

# SD Series Non-Fused Load Switches



## Features

- High breaking capacity (AC 22A - AC 23A)
- Double break contacts
- High electrical and mechanical endurance
- Resistant to damp heat
- IP20 degree of protection
- 35 mm DIN-rail mountable or screw mountable
- Modular 45mm frame
- SD1 and SD2 series can be locked in 0 position
- Handle with door interlock feature can be locked with up to three padlocks in 0 position
- Wide range of accessories

## Overview

The SD1 and SD2 series of non-fused load switches are listed as Manual Motor Controllers and are designed for use in local motor isolation. The SD series of modular load switches are used for breaking of equipment loads up to 600 VAC, at a nominal current ranging from 16 to 125 amps.

These load switches are most commonly used for the following applications:

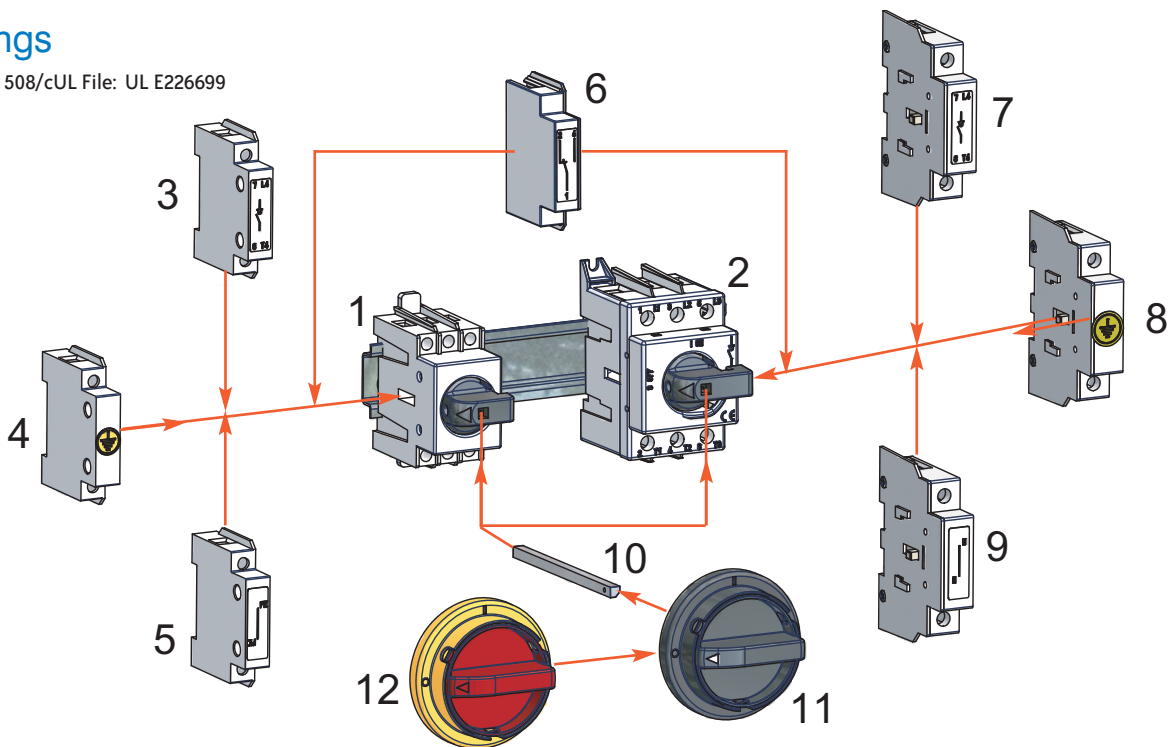
- Local load switch for motors
- IEC load switch applications outside North America

• IEC/EN File No. 60947/1-3

Selecting Switches According to IEC 947/1-3 Standard		
AC	Use	Application
AC20	No-load making and breaking	Load switch (device without no-load making and breaking capacity)
AC21	Resistive loads including moderate overloads	Switches at installation head or for resistive circuits (heating, lighting, except discharge lamps, etc.)
AC22	Inductive and resistive mixed loads including moderate overloads	Switches in secondary circuits or reactive circuits (capacitor banks, discharge lamps, shunt motors, etc.)
AC23	Loads made of motors or other highly inductive loads	Switches feeding one or several motors or inductive circuits (electric carriers, brake magnet, series motor, etc.)

