

# SIRCO UL 98B DC Non-Fusible Disconnect Switches



To assemble a switch, please select:

*Direct Operation*

*External Operation*



OR



Switch Body

Direct Handle

Switch Body

Shaft

External Handle

## UL 98B Non-Fusible Disconnect Switches

Part Number	Description	Switch Body Rating (A)	Voltage Rating	# of Poles	Price
<a href="#">27DC3011</a>	Non-fusible UL 98B rotary disconnect switch	100	600VDC	3	Retired
<a href="#">27DC4011</a>			1000VDC	4	\$347.00
<a href="#">27DC3021</a>		250	600VDC	3	\$295.00
<a href="#">27DC4021</a>			1000VDC	4	\$418.00

## Handles – Defeatable and Lockable

Part Number	Description	Switch Body Rating (A)	Handle Color	Handle Type	NEMA/UL Type	Price
<a href="#">26995052</a>	Mounts directly on switch, no shaft required*	100-400	Black	–	–	\$17.00
<a href="#">142F2111</a>	External front handles, shaft required	100-400	Black/Blue	S2	1, 3R, 12	\$45.50
<a href="#">142G2111</a>			Red/Yellow			\$45.50
<a href="#">142D2111</a>			Black/Blue		4, 4X	\$63.00
<a href="#">142E2111</a>			Red/Yellow			\$63.00
<a href="#">142D2911</a>	External heavy duty front handles, shaft required**	100-400	Black/Blue	S2	4, 4X	\$80.00
<a href="#">142E2911</a>			Red/Yellow			\$80.00

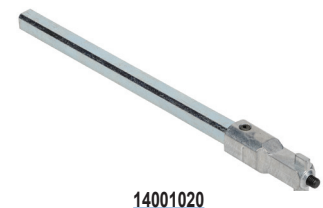
\* Not defeatable

\*\* Heavy duty handles have larger metal hasp to accommodate multiple locking devices.



## Shafts for External Handles

Part Number	Switch Body Rating (A)	Handle Type	Length (in)	Length (mm)	Price
<a href="#">14001020</a>	100-400	S1, S2	7.9	200	\$11.50
<a href="#">14001032</a>			12.6	320	\$12.50
<a href="#">14001040</a>			15.7	400	\$14.00



# SIRCO UL 98B DC Non-Fusible Disconnect Switches



## Shaft Guide for External Handle

Part Number	Description	Fits Handle Type	Price
<a href="#"><u>14290000</u></a>	This accessory makes alignment connections between the shaft and handle easier. Allows up to 15mm misalignment tolerance. Required for a shaft length over 300mm. Included with longer shafts.	S01, S1, S2, S3	\$6.25

[14290000](#)

## Auxiliary Contacts

Part Number	Description	Switch Body Rating (A)	Type	Contacts	Price
<a href="#"><u>27990021</u></a>	Auxiliary contact block: 1 Form C, 10A @ 125VAC	100-600	C Type standard level	1 NO / 1 NC	\$12.50
<a href="#"><u>27990022</u></a>	Auxiliary contact block: 1 Form C, 10A @ 125VAC, 2/pk			1 NO / 1 NC	\$17.00
<a href="#"><u>27990121</u></a>	Auxiliary contact block: 1 Form C, 1A @ 125VAC, low impedance		C Type low impedance	1 NO / 1 NC	\$14.50
<a href="#"><u>27990122</u></a>	Auxiliary contact block: 1 Form C, 1A @ 125VAC, low impedance, 2/PK			1 NO / 1 NC	\$23.50

[27990021](#)

## Terminal Screens

Part Number	Description	Switch Body Rating (A)	No. of Poles	Position	Price
<a href="#"><u>27983021</u></a>	Terminal screens provide line or load protection against direct contact with terminals or connection parts.	100-250	3	Line	\$20.00
<a href="#"><u>27988021</u></a>				Load	\$20.00
<a href="#"><u>27984021</u></a>			4	Line or load	\$23.50

[27983021](#)

## Terminal Lugs

Part Number	Description	Switch Body Rating (A)	Wire Range	Lugs per kit	No cables per lug	Price
<a href="#"><u>39542020</u></a>	Terminal lug kits allow for the connection of bare copper cables on to the terminals (no spade lugs). Cable type Cu/Al.	100-250	#6 - 300MCM	2	1	\$17.00

