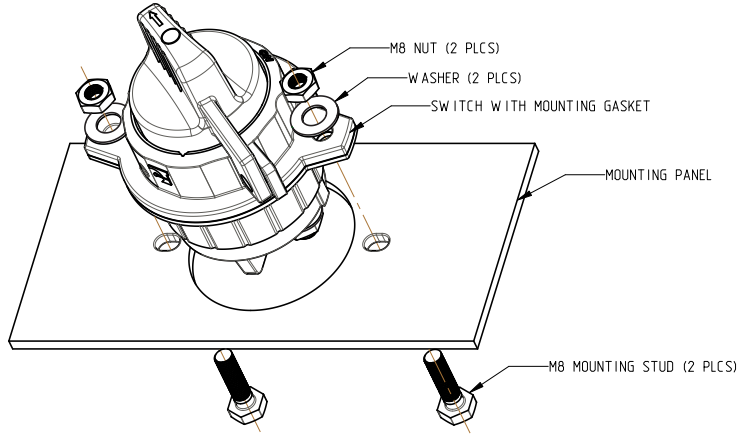
Dimensional Specifications: in. [mm]



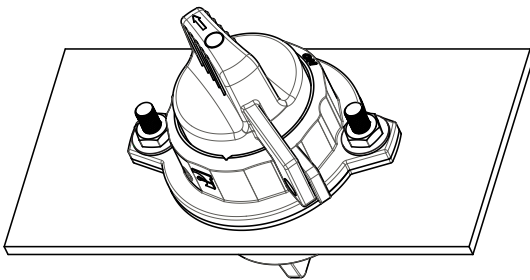
Mounting Method 1: in. [mm]



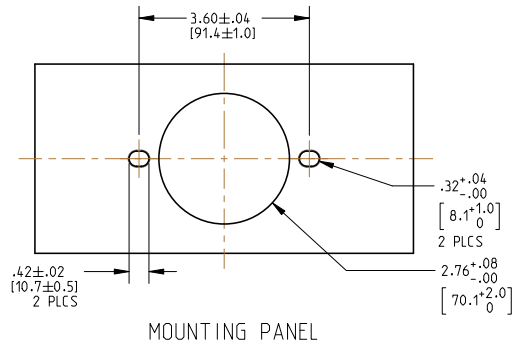
MOUNTING STEP 1: ATTACH MOUNTING GASKET WITH THE SWITCH ORIENTATION AS SHOWN



MOUNTING STEP 2: ORIENT AS SHOWN AND INSTALL THE SWITCH IN MOUNTING PANEL HOLE; THEN INSERT STUDS AND WASHERS

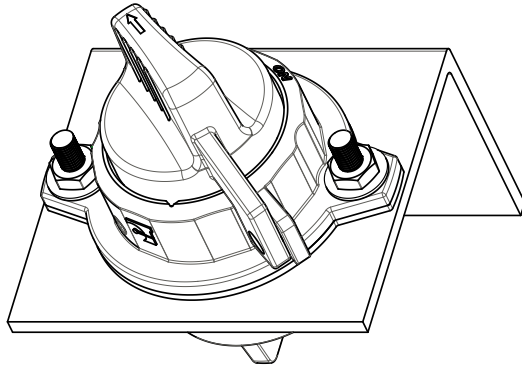


MOUNTING STEP 3: TIGHTEN 2PCS M8 NUTS (REC. TORQUE [10-15Nm])

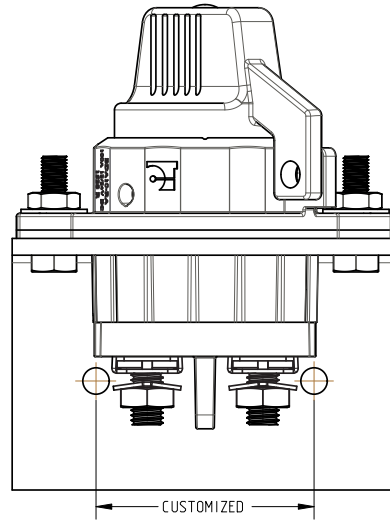


Notes:
 1 Switch can be mounted horizontally or vertically.