## Listings

• UL 508/cUL File: UL E226699



1. SD1 direct handle load switch
2. SD2 direct handle load switch
3. 4th pole for SD1
4. Grounding pole for SD1

5. Fixed neutral pole for SD1
6. SD1-SD2 auxiliary contact 1NO + 1NC
7. 4th pole for SD2
8. Grounding pole for SD2

9. Fixed neutral pole for SD2
10. Operating shaft
11. Non-defeatable door interlock handle
12. Emergency door interlock handle

# Non-Fused Load Switches - Technical Specs

Non-Fused Load Switches Technical Specifications According to UL 508								
Specifications	SD1				SD2			
	16A	25A	32A	40A	63A	80A	100A	125A
<b>Rated Current - 3 Poles</b>								
<b>Rated Operational Voltage (VAC)</b>	600	600	600	600	600	600	600	600
<b>Short Circuit Rating (kA)</b>	5	5	5	5	5	5	5	5
<b>Fuse Type (if fusing separately)</b>	RK5	RK5	RK5	RK5	RK5	RK5	RK5	RK5
<b>Fuse Rating (A) (if fusing separately)</b>	40	40	40	40	125	125	125	125
<b>Maximum UL Horsepower, Three Phase</b>								
<b>120V</b>	3	3	3	3	5	5	5	5
<b>240V</b>	5	7.5	7.5	10	10	15	15	15
<b>415V</b>	7.5	10	10	15	20	25	25	25
<b>480V</b>	10	15	20	20	25	30	30	30
<b>600V</b>	15	20	25	30	30	40	40	40
<b>Maximum UL Horsepower, Single Phase</b>								
<b>120V</b>	–	–	–	–	3	5	5	5
<b>240V</b>	–	–	–	–	7.5	10	10	10
<b>Mechanical Endurance (number of operations)</b>	6000	6000	6000	6000	6000	6000	6000	6000
<b>Electrical Endurance (number of operations)</b>	6000	6000	6000	6000	6000	6000	6000	6000
<b>Wire Size Range (AWG)</b>	16-6	16-6	16-6	16-6	6-1	6-1	6-1	6-1
<b>Tightening Type</b>	Cu	Cu	Cu	Cu	Cu	Cu	Cu	Cu
<b>Maximum Terminal Torque N-m (lb-in)</b>	2 (17.2)	2 (17.2)	2 (17.2)	2 (17.2)	3.5 (31)	3.5 (31)	3.5 (31)	3.5 (31)
<b>Net Weight (lb/kg)</b>	0.29/0.13	0.29/0.13	0.29/0.13	0.29/0.13	0.55/0.25	0.55/0.25	0.55/0.25	0.55/0.25

