

| Application                                                                                                                                                                                                                                                                                                                                                                     | Uninterrupted                  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| Thermal Current Rating ( $I_{th}$ )                                                                                                                                                                                                                                                                                                                                             | 200A                           |
| Intermittent Current Rating:                                                                                                                                                                                                                                                                                                                                                    |                                |
| 30% Duty                                                                                                                                                                                                                                                                                                                                                                        | 365A                           |
| 40% Duty                                                                                                                                                                                                                                                                                                                                                                        | 315A                           |
| 50% Duty                                                                                                                                                                                                                                                                                                                                                                        | 285A                           |
| 60% Duty                                                                                                                                                                                                                                                                                                                                                                        | 260A                           |
| 70% Duty                                                                                                                                                                                                                                                                                                                                                                        | 240A                           |
| Rated Fault Current Breaking Capacity ( $I_{cn}$ ) 5ms Time Constant:<br>(in accordance with UL583 <sup>1</sup> )                                                                                                                                                                                                                                                               |                                |
| SD200                                                                                                                                                                                                                                                                                                                                                                           | 500A at 48V D.C.               |
| SD200B                                                                                                                                                                                                                                                                                                                                                                          | 500A at 96V D.C.               |
| Maximum Recommended Contact Voltages ( $U_0$ ):                                                                                                                                                                                                                                                                                                                                 |                                |
| SD200                                                                                                                                                                                                                                                                                                                                                                           | 48V D.C.                       |
| SD200B                                                                                                                                                                                                                                                                                                                                                                          | 96V D.C.                       |
| Typical Voltage Drop per pole<br>across New Contacts at 200A                                                                                                                                                                                                                                                                                                                    | 40mV                           |
| Durability:                                                                                                                                                                                                                                                                                                                                                                     |                                |
| Manual-Mechanical Operations <sup>2</sup>                                                                                                                                                                                                                                                                                                                                       | >1 x 10 <sup>4</sup> Cycles    |
| Electro-Mechanical Operations <sup>3</sup>                                                                                                                                                                                                                                                                                                                                      | >3 x 10 <sup>6</sup> Cycles    |
| Coil Voltage Available ( $U_s$ ) <sup>4</sup>                                                                                                                                                                                                                                                                                                                                   | From 6 to 240V A.C./D.C.       |
| Coil Power Dissipation:                                                                                                                                                                                                                                                                                                                                                         |                                |
| Highly Intermittent Rated Types                                                                                                                                                                                                                                                                                                                                                 | 20 - 30 Watts                  |
| Intermittently Rated types                                                                                                                                                                                                                                                                                                                                                      | 15 - 20 Watts                  |
| Prolonged Rated Types                                                                                                                                                                                                                                                                                                                                                           | 13 - 15 Watts                  |
| Continuously Rated Types                                                                                                                                                                                                                                                                                                                                                        | 7 - 13 Watts                   |
| Maximum Pull-In Voltage (Coil at 20° C) Guideline:                                                                                                                                                                                                                                                                                                                              |                                |
| Highly Intermittent Rated types<br>(Max 25% Duty Cycle)                                                                                                                                                                                                                                                                                                                         | 60% $U_s$                      |
| Intermittently Rated types<br>(Max 70% Duty Cycle)                                                                                                                                                                                                                                                                                                                              | 60% $U_s$                      |
| Prolonged Operation<br>(Max 90% Duty Cycle)                                                                                                                                                                                                                                                                                                                                     | 60% $U_s$                      |
| Continuously Rated Types<br>(100% Duty Cycle)                                                                                                                                                                                                                                                                                                                                   | 66% $U_s$                      |
| Drop-Out Voltage Range                                                                                                                                                                                                                                                                                                                                                          | 10 - 25%                       |
| Typical Pull-In Time                                                                                                                                                                                                                                                                                                                                                            | 20ms                           |
| Typical Drop-Out Time (N/O Contacts to Open):                                                                                                                                                                                                                                                                                                                                   |                                |
| Without Suppression                                                                                                                                                                                                                                                                                                                                                             | 5ms                            |
| With Diode Suppression                                                                                                                                                                                                                                                                                                                                                          | 50ms                           |
| With Diode and Resistor<br>(Subject to resistance value)                                                                                                                                                                                                                                                                                                                        | 8 - 20ms                       |
| Typical Contact Bounce Period                                                                                                                                                                                                                                                                                                                                                   | 3ms                            |
| Operating Ambient Temperature                                                                                                                                                                                                                                                                                                                                                   | - 40°C to + 60°C               |
| Guideline Contactor Weight:                                                                                                                                                                                                                                                                                                                                                     |                                |
| SD200                                                                                                                                                                                                                                                                                                                                                                           | 480 gms                        |
| With Auxiliary                                                                                                                                                                                                                                                                                                                                                                  | + 20 gms                       |
| With Blowouts                                                                                                                                                                                                                                                                                                                                                                   | + 50 gms                       |
| <b>Auxiliary Details</b>                                                                                                                                                                                                                                                                                                                                                        |                                |
| Auxiliary Thermal Current Rating                                                                                                                                                                                                                                                                                                                                                | 5A                             |
| <b>Auxiliary Contact Switching Capabilities (Resistive Load):</b>                                                                                                                                                                                                                                                                                                               |                                |
|                                                                                                                                                                                                                                                                                                                                                                                 | 5A at 24V D.C.                 |
|                                                                                                                                                                                                                                                                                                                                                                                 | 2A at 48V D.C.                 |
|                                                                                                                                                                                                                                                                                                                                                                                 | 0.5A at 240V D.C.              |
| <b>Advised Connection Sizes for Maximum Continuous Current</b>                                                                                                                                                                                                                                                                                                                  |                                |
| Copper busbar                                                                                                                                                                                                                                                                                                                                                                   | 129mm [0.2inch]                |
| Cable                                                                                                                                                                                                                                                                                                                                                                           | Rated suitable for Application |
| <b>Key:</b> ▲ = Uninterrupted                                                                                                                                                                                                                                                                                                                                                   |                                |
| <b>Note:</b><br>Where applicable values shown are at 20° C<br><sup>1</sup> Please check our web site for product UL status<br><sup>2</sup> Mechanical Operation via the push/pull action of the manual disconnect button<br><sup>3</sup> Mechanical Operation via the energisation/de-energisation of the coil<br><sup>4</sup> A.C. Rectifier available on Fuseholder type only |                                |

