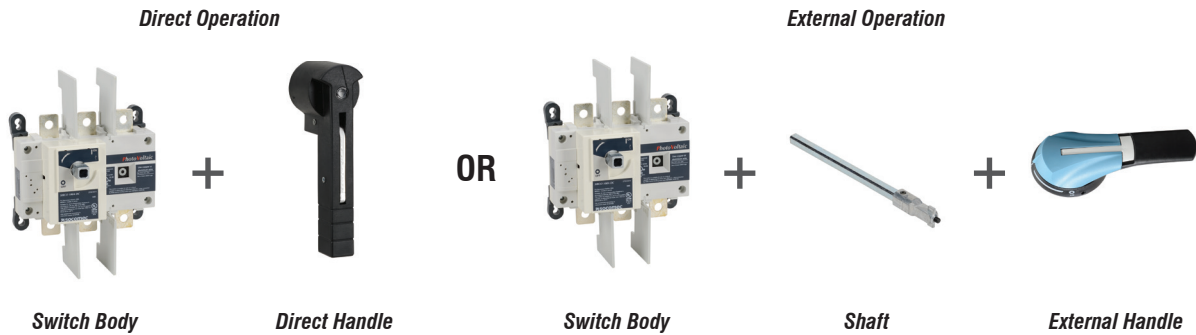


# SIRCO UL 98B DC Non-Fusible Disconnect Switches

To assemble a switch, please select:



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	
<a href="#">27DC4011</a>			1000VDC	4	
<a href="#">27DC3021</a>		250	600VDC	3	
<a href="#">27DC4021</a>			1000VDC	4	

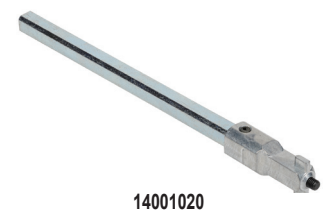
Handles – Defeatable and Lockable						
Part Number	Description	Switch Body Rating (A)	Handle Color	Handle Type	NEMA/UL Type	Price
<a href="#">26995052</a>	Mounts directly on switch, no shaft required*	100-400	Black	-	-	
<a href="#">142F2111</a>	External front handles, shaft required	100-400	Black/Blue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



\* 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	
<a href="#">14001032</a>			12.6	320	
<a href="#">14001040</a>			15.7	400	



# 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	



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	
<a href="#"><u>27990022</u></a>	Auxiliary contact block: 1 Form C, 10A @ 125VAC, 2/pk			1 NO / 1 NC	
<a href="#"><u>27990121</u></a>	Auxiliary contact block: 1 Form C, 1A @ 125VAC, low impedance		C Type low impedance	1 NO / 1 NC	
<a href="#"><u>27990122</u></a>	Auxiliary contact block: 1 Form C, 1A @ 125VAC, low impedance, 2/PK			1 NO / 1 NC	



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	
<a href="#"><u>27988021</u></a>				Load	
<a href="#"><u>27984021</u></a>			4	Line or load	



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	



39542020

# SIRCO UL 98B DC Non-Fusible Disconnect Switches

## Technical Characteristics

Characteristics According to UL 98 / CSA 22.2#4 and UL 98B		
	27DC3011, 27DC4011	27DC3021, 27DC4021
<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

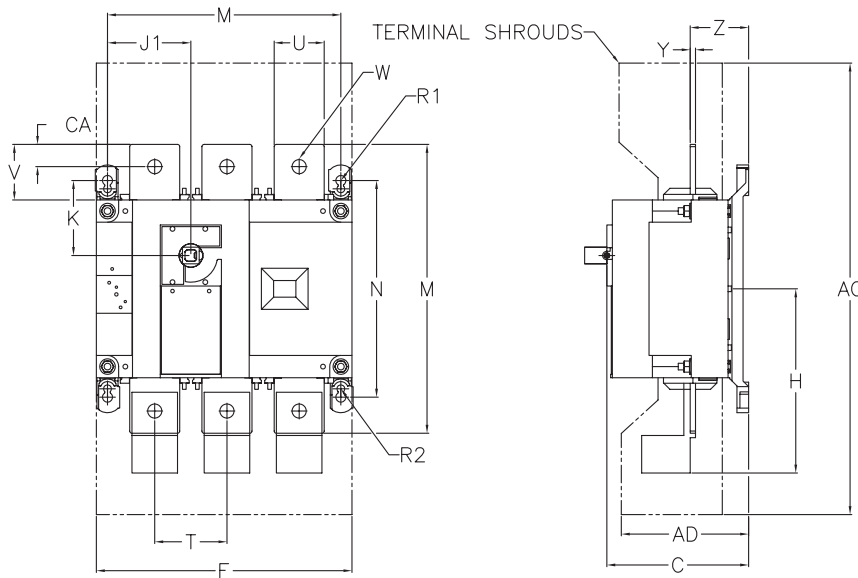
Note: Short-circuit rating achieved when used with corresponding fuse type and max fuse rating.

