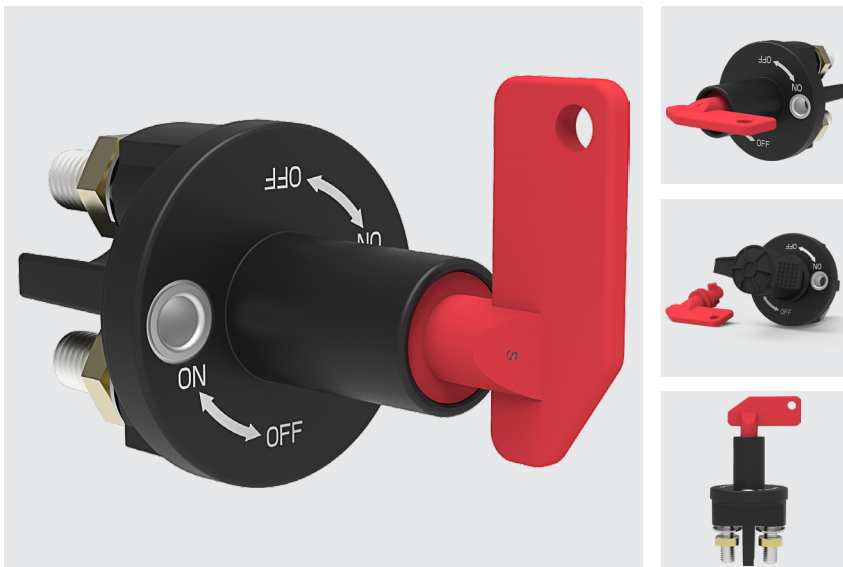


# BD1-Series

## 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.



### Product Highlights:

- 250 Amps
- 12 or 24VDC
- Permanent or Removable Key Options
- Fully Sealed to IP67, Including Below the Panel (when key is assembled)
- Choice of 19mm or 27mm Length Studs
- Switch Cap Available

### Typical Applications:

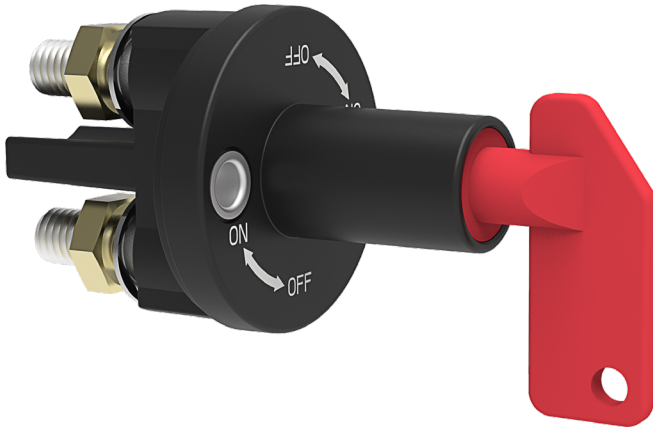
- On/Off-Highway Equipment
- Military
- Marine