[39542020](#)

# SIRCO UL 98B DC

## Non-Fusible Disconnect Switches



### Technical Characteristics

Characteristics According to UL 98 / CSA 22.2#4 and UL 98B		
	<u>27DC3011, 27DC4011</u>	<u>27DC3021, 27DC4021</u>
<b>General use rating (A)</b>	100	250
600VDC / 3P in series (A)	100	250
1000VDC / 4P in series (A)	100	250
<b>Short-circuit capacity at 600VDC</b>		
Prospective short-circuit current (kA rms) <sup>1</sup>	20	20
Type of fuse	Mersen A70P100	Mersen A70P100
Associated fuse rating (A)	200	200
<b>Short-circuit capacity at 1000VDC (any breaker)</b>		
Prospective short-circuit current (kA rms) <sup>1</sup>	10	10
<b>Wire type/temperature</b>	Cu/Al / 75°C (167°F)	
<b>Product weight – lb (kg)</b>		
3-pole	4.2 (1.91)	
4-pole	5.0 (2.3)	
<b>Wire range</b>		
Stranded (AWG)	#6-300MCM	#6-300MCM
Torque - lb-in (N·m)	275 (31)	275 (31)
<b>Environmental – switch body</b>		
Operating temperature <sup>1</sup>	-20°C to 70°C (-4°F to +158°F)	
Flammability rating	UL 94-V0	
<b>Mechanical characteristics</b>		
Endurance (number of operating cycles)	10,000	10,000
Operating torque (lb-in / N·m)	88.5 / 10	88.5 / 10
<b>Mounting</b>	Panel mount	
<b>Auxiliary contact</b>		
Electrical characteristics	A300	A300
<b>Agency approvals</b>		
UL file # E201138 (UL 98), E346418 (UL 98B) CSA file # 112964 (22.2 No. 4)		

<sup>1</sup> Temperatures above 40°C, the current rating of the switch has to be de-rated 1% per °C over 40°C. Example, at 60°C a 100A switch is rated 80A

Note: Short-circuit rating achieved when used with corresponding fuse type and max fuse rating.

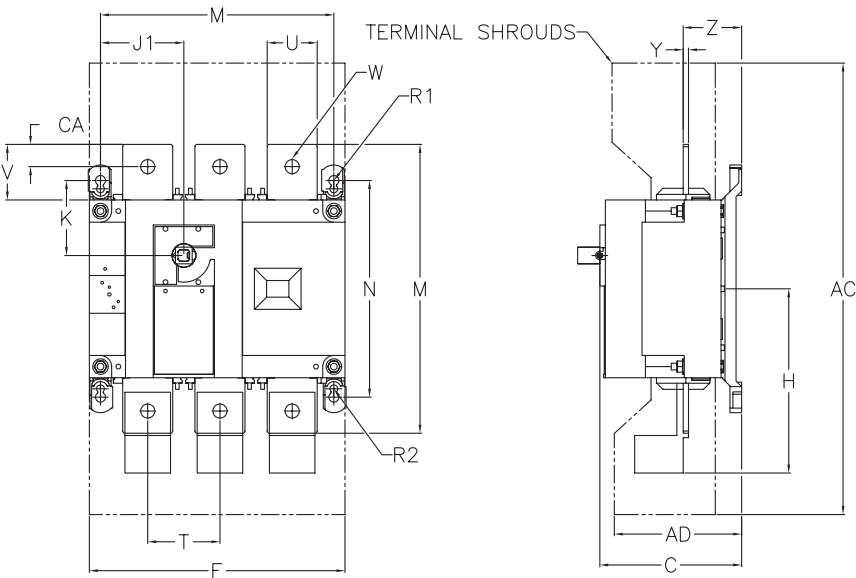
To obtain the most current agency approval information, see the Agency Approval Checklist section on the specific part number's web page.

