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Typical Drop-Out Time (N/O Contacts to Open):         Without Suppression       5 - 10ms         With Diode Suppression       50 - 100ms         With Diode and Resistor (Subject to resistance value)       10 - 50ms         Typical Contact Bounce Period       3ms         Operating Ambient Temperature       -40°C to + 60°C         Guideline Contactor Weight:       50 gms         SD250       870 gms         With Blowouts       + 50 gms         With Lock       + 60 gms         Auxiliary Thermal Current Rating         Auxiliary Contact Switching Capuellities (Resistive Load):         Auxiliary Contact Switching Capuellities (Resistive Load):         In Sta 24V D.C.         In OA at 48V D.C.	Drop-Out Voltage Range	10 - 30%
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With Diode and Resistor (Subject to resistance value)10 - 50msTypical Contact Bounce Period3msOperating Ambient Temperature- 40°C to + 60°CGuideline Contactor Weight:- 40°C to + 60°CSD250870 gmsWith Auxiliary+ 20 gmsWith Blowouts+ 50 gmsWith Lock+ 60 gmsAuxiliary Thermal Current Rating15A15AAuxiliary Contact Switching Capabilities (Resistive Load):10A at 48V D.C.	Without Suppression	5 - 10ms
(Subject to resistance value)     10 - 50ms       Typical Contact Bounce Period     3ms       Operating Ambient Temperature     -40°C to + 60°C       Guideline Contactor Weight:     -50 gms       SD250     870 gms       With Auxiliary     + 20 gms       With Blowouts     + 50 gms       With Lock     + 60 gms       Auxiliary Thermal Current Rating       Auxiliary Contact Switching Capa- Lilities (Resistive Load):       15A at 24V D.C.       10A at 48V D.C.	With Diode Suppression	50 - 100ms
Operating Ambient Temperature     - 40°C to + 60°C       Guideline Contactor Weight:     -       SD250     870 gms       With Auxiliary     + 20 gms       With Blowouts     + 50 gms       With Lock     + 60 gms       Auxiliary Thermal Current Rating       Auxilliary Contact Switching Capa- Lilities (Resistive Load):       In Colspan="2">15A at 24V D.C.       In Colspan="2">10A at 48V D.C.		10 - 50ms
Guideline Contactor Weight:         SD250       870 gms         With Auxiliary       + 20 gms         With Blowouts       + 50 gms         With Lock       + 60 gms         Auxiliary Thermal Current Rating         Auxiliary Contact Switching Capabilities (Resistive Load):         Intervention       15A at 24V D.C.         Intervention       10A at 48V D.C.	Typical Contact Bounce Period	3ms
SD250     870 gms       With Auxiliary     + 20 gms       With Blowouts     + 50 gms       With Lock     + 60 gms       Auxiliary Details       Auxiliary Thermal Current Rating       15A     15A at 24V D.C.       10A at 48V D.C.     10A at 48V D.C.	Operating Ambient Temperature	- 40°C to + 60°C
With Auxiliary     + 20 gms       With Blowouts     + 50 gms       With Lock     + 60 gms       Auxiliary Details       Auxiliary Thermal Current Rating     15A       Auxiliary Contact Switching Capabilities (Resistive Load):     15A at 24V D.C.       10A at 48V D.C.     10A at 48V D.C.	Guideline Contactor Weight:	
With Blowouts     + 50 gms       With Lock     + 60 gms       Auxiliary Details       Auxiliary Thermal Current Rating     15A       Auxiliary Contact Switching Capabilities (Resistive Load):     15A at 24V D.C.       10A at 48V D.C.     10A at 48V D.C.	SD250	870 gms
With Lock     + 60 gms       Auxiliary Details       Auxiliary Thermal Current Rating     15A       Auxiliary Contact Switching Capabilities (Resistive Load):     15A at 24V D.C.       Intersection 10A at 48V D.C.     10A at 48V D.C.	With Auxiliary	+ 20 gms
Auxiliary Details       Auxiliary Thermal Current Rating     15A       Auxiliary Contact Switching Capabilities (Resistive Load):     15A at 24V D.C.       Intersection 10A at 48V D.C.     10A at 48V D.C.	With Blowouts	+ 50 gms
Auxiliary Thermal Current Rating     15A       Auxiliary Contact Switching Capabilities (Resistive Load):       15A at 24V D.C.       10A at 48V D.C.	With Lock	+ 60 gms
Auxiliary Contact Switching Capabilities (Resistive Load): 15A at 24V D.C. 10A at 48V D.C.	Auxiliary I	Details
15A at 24V D.C. 10A at 48V D.C.	Auxiliary Thermal Current Rating	15A
10A at 48V D.C.	Auxiliary Contact Switching Capa	bilities (Resistive Load):
		15A at 24V D.C.
5A at 96V D.C.		10A at 48V D.C.
		5A at 96V D.C.