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		
	27DC3011 27DC4011	27DC3021 27DC4021
<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

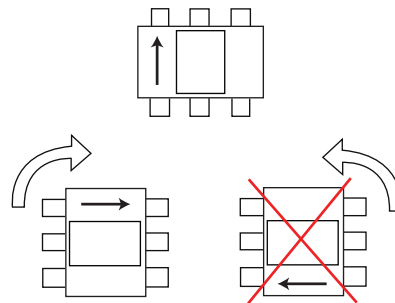
# SIRCO UL 98B DC Non-Fusible Disconnect Switches

## 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	0.6
	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



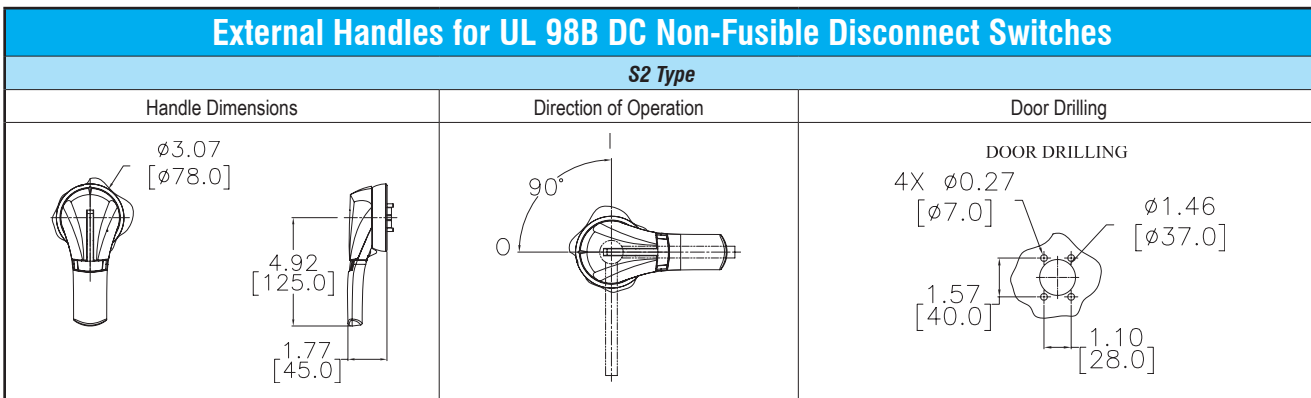
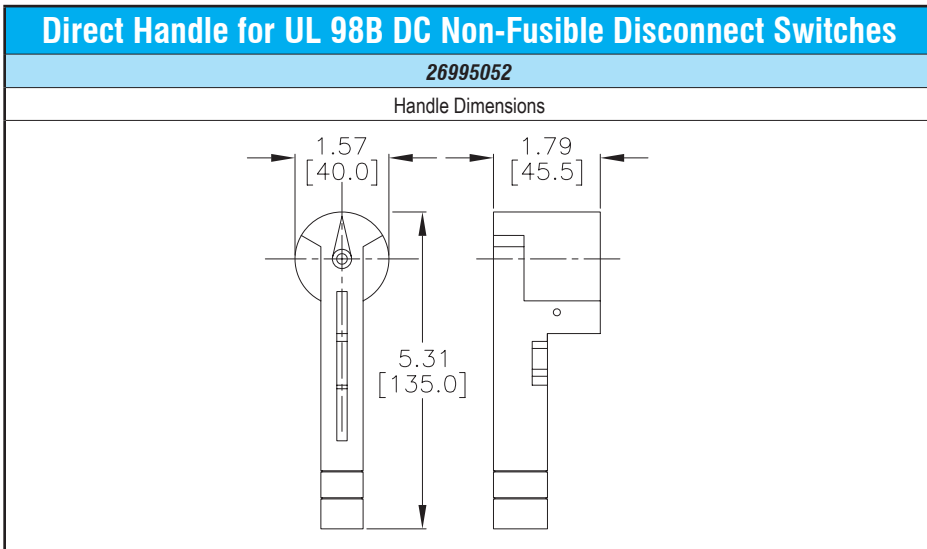
Note: The switch will operate correctly when rotated clockwise 90 degrees.  
The switch will not operate correctly when rotated counterclockwise 90 degrees.