Characteristics According to IEC 60647-3		
	<u>27DC3011</u> <u>27DC4011</u>	<u>27DC3021</u> <u>27DC4021</u>
<b>Thermal current <math>I_{th}</math> at 40°C (A)</b>	160	250
Rated insulation voltage $U_i$ (V)	1,200	1,200
Rated impulse withstand voltage $U_{imp}$ (kV)	12	12
<b>Rated operational currents <math>I_e</math>, DC-22B</b>		
750VDC / 3P in series (A)	160	250
1000VDC / 4P in series (A)	160	250

# SIRCO UL 98B DC Non-Fusible Disconnect Switches

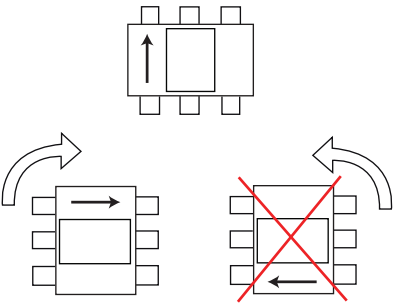


## Dimensions [inches/mm]



Dimensions																							
Switch Body Rating (A)	Unit	Overall Dims	Terminal Shrouds		Switch Body						Switch Mounting					Connection							
		C	AC	AD	F 3p	F 4p	H	J1 3p	J1 4p	K	M 3p	M 4p	N	R1	R2	T	U	V	W	Y	Z	AA	CA
	100-250	in	3.72	10.1	3.05	7.09	9.06	4.22	2.17	4.13	1.8	6.3	8.27	5.31	0.35	0.27	1.97	0.98	1.18	0.43	0.14	1.35	6.3
	mm	94.6	256	77.5	180	230	107	55	105	45.6	160	210	135	9	7	50	25	30	11	3.5	34.4	160	15

### Mounting Orientation



Note: The switch will operate correctly when rotated clockwise 90 degrees.  
The switch will not operate correctly when rotated counterclockwise 90 degrees.

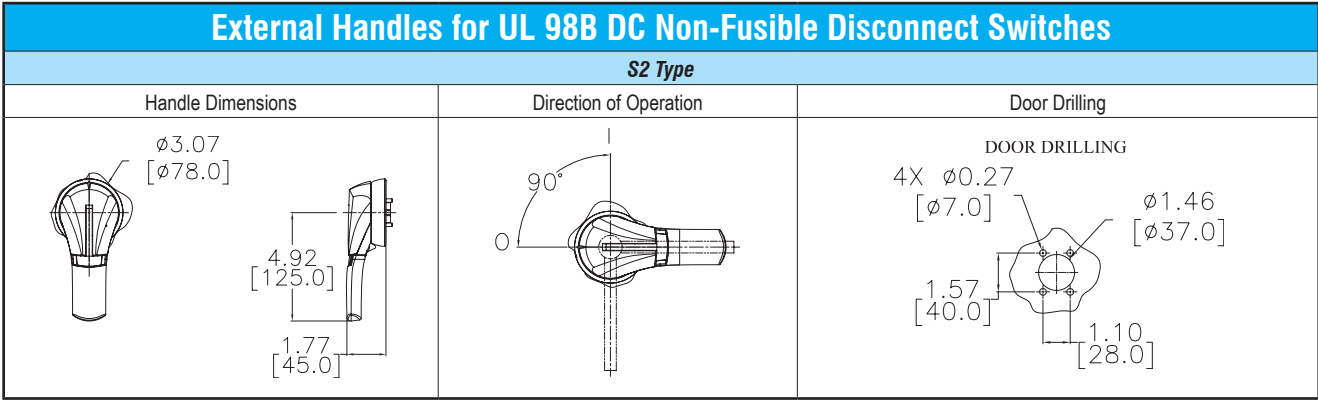
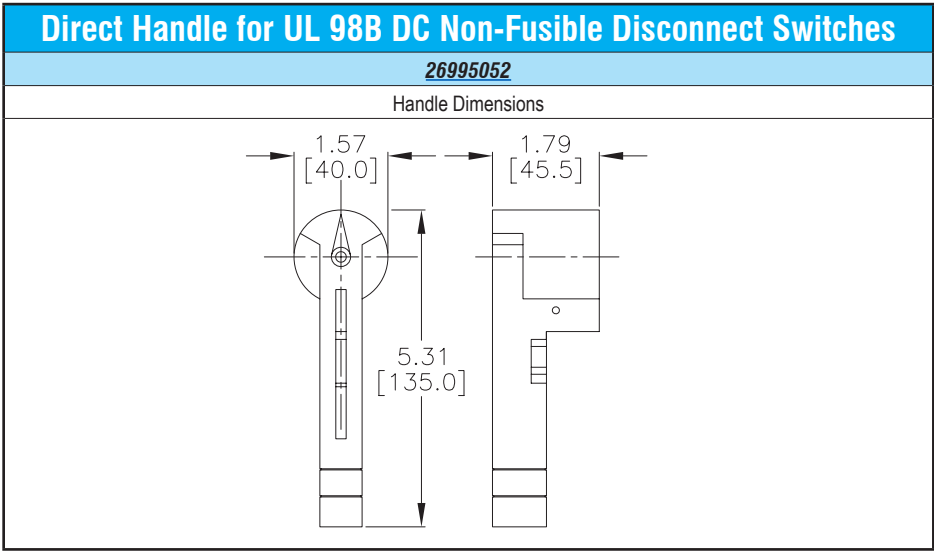
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# Accessories Dimensions