Mounting Method 2: in. [mm]



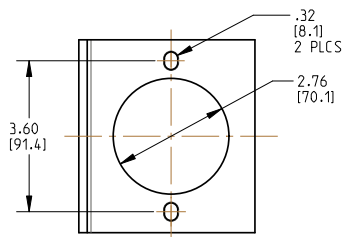
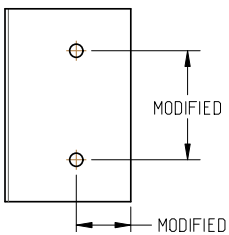
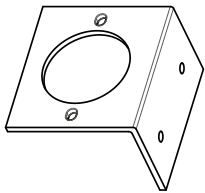
MOUNTING STEP 1: INSTALL SWITCH WITH MOUNTING BRACKET ORIENTATION AS SHOWN



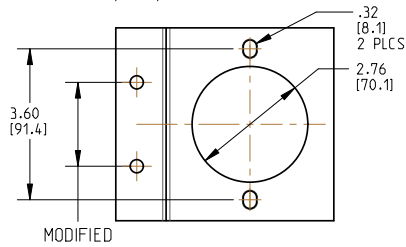
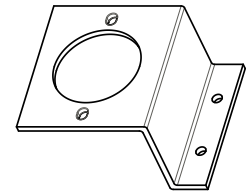
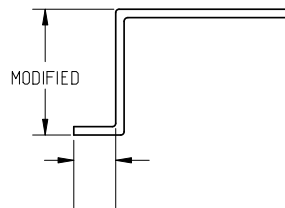
MOUNTING BRACKET CAN BE MODIFIED AS BELOW

MOUNTING STEP 2: ORIENT AS SHOWN AND INSTALL THE SWITCH IN CUSTOMER PANEL.

"L" SHAPE MOUNTING BRACKET



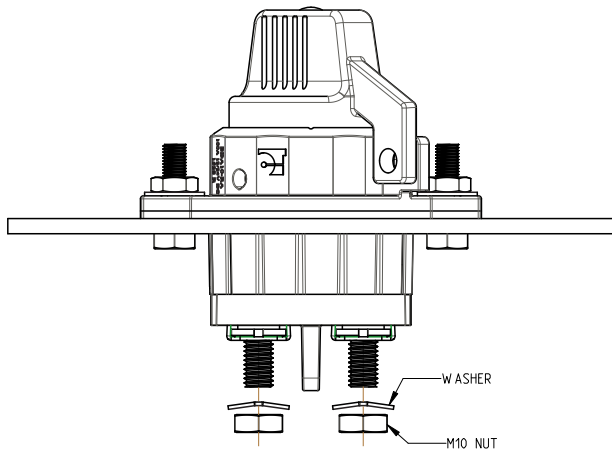
"Z" SHAPE MOUNTING BRACKET



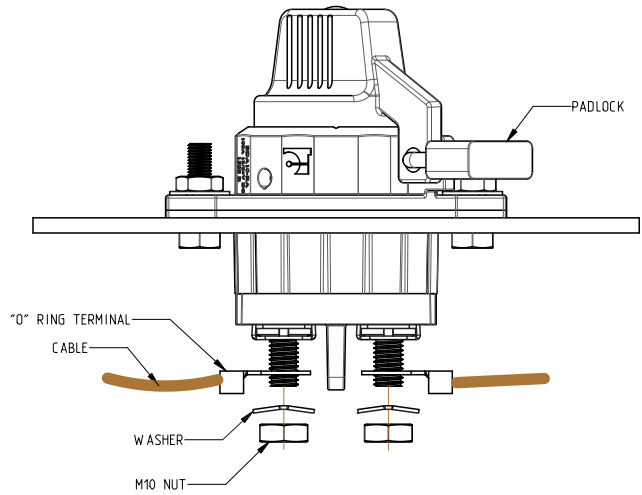
Notes:

- 1 Switch can be mounted horizontally or vertically.