Non-Fused Load Switches Technical Specifications According to IEC/CEI/EN 60947/1-3								
Specifications	SD1				SD2			
	16A	25A	32A	40A	63A	80A	100A	125A
<b>Rating - 3 Poles</b>								
<b>Rated Insulation Voltage <math>U_i</math> (V)</b>	800	800	800	800	800	800	800	800
<b>Impulse Withstand Voltage <math>U_{imp}</math> (kV)</b>	8	8	8	8	8	8	8	8
<b>Rated Thermal Current at 40°C (A)</b>	16	25	32	40	63	80	100	125
<b>Rated Operational Current AC-21A</b>								
<b>415V</b>	16	25	32	40	63	80	100	125
<b>500V</b>	16	25	32	40	63	80	100	125
<b>690V</b>	16	25	32	40	63	80	100	125
<b>Rated Operational Current AC-22A</b>								
<b>415V</b>	16	25	32	40	63	80	100	125
<b>500V</b>	16	25	32	40	63	80	100	100
<b>690V</b>	16	25	32	40	40	40	40	40
<b>Rated Operational Current AC-23A</b>								
<b>415V</b>	16	25	32	40	63	80	80	80
<b>500V</b>	16	25	32	40	63	63	63	63
<b>690V</b>	16	25	25	25	32	32	32	32
<b>Rated Making Capacity AC23</b>	<b>415V</b>	160	250	320	400	630	800	800
<b>Rated Breaking Capacity AC23</b>	<b>415V</b>	128	200	256	320	504	640	640
<b>Rated Operational Power AC23 (W)</b>	<b>415V</b>	7.5	11	14	15	29	37	37
<b>(kW)</b>	<b>500V</b>	7.5	11	14	15	35	35	35
<b>(kW)</b>	<b>690V</b>	7.5	11	14	15	24	24	24
<b>Short-circuit Withstand Current 1 sec. (kA)</b>	<b>400V</b>	1.1	1.1	1.1	1.1	1.5	1.5	1.5
<b>Rated Fuse Short-circuit Current (if fusing separately)</b>								
<b>Back-up Fuse gG (A)</b>	16	25	32	40	63	80	100	125
<b>RMS Value (kA)</b>	50	50	50	50	50	50	30	20
<b>Peak Value (kA)</b>	3.8	4.5	5	5.7	8	9.9	9.9	9.9
<b>Mechanical Endurance (n)</b>	50000	50000	50000	50000	30000	30000	30000	30000
<b>Electrical Endurance (n)</b>	3000	3000	3000	3000	3000	1500	1500	1000
<b>Power Loss Per Pole (W)</b>	0.1	0.1	0.2	0.3	0.8	1.3	2.0	3.1
<b>Cable Section (mmq)</b>	16	16	16	16	16-50	16-50	25-50	35-50
<b>Max Terminal Torque (N-m)</b>	2	2	2	2	2	2	2	2
<b>Operation Torque (N-m)</b>	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
<b>Auxiliary Contacts AC 15/415V (A)</b>	3	3	3	3	3	3	3	3

# Non-Fused Load Switches - SD1 Series



SD1-032-BR



SD1-032-RR

Our SD1 series non-fused load switches allow breaking of equipment loads up to 600 VAC, at a nominal current range from 16 amps to 40 amps. They are DIN-rail or panel-mountable. A complete line of standard accessories including an optional auxiliary contact (one N.O. and one N.C. contact) is available for this model.

SD1 Series Non-Fused Load Switches						
Part Number	Price	Handle Type	Color	Ampere Rating	Voltage	Interrupt Capacity
SD1-016-BR	<--->	Rotary handle	Black	16	600VAC	5 kA
SD1-025-BR	<--->			25		
SD1-032-BR	<--->			32		
SD1-040-BR	<--->			40		
SD1-016-RR	<--->	Rotary handle	Red	16	600VAC	5 kA
SD1-025-RR	<--->			25		
SD1-032-RR	<--->			32		
SD1-040-RR	<--->			40		