## Handles

[inches/mm]



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# Accessories Dimensions



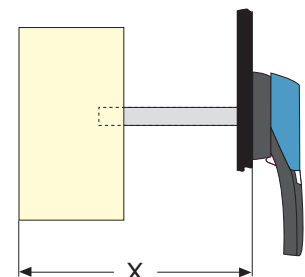
## Shafts for Non-Fusible Disconnect Switches

[inches/mm]

Shafts for Non-Fusible Disconnect Switches				
Shafts for S00, S0 Handle Type	Part Number	Switch Body Rating (A)	Length	
			in	mm
	<a href="#">14070515</a>	16 - 100	5.9	150
	<a href="#">14070520</a>		7.9	200
	<a href="#">14070532</a>		12.6	320
Shafts for S01 Handle Type	Part Number	Switch Body Rating (A)	Length	
			in	mm
	<a href="#">14040520</a>	16 - 100	7.9	200
	<a href="#">14040532</a>		12.6	320
	<a href="#">14040540</a>		15.7	400
Shafts for S1, S2 Handle Type	Part Number	Switch Body Rating (A)	Length	
			in	mm
	<a href="#">14001020</a>	100 - 400	7.9	200
	<a href="#">14001032</a>		12.6	320
	<a href="#">14001040</a>		15.7	400
Shafts for S3 Handle Type	Part Number	Switch Body Rating (A)	Length	
			in	mm
	<a href="#">14011520</a>	600	7.9	200
	<a href="#">14011532</a>		12.6	320
	<a href="#">14011540</a>		15.7	400

Please see our website [www.AutomationDirect.com](http://www.AutomationDirect.com) for complete engineering drawings.

Shaft Length Minimum Dimensions						
Use standard lengths: 7.9 in / 200mm – 12.6 in / 320mm – 15.7 in / 400mm						
Switch Body Rating (A)	Dimension X		Handle Type	Length		Part Number
	in	mm		in	mm	
100 - 400	5.31 - 10.43	135 - 265	S2	7.9	200	<a href="#">14001020</a>
100 - 400	5.31 - 15.16	135 - 385	S2	12.6	320	<a href="#">14001032</a>
100 - 400	5.31 - 18.31	135 - 465	S2	15.7	400	<a href="#">14001040</a>
600	8.70 - 13.50	221 - 343	S3	7.9	200	<a href="#">14011520</a>
600	8.70 - 18.23	221 - 463	S3	12.6	320	<a href="#">14011532</a>
600	8.70 - 21.38	221 - 543	S3	15.7	400	<a href="#">14011540</a>