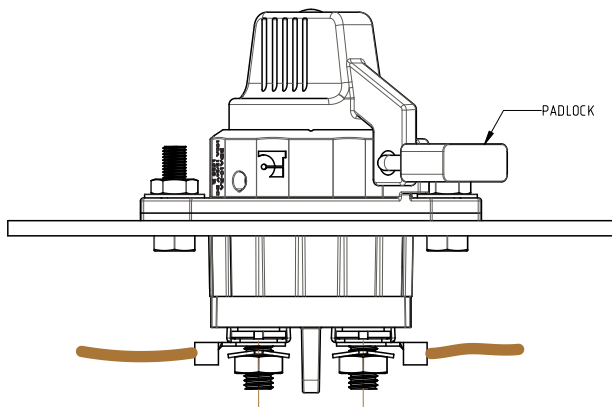
Wiring: in. [mm]



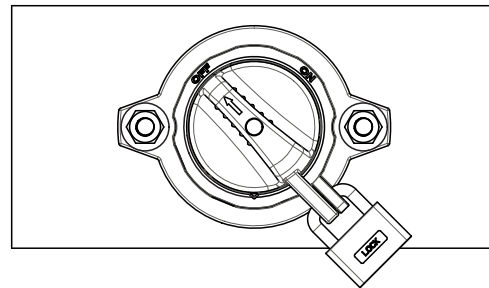
WIRING 1: DISCONNECT WASHERS AND NUTS



WIRING 2: ATTACH 2PCS M10 "0" RING TERMINALS AS SHOWN, THEN RE-FASTEN WASHERS AND NUTS



WIRING 3: TIGHTEN 2PCS BRASS M10 NUTS (REC. TORQUE (6-8Nm))



WHEN USED IN CONJUNCTION WITH A PAD LOCK, SWITCH CAN BE LOCKED IN THE "OFF" POSITION AS A SAFETY MEASURE

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

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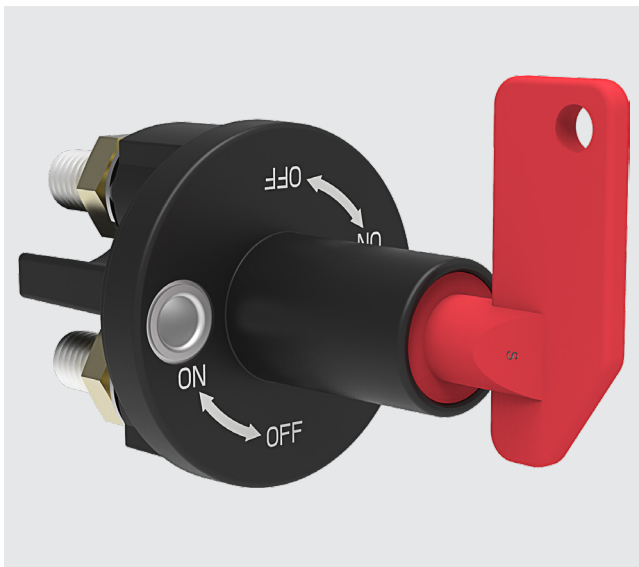
Innovative Designs. Powerful Solutions.

BD1-SERIES

BD1-Series

BATTERY DISCONNECT POWER SWITCH

Carling Technologies BD1-Series battery disconnect switch is designed to minimize battery drain, ensure maintenance personnel safety. Additionally, the optional, removable key adds an extra layer of security to protect against vehicle theft.



Resources:

[Configure a Complete Part](#)

[Download CAD & Sales Drawing >](#)

[Watch Product Video](#)



Product Highlights:

- 250 Amps
- 12 or 24VDC
- Permanent or Removable Key Options
- IP67 Sealing Protection (when key is assembled)
- Choice of 19mm or 27 mm Length Studs

Typical Applications:

- On/Off-Highway Equipment
- Military
- Marine



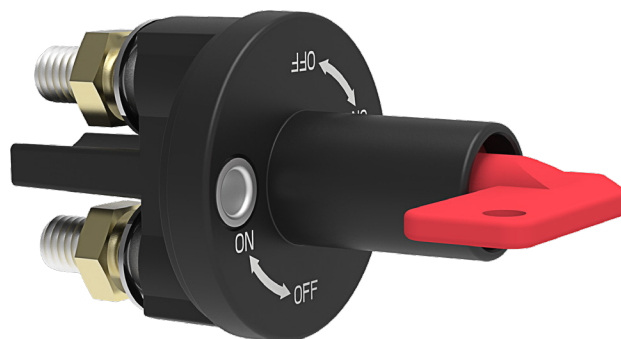
BD1-Series

DESIGN FEATURES

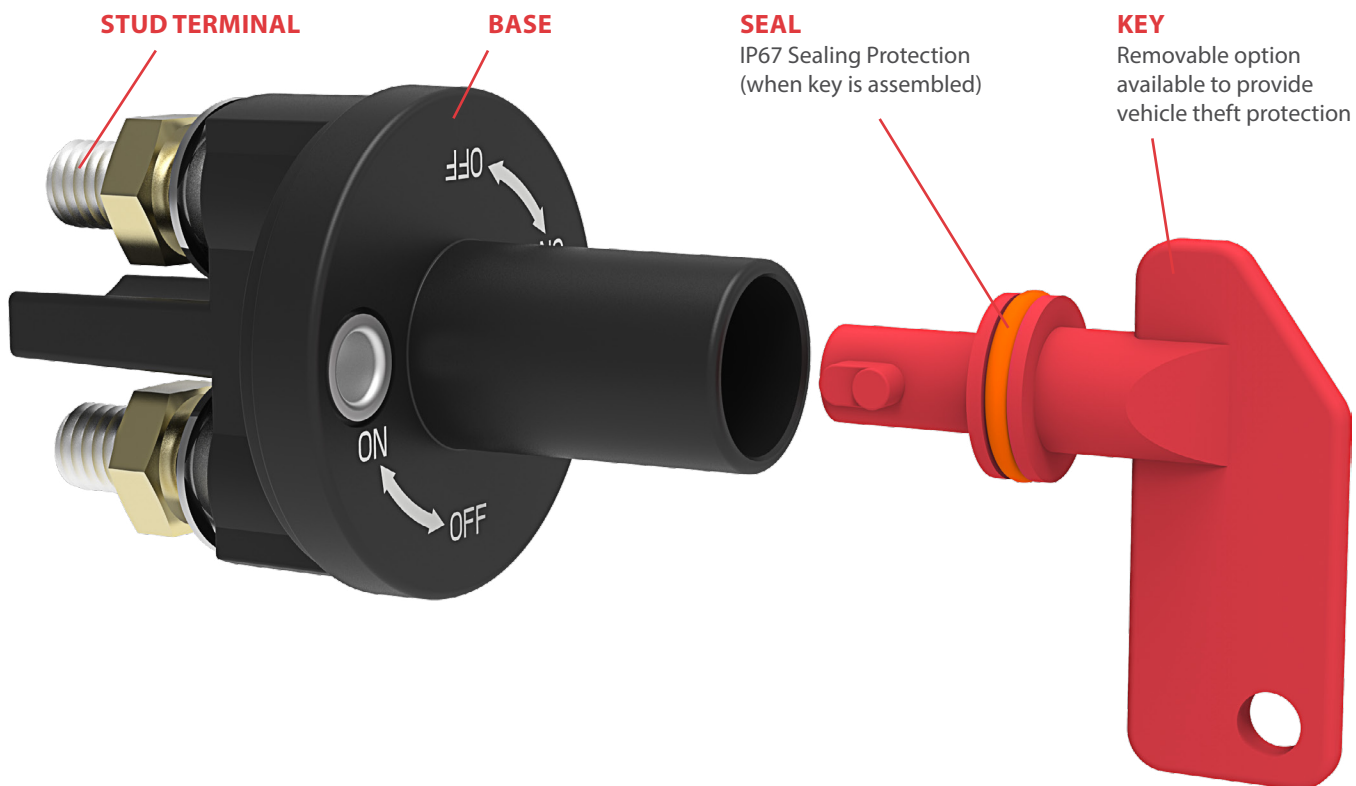
OFF POSITION



ON POSITION



OFF POSITION WITH KEY REMOVED



Electrical

Application Voltage	DC Rated voltage: 12VDC / 24VDC Range of operating voltage: 12VDC: min 9VDC, max 16VDC; 24VDC: min 18VDC, max 32VDC
Current Ratings	250A@ 12VDC/24VDC
Contact Voltage Drop	Voltage drop \leq 100mV after 300 sec. ON at 200% rated current prior to endurance test; Voltage drop \leq 500mV after 5 msec. ON at 1600A max. current prior to endurance test.
Dielectric Strength	50HZ, 1200VAC for 1 minute between electrically / isolated terminals in main circuit; between terminals of main circuit, knob and enclosure.
Insulation Resistance	Minimum of 100 Megohms 1 min @ 500VDC.
Temperature Rise	Terminal should not exceed 90°C above ambient at rated current after endurance test.
Endurance	2 seconds ON and 3 seconds OFF per operation, load with rated current & voltage. 12V test @ 14V; 24V test @ 28V. Total 20,000 cycles: 250A current ratings, including 4,000 cycles respectively at -40 °C \pm 2 and +85 °C \pm 2; 12,000 cycles at 23 °C \pm 2.
Overload	500A: 300 seconds ON; 1600A: 30 seconds ON.

Mechanical

Handling Shock	Fully functional after 3 drops from 1000 mm height. Surface damage may occur.
Endurance	Minimum 50,000 cycles without load.

Environmental

Operating Temp.	-40 °C to +85 °C.
Moisture Resistance	IEC 60068-2-38 or G/T 2423.34, Test Z/AD: Composite temperature/humidity cycle test, ten 24-hour cycles @ -10°C to +65°C, \leq 80-96% RH.