The SD200 has been designed to provide a rapid means of disconnecting batteries or other power supplies in the event of serious electrical faults.

The SD200 combines the dual function of a manual disconnect and coil operated line contactor. The benefits of this design include compact size and reduced installation costs combined with an electrical capacity sufficient for small and medium size electric vehicles.

Whilst the switches are primarily intended for use with battery powered vehicles, they are also suitable for use with static power systems. All types are capable of safely rupturing full load battery currents in the event of an emergency.

Optionally a fuseholder for an inline fuse can be provided pre-fitted. This modification adjusts the positions of the coil terminals and is suitable for ANL or MEGA fuse configurations.

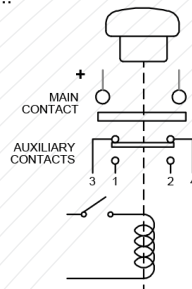


SD200

### Modes of Operation:

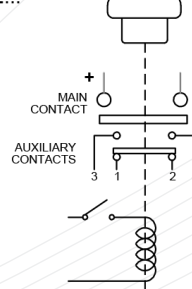
Knob depressed  
Coil de-energised  
Main contacts open  
N.O. auxiliary contacts open

1...



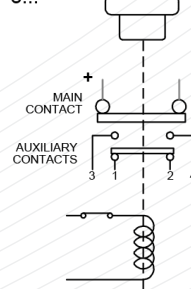
Knob in "ON" position  
Coil de-energised  
Main contacts open  
N.O. auxiliary contacts closed

2...

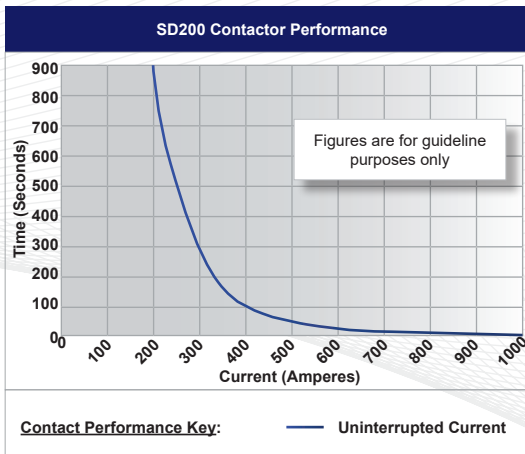


Knob in "ON" position  
Coil energised  
Main contacts closed  
N.O. auxiliary contacts closed

3...



The operation of the switch is such that with the operating knob depressed i.e. in the "off" position, no electrical functions can take place. However, if the knob is in the "On" position, the option of energising the coil and thus closing the main contacts becomes available. The coil energisation can be carried out either through the vehicle keyswitch or as a result of a signal from the vehicle electronic controller. When used as an emergency battery disconnect switch, manually depressing the operating knob will override the energised coil such that the main contact and the auxiliary contact (where fitted) will open until such time as the knob is again moved to the "on" position.