SD1-AUX



SD1-4P



SD1-GP



SD1-NP

SD1 Series Non-Fused Load Switches Accessories Selection Guide		
Part Number	Price	Description
SD1-4P	<--->	Additional 4th pole for SD1 non-fused load switches; 40A rating
SD1-GP	<--->	Ground pole for SD1 non-fused load switches
SD1-NP	<--->	Neutral pole for SD1 non-fused load switches
SD1-AUX	<--->	Auxiliary contact for SD1 non-fused load switches. <b>One N.O</b> and <b>one N.C.</b> contact.
SD-CON	<--->	Connector, six to eight poles, to connect two non-fused load switches to one remote operator (Use with 200mm max. shaft length.)
SD-S100	<--->	Remote operator shaft for 100mm length (purchase handle separately)
SD-S200	<--->	Remote operator shaft for 200mm length (purchase handle separately)
SD-S300	<--->	Remote operator shaft for 300mm length (purchase handle separately)
SD-HB	<--->	Remote black handle, non-defeatable, IP65 when properly installed
SD-HRY	<--->	Remote red-yellow handle, non-defeatable, IP65 when properly installed



SD-CON



SD-S100, SD-S200, SD-S300



SD-HB



SD-HRY

# Non-Fused Load Switches - SD2 Series

Our SD2 Series non-fused load switches allow breaking of equipment loads up to 600 VAC, at a nominal current range from 63 amps to 125 amps. They are DIN-rail or panel-mountable. A complete line of standard accessories including an optional auxiliary contact (one N.O. and one N.C. contact) is available for this model.


**SD2-063-BR**

**SD2-063-RR**

## SD2 Series Non-Fused Load Switches

Part Number	Price	Handle Type	Color	Ampere Rating	Voltage	Interrupt Capacity
<b>SD2-063-BR</b>	<--->	Rotary handle	Black	63	600VAC	5 kA
<b>SD2-080-BR</b>	<--->			80		
<b>SD2-100-BR</b>	<--->			100		
<b>SD2-125-BR</b>	<--->			125		
<b>SD2-063-RR</b>	<--->	Rotary handle	Red	63	600VAC	5 kA
<b>SD2-080-RR</b>	<--->			80		
<b>SD2-100-RR</b>	<--->			100		
<b>SD2-125-RR</b>	<--->			125		


**SD2-4P**

**SD2-GP**

**SD2-NP**

**SD2-AUX**

## SD2 Series Non-Fused Load Switches Accessories Selection Guide

Part Number	Price	Description
<b>SD2-4P</b>	<--->	Additional 4th pole for SD2 non-fused load switches; 125A rating
<b>SD2-GP</b>	<--->	Ground pole for SD2 non-fused load switches
<b>SD2-NP</b>	<--->	Neutral pole for SD2 non-fused load switches
<b>SD2-AUX</b>	<--->	Auxiliary contact for SD2 non-fused load switches. <b>One N.O. and one N.C.</b> contact.
<b>SD-CON</b>	<--->	Connector, six to eight poles, to connect two non-fused load switches to one remote operator (Use with 200mm max. shaft length.)
<b>SD-S100</b>	<--->	Remote operator shaft for 100mm length (purchase handle separately)
<b>SD-S200</b>	<--->	Remote operator shaft for 200mm length (purchase handle separately)
<b>SD-S300</b>	<--->	Remote operator shaft for 300mm length (purchase handle separately)
<b>SD-HB</b>	<--->	Remote black handle, non-defeatable. IP65 when properly installed.
<b>SD-HRY</b>	<--->	Remote red-yellow handle, non-defeatable. IP65 when properly installed.


**SD-HB**

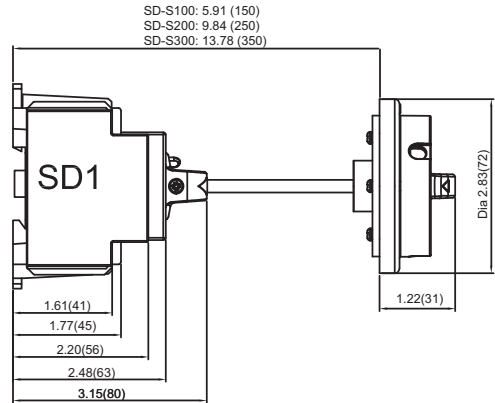
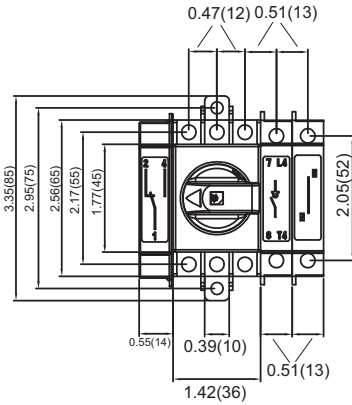
**SD-HRY**