Advised Connection Sizes for Maximum Continuous Current				
Copper busbar	162mm [0.25inch]			
Cable	Rated suitable for Application			
Key: 🖌 = Uninterrupted				
Note:				

Where applicable values shown are at 20°C

Please check our web site for product UL status

<sup>2</sup> Mechanical Operation via the push/pull action of the manual disconnect button

<sup>3</sup> Mechanical Operation via the energisation/de-energisation of the coil

#### SD250 has been designed to provide a rapid means of The disconnecting batteries or other power supplies in the event of serious electrical faults.

Uninterrupted current - no or infrequent load switching requirements (maintains a lower contact resistance).

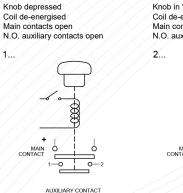
The SD250 combines the dual function of a manual disconnect and coil operated line contactor. The benefits of this design include compact size and reduced installation costs combined with an electrical capacity sufficient for small and medium size electric vehicles.

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.

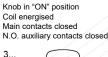
SD250

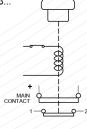
### Modes of Operation:

PEPP









AUXILIARY CONTACT



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.

SD250 Contactor Performance		SD250 Available Options		
		General		Suffix
900		Auxiliary Contacts	0	А
800	Figures are for guideline	Auxiliary Contacts - V3	х	
700	purposes only	Magnetic Blowouts <sup>†</sup>	0	В
(\$600 500 500 (\$200 (\$200) (\$2		Magnetic Blowouts - High Powered <sup>†</sup>	Х	
S 500		Armature Cap	Х	
90 400 2 400		Mounting Brackets	Х	
Ë 300	E 300 200	Magnetic Latching <sup>†</sup> (Not fail safe)	Х	
		Closed Contact Housing	0	
100 <sup>0</sup> <sub>1</sub> 0 <sup>0</sup> <sub>1</sub> 0 <sup>0</sup> <sub>3</sub> 0 <sup>0</sup> <sub>6</sub> 0 <sup>0</sup> <sub>6</sub> 0 <sup>0</sup> <sub>1</sub> 0		Environmentally Protected IP66	Х	
	20 90 90 90 90 90 90 90 90 90 90 90	EE Type (Steel Shroud)	Х	
	Lockable	0	L	
	ourient (Amperes)	Contacts		
Contact Performance	Key: Uninterrupted Current	Large Tips	Х	
		Textured Tips	0	Т
		Silver Plating	Х	
		Coil		
		AC Rectifier Board (Fitted)	Х	
Performance data provided should be used as a guide	Coil Suppression <sup>†</sup>	0		
	e-rating or variation from figures may be	Flying Leads	Х	F
necessary acco	ording to application.	Manual Override Operation	•	

M4 Stud Terminals

M5 Terminal Board

Vacuum Impregnation

Key: Optional O Standard 

Not Available X

<sup>†</sup> Connections become polarity sensitive

Thermal current ratings stated are dependant upon the size of conductor being used

- For further technical advice email:
- technical@albrightinternational.com
  - Albright reserve the right to change data without prior notice

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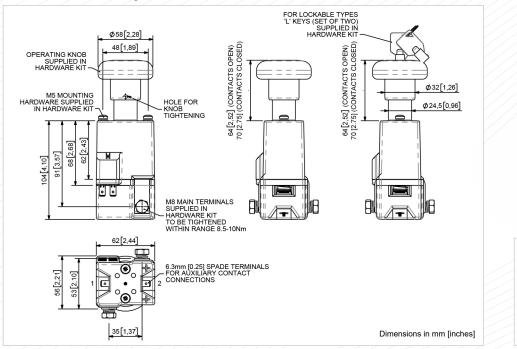


# The Use of Battery Disconnecting Switches in Electric Vehicles

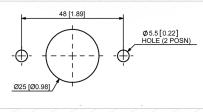
Modern battery powered electric vehicles are inherently very reliable and safe. However, even when sophisticated electronic controllers are used it is desirable to have a means of disconnecting the battery in the event of an emergency, such as a vehicle failing to stop or an electrical short circuit.

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

### SD250A Technical Drawing







**Drilling Details for Mounting** 



A double circuit normally open, normally closed microswitch auxiliary contact can be fitted. This has a D.C. resistive rating of 15 amperes at 24 volts.

The auxiliary contact operates after the main contacts open, according to the circuit requirements.

The suffix "A" indicates the fitting of auxiliary contacts.

#### **Lockable Switches**

Lockable versions feature a key which is necessary for the knob to be moved from the "Off" position to the "On" position. Once in the "On" position, the key can be removed. Thereafter, the knob may be depressed to the "Off" position where it will automatically lock and remain locked until the key is used again to unlock it.

# **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.

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