- Performance data provided should be used as a guide only. Some de-rating or variation from figures may be necessary according to application.
- Thermal current ratings stated are dependant upon the size of conductor being used
- For further technical advice email: [technical@albrightinternational.com](mailto:technical@albrightinternational.com)
- Albright reserve the right to change data without prior notice

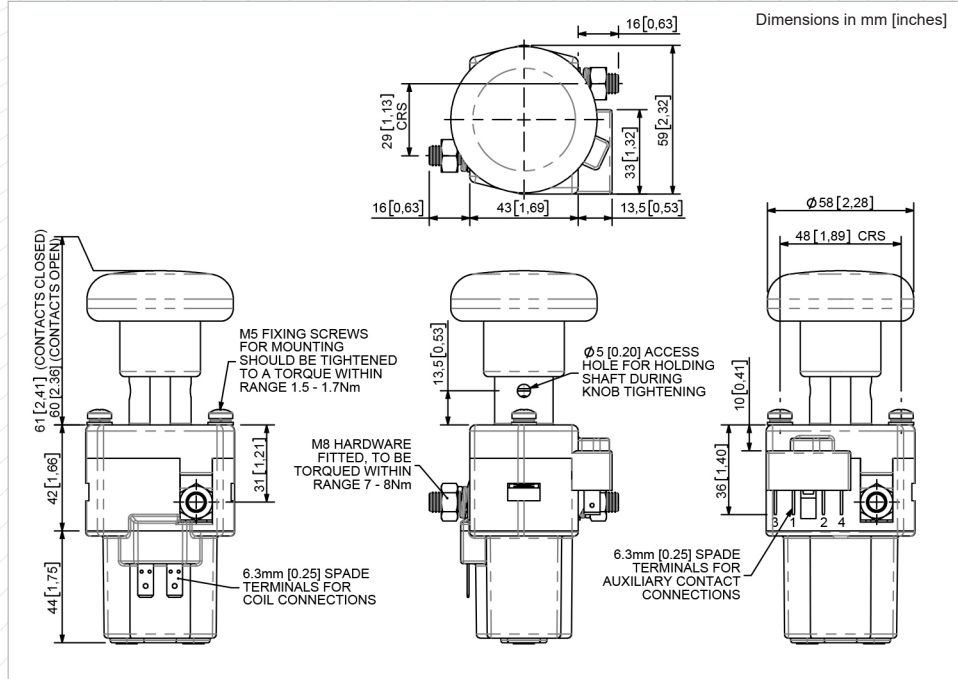
| SD200 Available Options                            |   |        |
|----------------------------------------------------|---|--------|
| General                                            |   | Suffix |
| Auxiliary Contacts                                 | ○ | A      |
| Auxiliary Contacts - V3                            | X |        |
| Magnetic Blowouts <sup>†</sup>                     | ○ | B      |
| Magnetic Blowouts - High Powered <sup>†</sup>      | ○ | B      |
| Armature Cap <sup>‡</sup>                          | ● |        |
| Mounting Brackets                                  | X |        |
| Magnetic Latching <sup>†</sup> (Not fail safe)     | X |        |
| Closed Contact Housing                             | ○ |        |
| Environmentally Protected IP66                     | X |        |
| EE Type (Steel Shroud)                             | X |        |
| Lockable                                           | X |        |
| <b>Contacts</b>                                    |   |        |
| Large Tips                                         | X |        |
| Textured Tips                                      | ○ | T      |
| Silver Plating                                     | X |        |
| <b>Coil</b>                                        |   |        |
| AC Rectifier Board (Fitted) <sup>‡</sup>           | ○ |        |
| Coil Suppression <sup>†</sup>                      | ○ |        |
| Flying Leads <sup>‡</sup>                          | ○ | F      |
| Manual Override Operation                          | ● |        |
| M4 Stud Terminals                                  | X |        |
| M5 Terminal Board <sup>‡</sup>                     | ○ |        |
| Vacuum Impregnation <sup>‡</sup>                   | ○ |        |
| <b>Key:</b> Optional ○ Standard ● Not Available X  |   |        |
| <sup>†</sup> Connections become polarity sensitive |   |        |
| <sup>‡</sup> Fuseholder type only                  |   |        |

## The Use of Battery Disconnecting Switches in Electric Vehicles

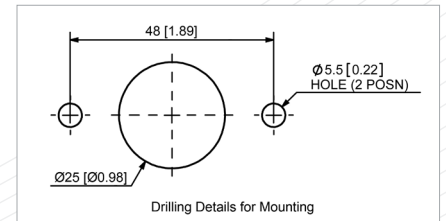
Modern battery powered electric vehicles are inherently very reliable and safe. However, even when sophisticated electronic controllers are used it is desirable to have a means of disconnecting the battery in the event of an emergency, such as a vehicle failing to stop or an electrical short circuit.