Please see our website for complete engineering drawings.

# Accessories Dimensions

## Handles

[inches/mm]



Please see our website for complete engineering drawings.

# Accessories Dimensions

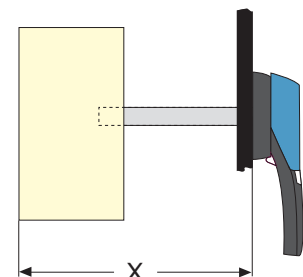
## Shafts for Non-Fusible Disconnect Switches

[inches/mm]

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

Please see our website for complete engineering drawings.

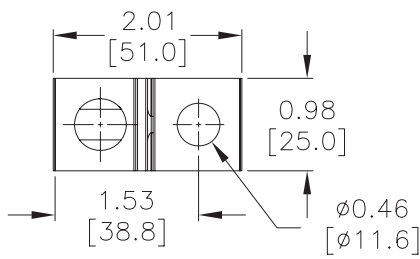
Shaft Length Minimum Dimensions						
Use standard lengths: 7.9 in / 200mm – 12.6 in / 320mm – 15.7 in / 400mm						
Switch Body Rating (A)	Dimension X		Handle Type	Length		Part Number
	in	mm		in	mm	
100 - 400	5.31 - 10.43	135 - 265	S2	7.9	200	14001020
100 - 400	5.31 - 15.16	135 - 385	S2	12.6	320	14001032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



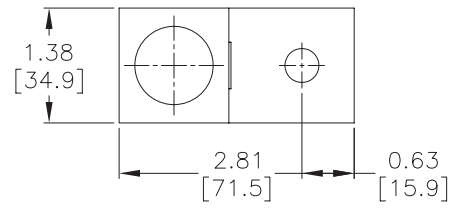
# Accessories Dimensions

## Lugs

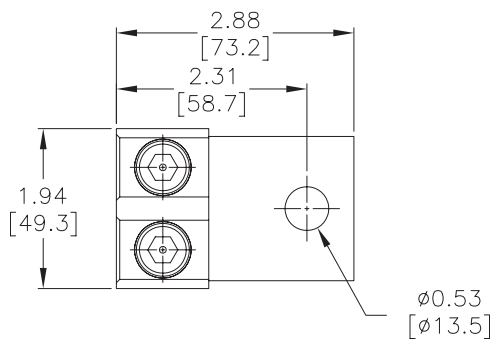
[inches/mm]



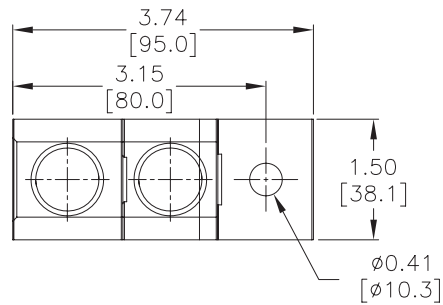
39542020, 39543020, 39544020



39543040



39543041



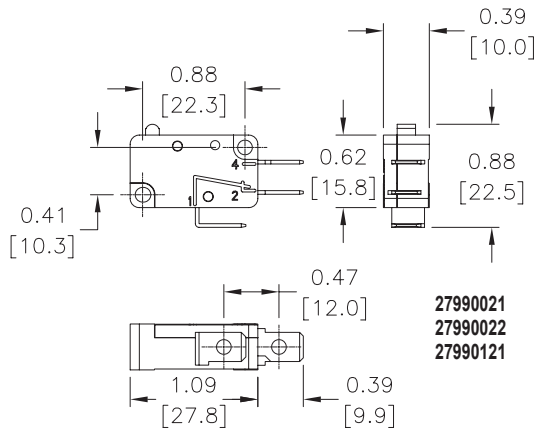
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Please see our website for complete engineering drawings.