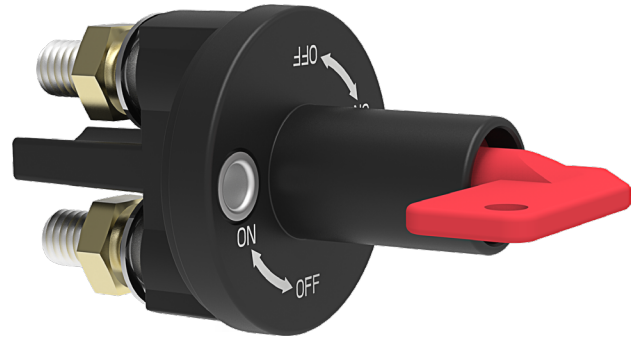
# BD1-Series

## DESIGN FEATURES

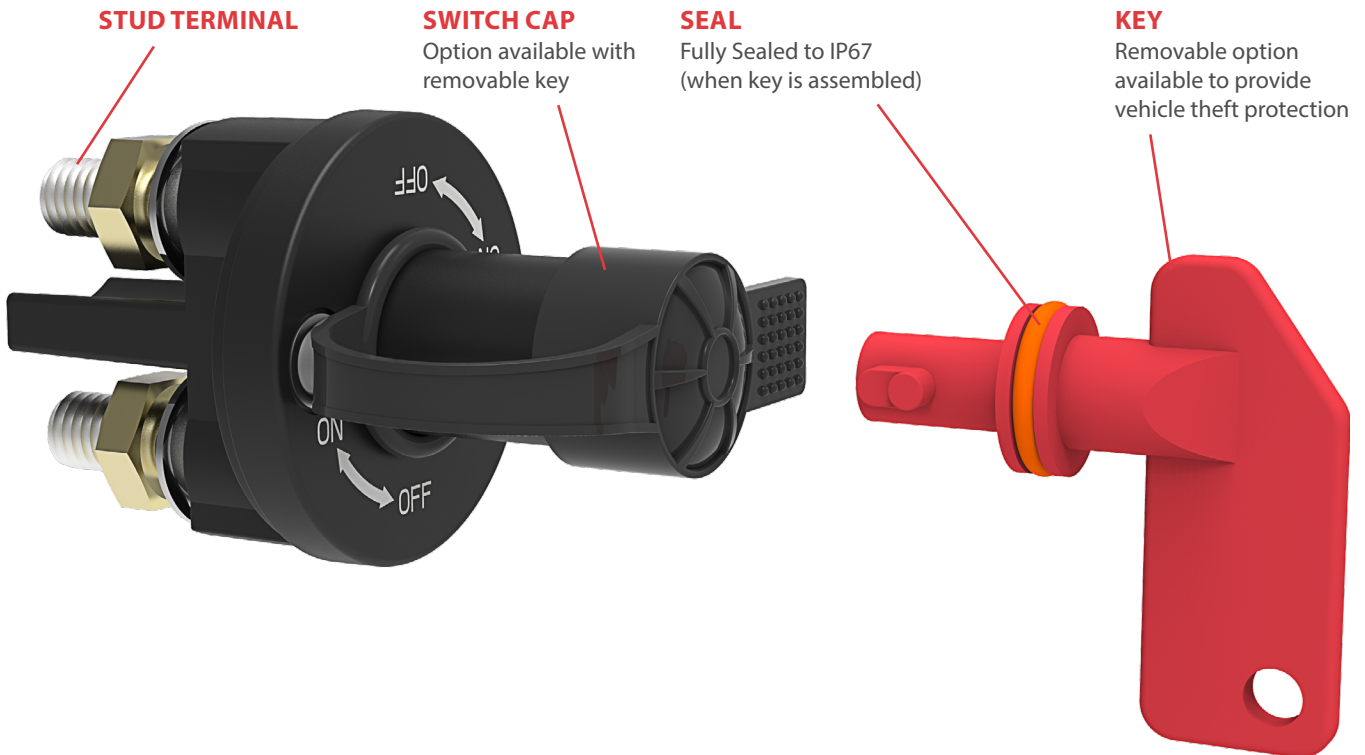
**OFF POSITION**



**ON POSITION**



**OFF POSITION WITH KEY REMOVED**



**STUD TERMINAL**

**SWITCH CAP**

Option available with removable key

**SEAL**

Fully Sealed to IP67 (when key is assembled)

**KEY**

Removable option available to provide vehicle theft protection

## 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.
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## 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	IP67, for above and below-panel components of actual switch only
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 / (m <sup>2</sup> 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 /CAP