Thermal Cycling	IEC 60068-2-14 or GB/T 2423.22, Test Nb, 25 Cycles -40°C to +85°C.
Thermal Shock	GB/T 28046.4-2011, 5.3.2, Test Na (100 cycles @ -40°C to +25°C to +85°C to +25°C).
Thermal Resistance	ISO 16750-4 or GB/T 28046.4 Cold: Test A, work 24 hours @ -40°C ISO 16750-4 or GB/T 28046.4 Heat: Test B, work 48 hours @ +85°C.
Vibration	IEC 60068-2-34 or GB/ T 2423.11, 10-500 Hz, Random vibration test for 8 hours in each of the 3 mutually perpendicular axes. 25Gs @ Z axes, 12.5Gs @ X/Y axes, powered.
Salt Spray	IEC 60068-2-11 or GB/T 2423.17, 48 hours.
Fire and Smoke	IEC 60695-11-10 or GB/T 2408, HB (horizontal burning) and V0 (vertical burning).
Sealing	IEC 60529 or GB4208, IP 67
Chemical Splash	Gasoline, Diesel, Motor Oil, Brake Fluid, Ammonia, Mixture of previous five chemicals.
UV Protection	ASTM G155-05a, cycle 11, 300 hr Xenon Arc, 1.4W / (m2 Nm), wavelength 420 Nm.

Physical

Number of Poles	1 pole
Wiring Terminals	Line / Load terminal: brass nuts Torque value: M10 (10-15 Nm).
Mounting	M6/M7 bolt and nut, torque value: 4-5 Nm.
Torque Operation	0.5-1.0 Nm.
Body Color	Black
Actuator Color	Red
Weight	Approximately 165g
Material	Base & Bracket & Key (glass filled nylon), Studs (Tin plated brass), Nuts (Brass) Locking Washers (SUS304).

*Manufacturer reserves the right to change product specification without prior notice.
GPS-0010 Rev: B

BD1 - 1 A 2

1 Series
2 Rating
3 Key Style
4 Termination

1 SERIES

BD1 Battery Disconnect Power Switch (1 Pole)