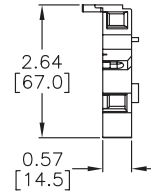
# Accessories Dimensions

## Auxiliary Contacts and Additional Poles

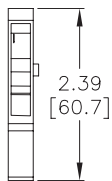
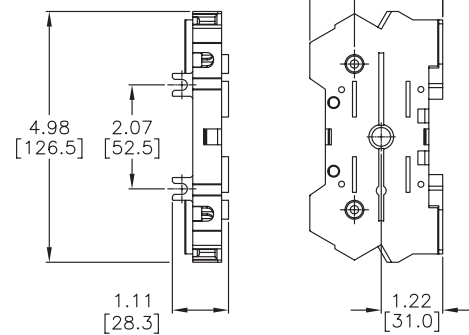
[inches/mm]



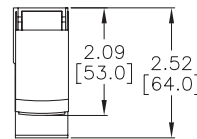
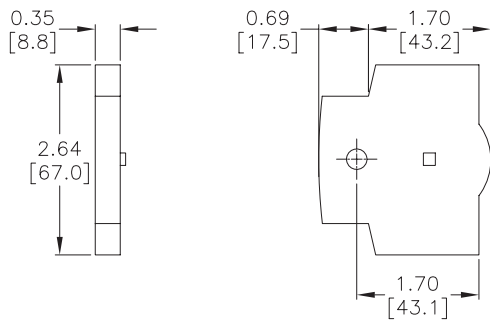
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**27990121**



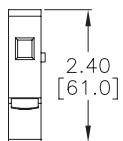
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**3999U042**



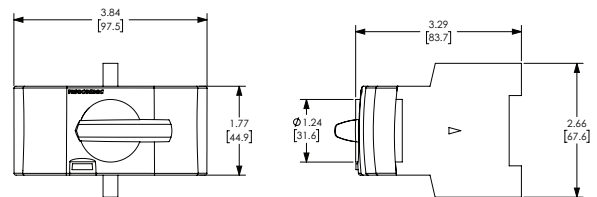
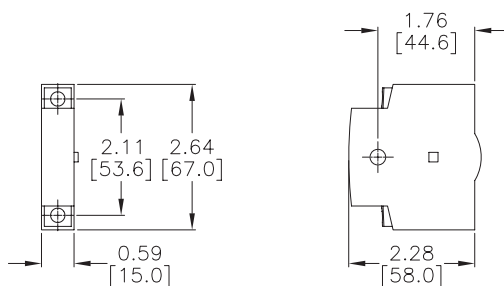
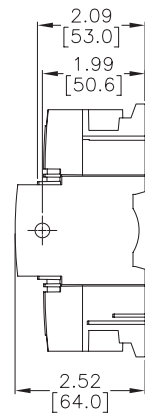
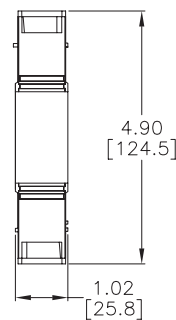
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**22990011-UL**  
**39990701**  
**39990702**



**22011003 22011006**  
**22001010-UL**  
**22005011**  
**22009011**



**22001000-UL**  
**22001001-UL**  
**22001002-UL**  
**22001003-UL**  
**22001004-UL**



**22696009**

Please see our website for complete engineering drawings.