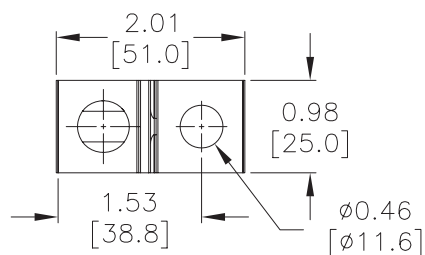


# Accessories Dimensions

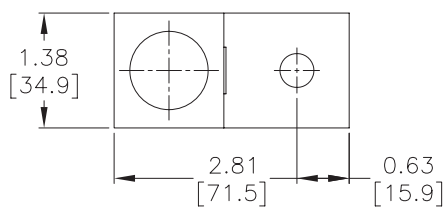


## Lugs

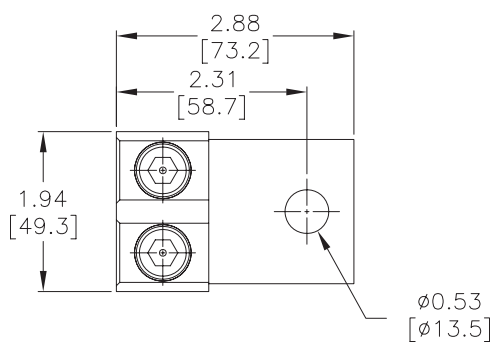
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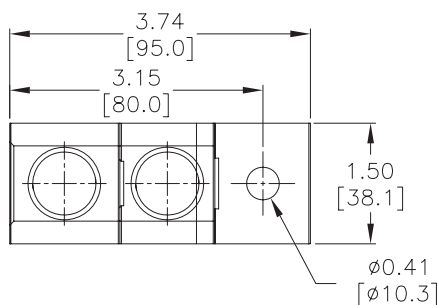
39542020, 39543020, 39544020



39543040



39543041



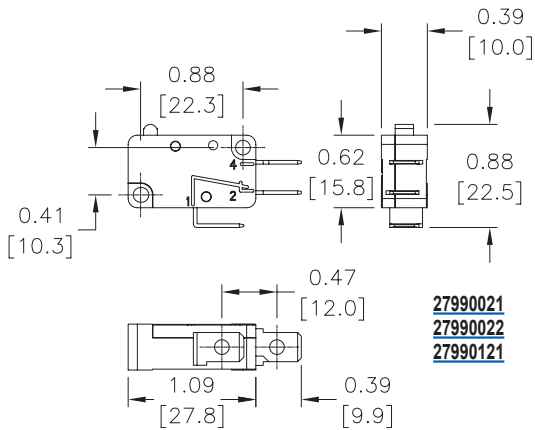
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Please see our website [www.AutomationDirect.com](http://www.AutomationDirect.com) for complete engineering drawings.

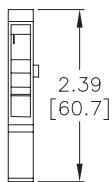
# Accessories Dimensions

## Auxiliary Contacts and Additional Poles

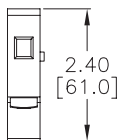
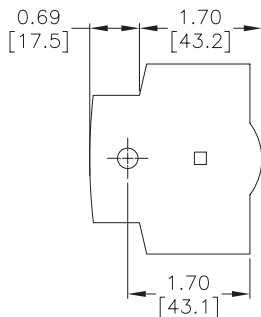
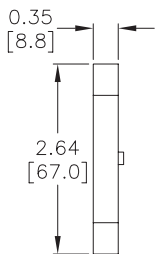
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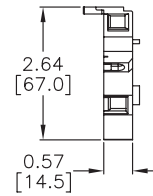
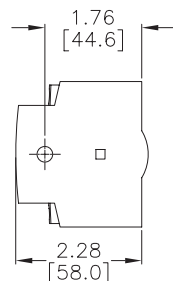
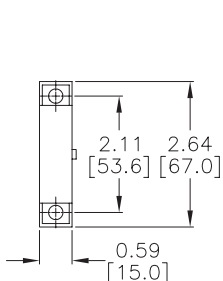
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**27990022**  
**27990121**