3 KEY STYLE

A Removable¹
B Non-Removable

2 RATING / CYCLES

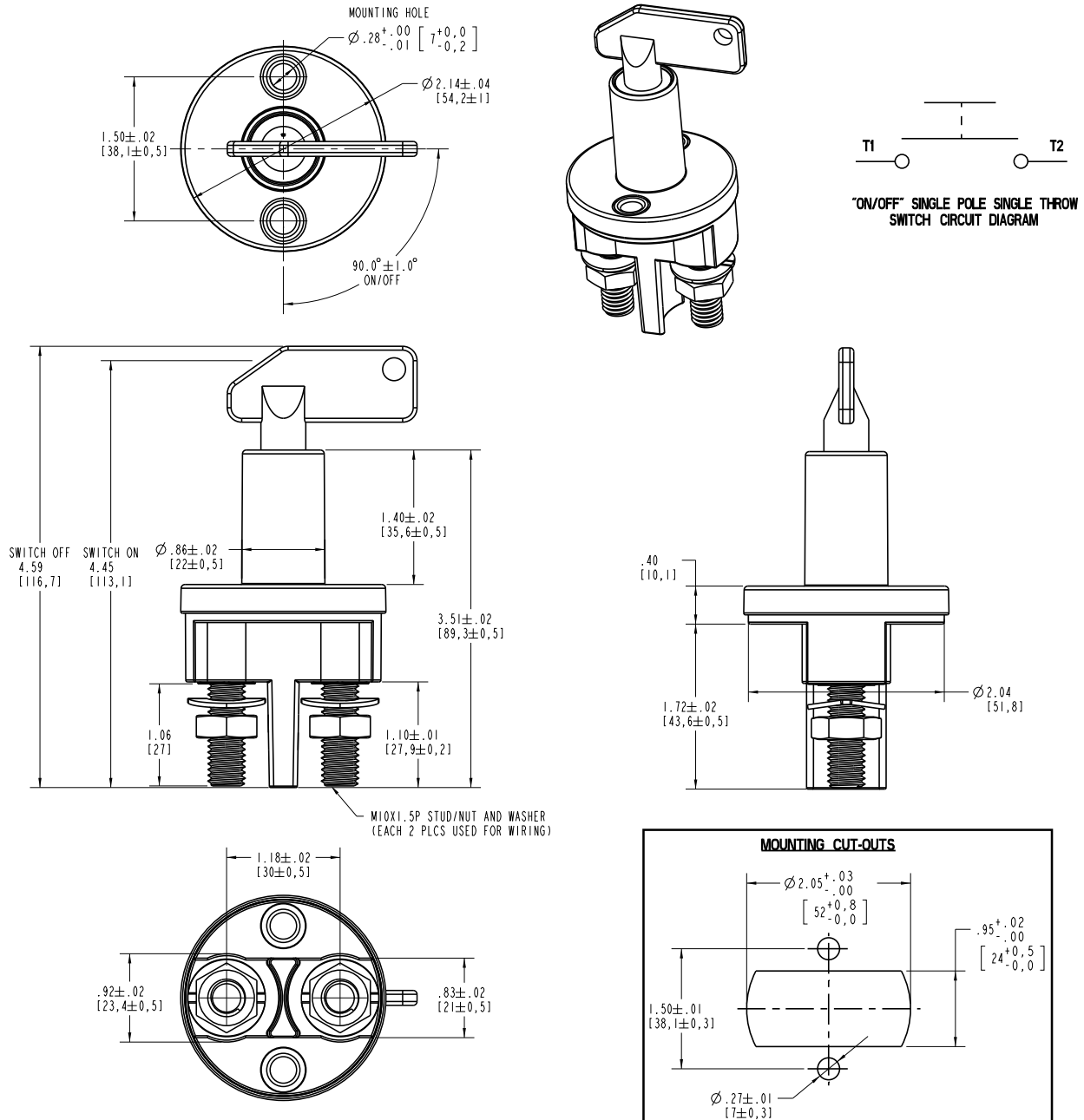
1 250A @ 12/24VDC

4 TERMINATION

1 M10 Stud 19 mm length
2 M10 Stud 27 mm length

Notes:
 1 Individual Keys separately available, reference part number 308-39943-001.

Dimensional Specifications: in. [mm]



Notes:
 1 Torque for mounting nut: M6 or M7 (4-5 nm)
 2 Torque for wiring nut: M10 (10-15 nm)
 3 Switch can be mounted vertically or horizontally

CO5-0099 Rev: A
 CLA-0154 Rev: A

Authorized Sales Representatives and Distributors

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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

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Innovative Designs. Powerful Solutions.