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.

**BD1-Series**
BATTERY DISCONNECT POWER SWITCH

**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

**Resources:**
- Configure a Complete Part
- Download CAD & Sales Drawing
- Watch Product Video

Carling Technologies®

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Phone: 860.793.9281 Fax: 860.793.9231

www.carlingtech.com
**BD1-Series**

**DESIGN FEATURES**

**OFF POSITION**

**ON POSITION**

**OFF POSITION WITH KEY REMOVED**

- **STUD TERMINAL**
  - Option available with removable key

- **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

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### Electrical

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

### Environmental

<table>
<thead>
<tr>
<th>Operating Temp.</th>
<th>-40 °C to +85 °C.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture Resistance</td>
<td>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.</td>
</tr>
<tr>
<td>Thermal Cycling</td>
<td>IEC 60068-2-14 or GB/T 2423.22, Test Nb, 25 Cycles -40°C to +85°C.</td>
</tr>
<tr>
<td>Thermal Shock</td>
<td>GB/T 28046.4-2011, 5.3.2, Test Na (100 cycles@ -40°C to +25°C to +85°C to +25°C).</td>
</tr>
<tr>
<td>Thermal Resistance</td>
<td>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.</td>
</tr>
<tr>
<td>Vibration</td>
<td>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.</td>
</tr>
<tr>
<td>Salt Spray</td>
<td>IEC 60068-2-11 or GB/T 2423.17, 48 hours.</td>
</tr>
<tr>
<td>Fire and Smoke</td>
<td>IEC 60695-11-10 or GB/T 2408, HB (horizontal burning) and V0 (vertical burning).</td>
</tr>
<tr>
<td>Sealing</td>
<td>IP67, for above and below-panel components of actual switch only</td>
</tr>
<tr>
<td>Chemical Splash</td>
<td>Gasoline, Diesel, Motor Oil, Brake Fluid, Ammonia, Mixture of previous five chemicals.</td>
</tr>
<tr>
<td>UV Protection</td>
<td>ASTM G155-05a, cycle 11, 300 hr Xenon Arc, 1.4W / (m² Nm), wavelength 420 Nm.</td>
</tr>
</tbody>
</table>

### Mechanical

| Handling Shock      | Fully functional after 3 drops from 1000 mm height. Surface damage may occur. |

### Physical

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

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

GPS-0010 Rev: B

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BD1 - 1 A 2 /CAP

1 SERIES
BD1 Battery Disconnect Power Switch (1 Pole)

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

3 KEY STYLE
A Removable
B Non-Removable

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

5 ACCESSORY
BLANK Without Cap
/CAP With Cap

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

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

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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 ISO9001 and IATF16949 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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