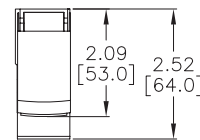
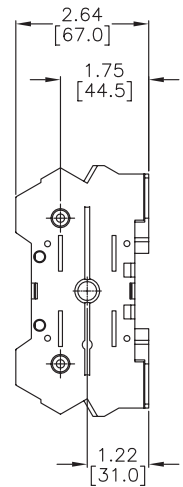
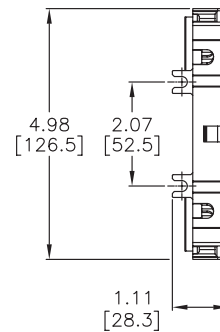
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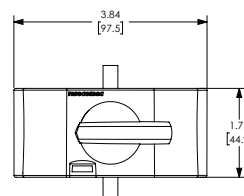
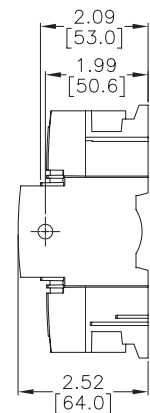
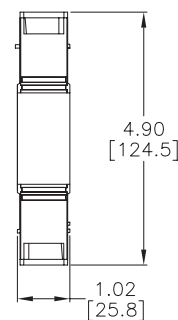
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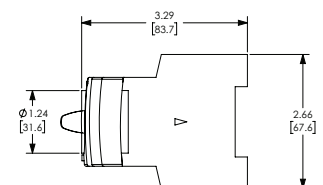
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**22011006**  
**22001010**  
**22005011**  
**22009011**



**22696009**



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# Disconnect Switches

## Introduction

### **UL®/CSA® Standards for Disconnect Switches**

#### **UL 98 – Enclosed and Deadfront Switches (CSA C22.2 No. 4)**

These requirements cover enclosed or deadfront switches, with or without provision for fuses, at 600V or less. These products are used as disconnecting means without restrictions; they are heavy-duty products requiring 2 inches (50mm) minimum of creepage distance between phases, which gives maximum safety for users and installation. The short-circuit withstand of these products goes up to 200kA.

#### **UL 489 – Molded Case Switches (CSA C22.22 No. 5)**

These requirements cover molded case circuit breakers, molded case switches and fused molded case switches, rated at 600V or less and 6000A or less.

### **NFPA® 79 Electrical Standard for Industrial Machinery**

The following types of machines are identified as industrial machinery:

- Metalworking machine tools, including machines that cut or form metal
- Plastics machinery
- Wood machinery, including woodworking, laminating and sawmill machines
- Assembly machines
- Material handling machines, including industrial robots and transfer machines
- Inspection and testing machines, including coordinate measuring and in-process gauging machines

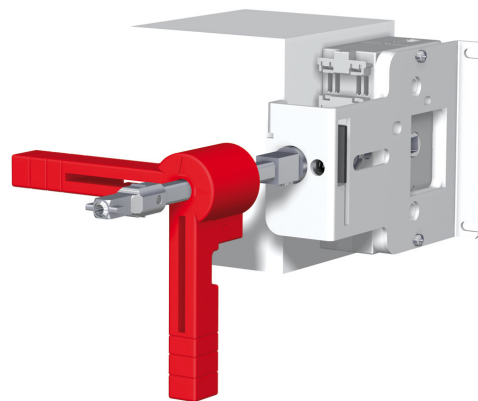
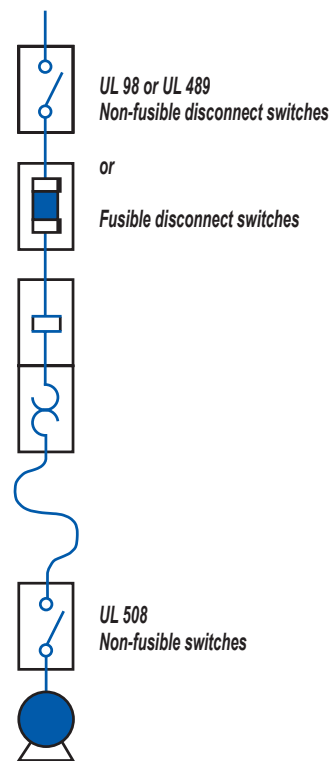
### **UL® Standards for Electrical Machinery**

#### **UL 508 – Industrial Control Equipment (CSA C22.2 No. 14)**

These requirements cover manual, magnetic and solidstate starters and controllers, overload relays, pushbuttons, selector switches and control lights. These products are smaller, requiring only a creepage distance between phases of 0.50 inch (12.7 mm). Their use as a disconnecting means is limited to local disconnection of motors. These products can be used as a disconnect means only when they have been additionally tested "suitable as motor disconnect." This additional testing ensures that the switch has a proper closing capacity on a short circuit.