**SD-CON**

**SD-S100, SD-S200, SD-S300**

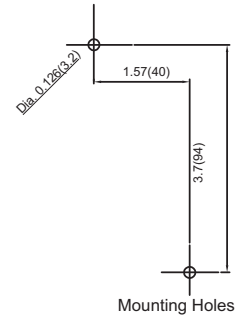
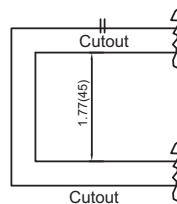
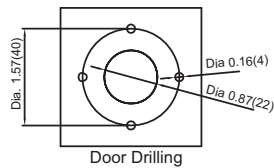
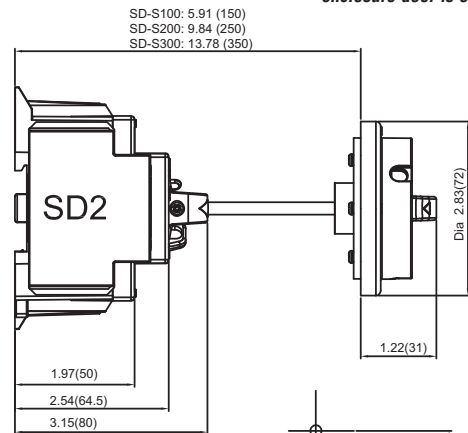
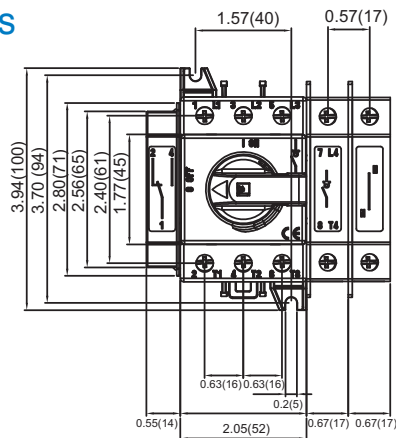
# Non-Fused Load Switches - Dimensions

## SD1 dimensions

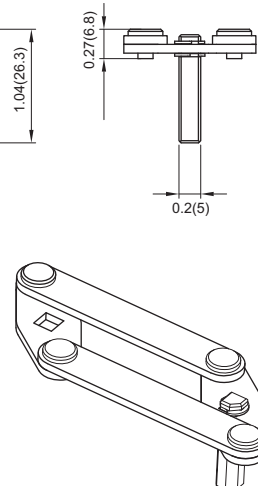
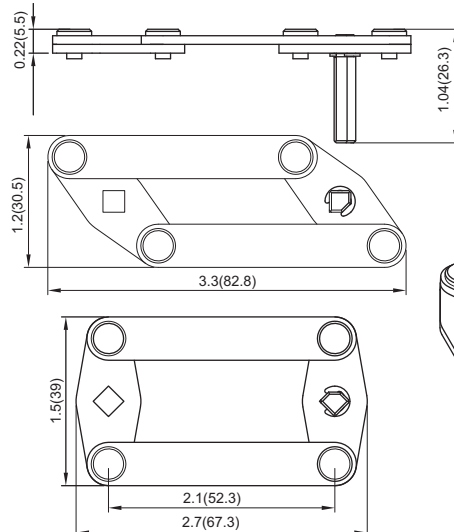


*Note: Rod stays with switch when enclosure door is opened.*

## SD2 dimensions



## SD-CON dimensions



**Dimensions in inches(millimeters)**