1 Series      2 Rating      3 Key Style      4 Termination      5 Accessory

**1 SERIES**  
**BD1** Battery Disconnect Power Switch (1 Pole)

**3 KEY STYLE**  
**A** Removable      **B** Non-Removable

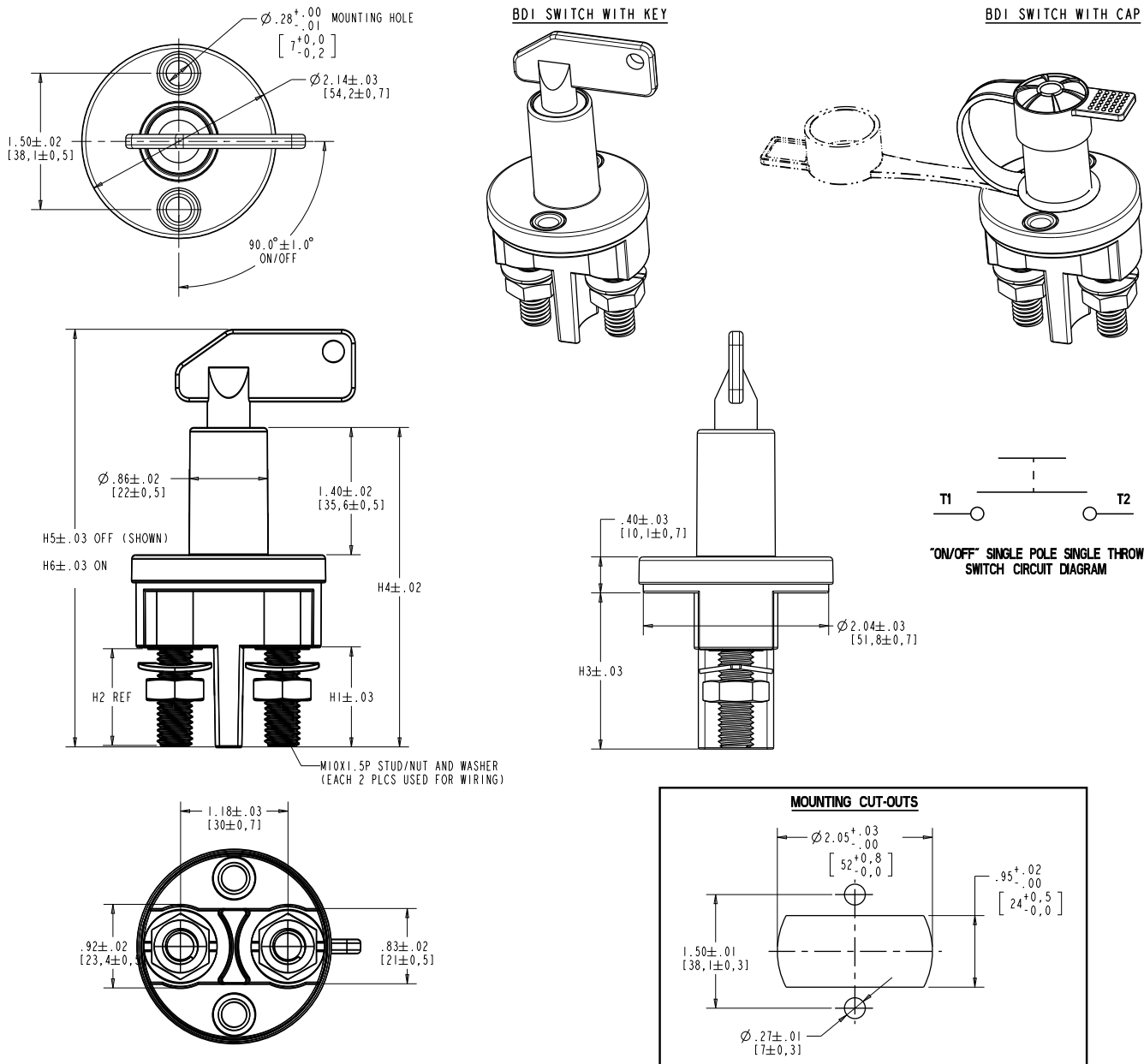
**2 RATING / CYCLES**  
**1** 250A @ 12/24VDC  
**2** 250A @ 12/24VDC, UL 558

**4 TERMINATION**  
**1** M10 Stud 19 mm length      **2** M10 Stud 27 mm length

Notes:  
 1 The Cap accessory is only available for the removable key type.

**5 ACCESSORY 1**  
**BLANK** Without Cap      **/CAP** With Cap

## 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

COS-0099 Rev: B  
 CLA-0154 Rev: C