UL 508 devices **cannot** be used as main disconnect of an electrical panel, e.g., at the entrance of control panels. A manual motor controller marked "suitable as motor disconnect" shall be installed only on the load side of the branch circuit protective device [UL 508A 30.3.3 and NEC 430.109 (6)].

#### **Typical Control Panel**



### **Meeting the requirements of UL508A and NFPA79**

#### **The disconnect shall be operable independent of the door position.**

The disconnect must be operable, by qualified persons, independent of the door position without the use of accessory tools or devices.

**Note:** NFPA 79; Paragraph 5.3.3.1 (5).

An operating mechanism for the disconnecting means shall be operable independent of the door position without the use of accessory tools or devices.


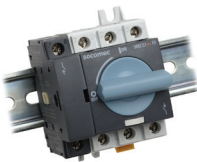



**Note:** UL 508A; Paragraph 66.6.3 c.

# Non-Fusible Disconnect Switches



## Selection Guide

- Which application?
- Which function?
- Which operation handle?
- Which type of breaking?

Machine Control			Power Distribution	
UL 98 Compact Non-Fusible Disconnect Switches	UL 508 Non-Fusible Disconnect Switches*	UL 508 Non-Fusible Enclosed Disconnect Switches	UL 98 Non-Fusible Disconnect Switches	UL 98B DC Non-Fusible Disconnect Switches
				
<a href="#">22013003</a> <a href="#">22013006</a> <a href="#">22003010</a>	<a href="#">22003000</a> , <a href="#">22003001</a> <a href="#">22003002</a> , <a href="#">22003003</a> <a href="#">22003004</a> , <a href="#">22003006</a> <a href="#">22003008</a>	<a href="#">22143503</a> <a href="#">22243503</a> <a href="#">22243506</a>	<a href="#">27003011</a> , <a href="#">27004011</a> <a href="#">27003021</a> , <a href="#">27004021</a> <a href="#">27003041</a> , <a href="#">27003060</a>	<a href="#">27DC3011</a> <a href="#">27DC4011</a> <a href="#">27DC3021</a> <a href="#">27DC4021</a>

Applications					
Main switchboard		✓	✓	✓	✓
Distribution panel		✓	✓	✓	✓
Emergency disconnect		✓	✓	✓	✓
Local safety disconnect (padlockable)		✓	✓	✓	✓
Photovoltaic disconnect					✓
Enclosed switches		✓	✓	✓	✓
Functions					
3/4 pole non-fusible disconnect switch		✓	✓	✓	✓
Characteristics					
Operation	Manual (rotating)	✓	✓	✓	✓
Direct operation handle	Front	✓	✓	✓	✓
External operation handle	Front	✓	✓	✓	✓
	Right side	✓	✓		
Indication of breaking	Positive break indication	✓	✓	✓	✓
Switch body	Modular	✓	✓		