In many countries it is mandatory to fit one or more devices to achieve an emergency disconnection of the battery.

### SD200A Technical Drawing

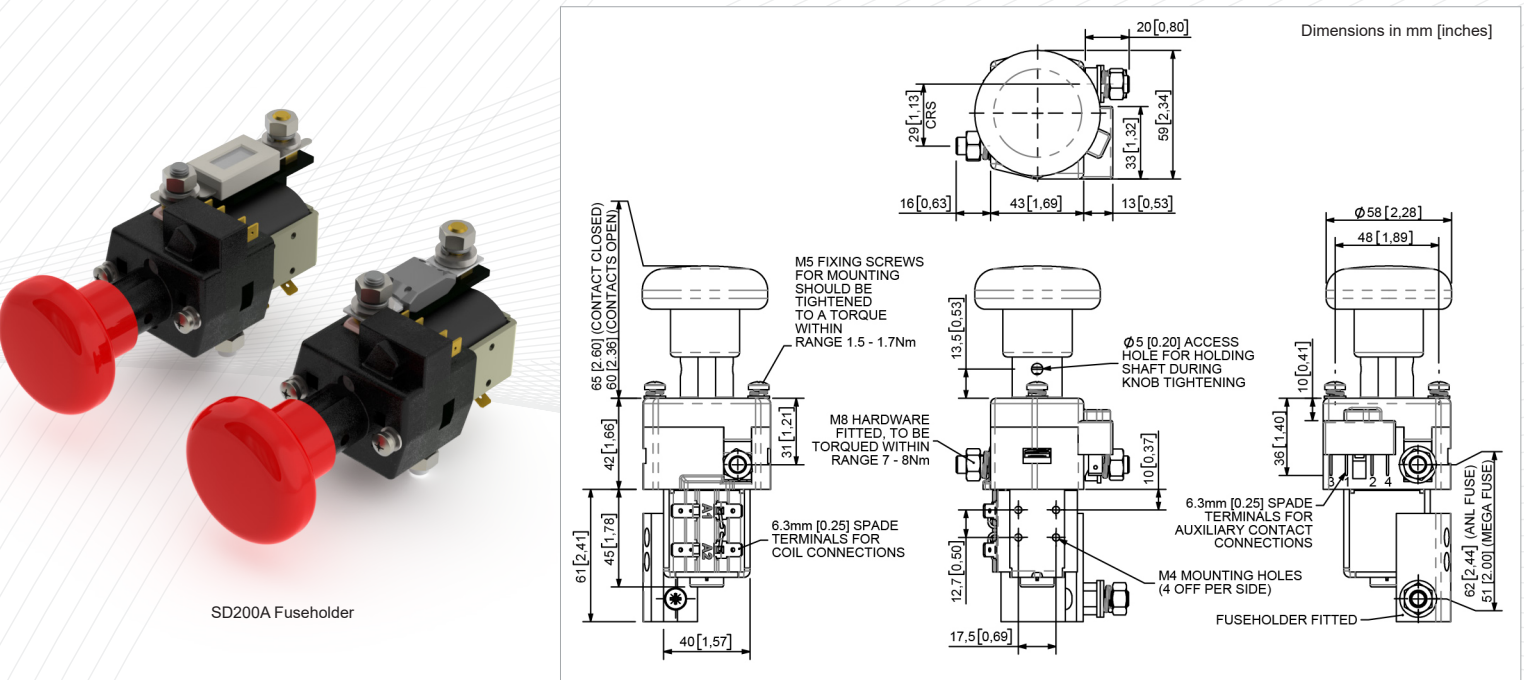


SD200A



Drilling Details for Mounting

### SD200A Fuseholder Technical Drawing



SD200A Fuseholder

### Precautions:

When fitted with magnetic blowouts the polarity marked on the contact housing must be observed when connecting the main terminals. Ensure that the switches are installed in a position where heavy arcs emanating from the switch cannot damage or electrically jump across to adjacent parts.

The switch is to be used to rupture current in an emergency or as a no-load isolator. **Do not use as a regular On-Load Switching Device.**