## 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:

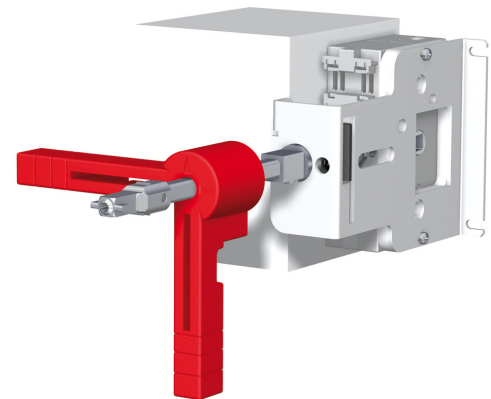
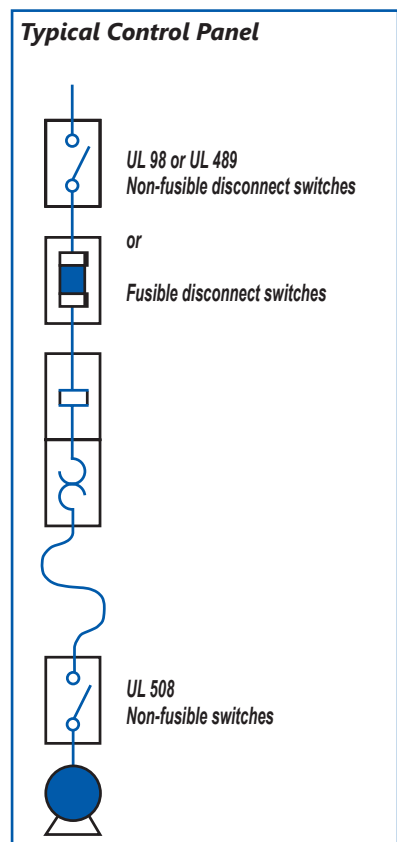
- Metalworking machine tools, including machines that cut or form metal
- Plastics machinery
- Wood machinery, including woodworking, laminating and sawmill machines
- Assembly machines
- Material handling machines, including industrial robots and transfer machines
- Inspection and testing machines, 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)].



### **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).


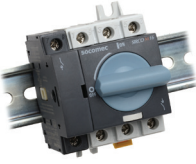



An operating mechanism for the disconnecting means shall be operable independent of the door position without the use of accessory tools or devices.

**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?

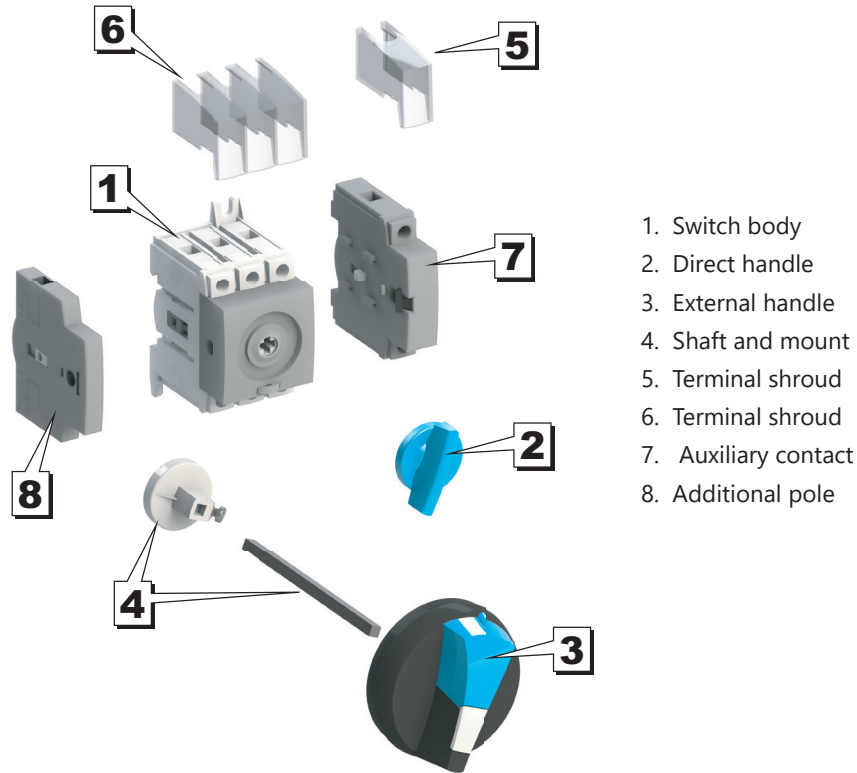
Machine Control			Power Distribution	
UL 98 Compact Non-Fusible Disconnect Switches	UL 508 Non-Fusible Disconnect Switches	UL 508 Non-Fusible Enclosed Disconnect Switches	UL 98 Non-Fusible Disconnect Switches	UL 98B DC Non-Fusible Disconnect Switches
				
22013003 22013006 22003010-UL	22003000-UL, 22003001-UL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

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	✓	✓	✓	✓	✓
Indication of breaking	Front		✓	✓	✓	✓
	Right side		✓	✓		
Switch body	Modular	✓	✓	✓		

# Non-Fusible Disconnect Switches

## Assembly of Accessories

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



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