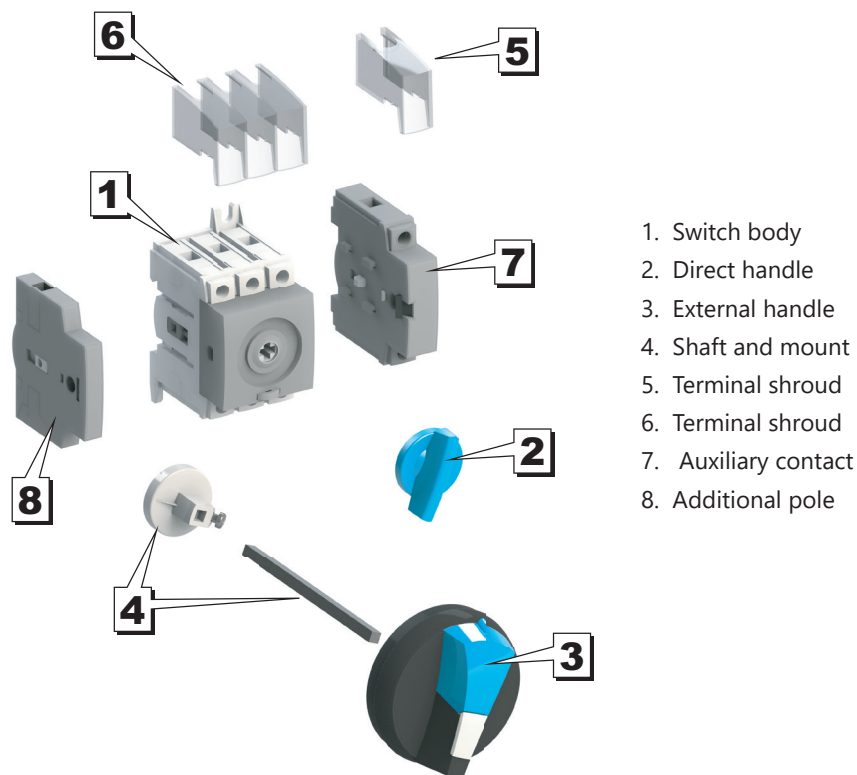
\* Note: These part numbers are direct replacements for previous part numbers with a "-UL" suffix. They have identical technical specs, form, fit and function. There is no change in agency approvals, the UL mark, listing, or File numbers E173959 and E201138.

# Non-Fusible Disconnect Switches

## Assembly of Accessories

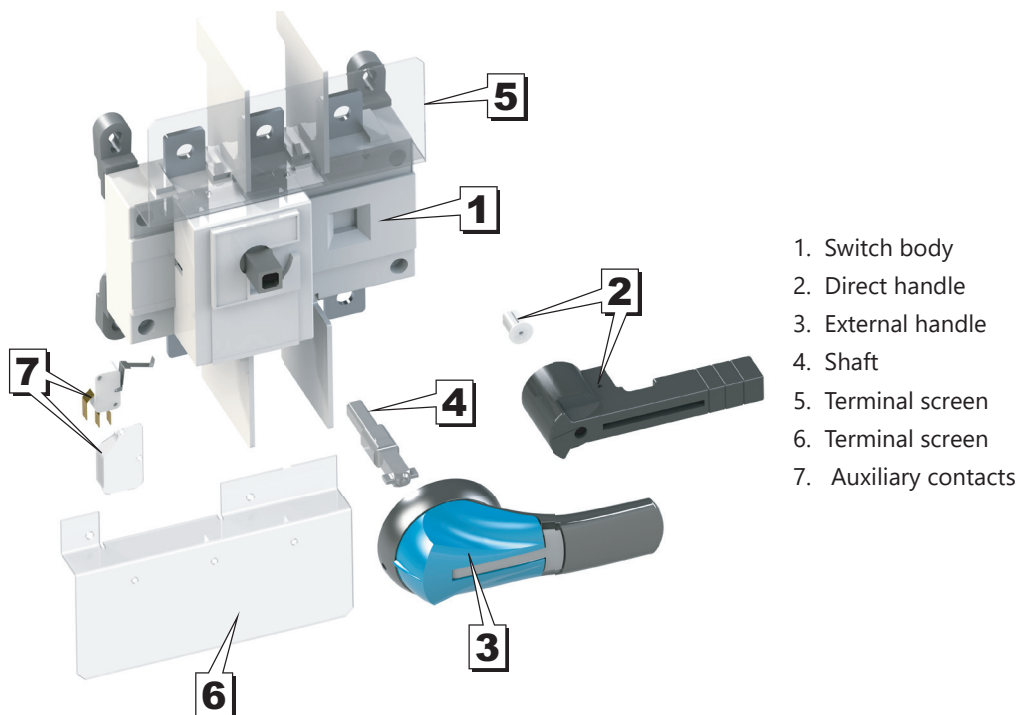


### Non-fusible 16 - 100A Disconnect Switches Accessories



1. Switch body
2. Direct handle
3. External handle
4. Shaft and mount
5. Terminal shroud
6. Terminal shroud
7. Auxiliary contact
8. Additional pole

### Non-fusible 100 - 600A Disconnect Switches Accessories



1. Switch body
2. Direct handle
3. External handle
4. Shaft
5. Terminal screen
6. Terminal screen
7. Auxiliary contacts