

## 3SE03 North American Limit Switches

## General Information

## Features

Modular plug-in



Prewired receptacle with pin connector



Prewired cable



## Features

- UL Listed, CSA Certified.
- UL File: E47512
- All Metal Captive Screws.
- Keyed, Four-Directional Head.
- Steel-Reinforced Diaphragm Seal Between Operational Head And Switch Body.
- Permanent Instructions for Adjusting Operational Head.
- Modular, Plug-In Housing
  1. Heavy-Duty, Bifurcated, Plug-In Prongs.
  2. Ample Receptacle Wiring Space with 1/2 - NPT threaded conduit opening.
  3. Stepped Terminals On Single Pole; Deep Center Trough On Double Pole.
- NEMA Type 6P Submersible
  1. Completely Sealed With Epoxy.
  2. SOOW-A Cable or Prewired Receptacle With Pin Connector.
  3. Factory wired cable features a 350 pound pullput capacity.
- Rotary heads are field convertible CW, CCW, or both without special tools.

## Design

## Modular Plug-In Housing

These heavy duty plug-in limit switches may be provided as complete devices using a composite catalog number; or, separately as components; operating head, plug-in module and base receptacle.

## Example:

Complete Switch:

## 3SE03-AR1

Single Pole, Double Throw contacts with Side Rotary, Momentary Head

Components

3SE03-SA<sup>①</sup>

Single Pole, Double Throw Plug-in Module

## 3SE03-DR1

Side Rotary Head, Momentary

3SE03-RA<sup>①</sup>

Standard, Single Pole Receptacle, 1 NO + 1 NC

Since components may be interchanged, operating heads, plug-in modules and receptacles may be combined to satisfy most of your everyday limit switch requirements. This leads to less inventory with greater flexibility.

Operating heads include side rotary; plain and roller plunger; and, wobble. A variety of levers are available.

The zinc die-cast housing has an epoxy finish to protect against corrosion. All screws on the module and head are captive.

## NEMA Type 6P Submersible

These heavy duty prewired, factory sealed switches meet the demanding enclosure requirements of UL (NEMA) Type 3, 4, 4X, 6P, 12, and 13. They are intended for wet environments where the integrity of the threaded conduit and switch body seals must be assured.

The switch body cavity including threaded conduit entry is completely sealed with epoxy. An 8 foot, 5 or 9 conductor SOOW-A cable; or 5 or 9 pin prewired receptacle with pin connector is provided as standard.

Switches are provided as complete devices using composite catalog numbers; or, separately as components; operating head and switch body.

UL (NEMA) Type 6P switches are designed to provide a degree of protection against the entry of water during prolonged submersion at limited depths (tested with a 6 foot head of water for 24 hours).

Both the Modular Plug-in and the (NEMA) Type 6P Submersible styles provide 60 Amp make and 6 Amp break—120V AC and 10 Amp continuous current for 120, 240, 480 and 600V AC. The circuit contact configuration depends on the device selected and the application criteria.

Switches are available with momentary or maintained operating heads; and, single pole, double pole or center neutral (modular, plug-in only) contact configurations.

3SE03 limit switches offer a new standard of reliability and quality in automatic control circuits under heavy duty applications.

<sup>①</sup> Plug-in module and receptacle are keyed.

## 3SE03 North American Limit Switches

Modular, plug-in and NEMA type 6P submersible

## Technical data

Type	Modular, Plug-in and NEMA Type 6P Submersible					
<b>Mechanical life</b>	Side rotary: $13 \times 10^6$ make-break operations minimum All others: $10 \times 10^6$ make-break operations minimum Single Pole: $1 \times 10^6$ operations typical at full load Double Pole: $1 \times 10^5$ operations typical at full load					
<b>Electrical life</b>						
<b>Switching frequency</b>	8 x 10 <sup>3</sup> make-break operations per hour (maximum) Side operated: 0.0012 in. (modular, plug-in housing) Side rotary: 0.0014 in. (modular plug-in). Top operated: 0.0003 in. (modular, plug-in housing)					
<b>Operating point accuracy</b>						
<b>Cable entry</b>	1/2 in.-NPT, Prewired Cable or Prewired Receptacle with Pin Connector					
<b>Ambient temperature</b>	Without Cable: -10° to +121°C, 14° to 250°F With Cable: -10° to +105°C, 14° to 221°F NEMA Type 1, 3, 3S, 4, 4X, 6, 6P, 13; IP67					
<b>Degree of protection</b>						
<b>Conductor size</b>	22–12 AWG (modular, plug-in housing), single or stranded wire 5 or 9 conductor, 16 AWG yellow jacketed type SOOW-A cable (prewired cable) 5 or 9 pin, 0.87 in. (22 mm) diameter receptacle (prewired receptacle with pin connector) Any position Switch body screws: 25–30 lb-in. Operating head screws: 14–18 lb-in.					
<b>Mounting</b>						
<b>Tightening Torque</b>						
<b>NEMA rating</b>	<b>DC, NEMA R300</b>		<b>AC, NEMA A600</b>			
<b>Maximum current at</b>	<b>125V</b>	<b>250V</b>	<b>120V</b>	<b>240V</b>	<b>480V</b>	<b>600V</b>
<b>Make Break</b>	0.22A 0.22A	0.11A 0.11A	60A 6A	30A 3A	15A 1.5A	12A 1.2A
<b>Max. volt-ampere Make Break</b>	28VA 28VA	28VA 28VA	7200VA 720VA	7200VA 720VA	7200VA 720VA	7200VA 720VA
<b>Rated thermal current</b>	DC, 1A		AC, 10A			
<b>Rated operating voltage</b>	DC, 300V		AC, 600V			

Operating temperature <sup>1)</sup> <sup>2)</sup>

Temperature rating	Operation		Temperature range	
	Type	Return	Without cable	With cable
<b>1</b>	Side rotary <sup>3)</sup>	Momentary CW only or CCW only	10°F to 200°F -12°C to 94°C	10°F to 200°F -12°C to 94°C
<b>2</b>	Center neutral Side rotary Side plunger Two-sided plunger Roller side plunger <sup>4)</sup>	Momentary CW or CCW Maintained Momentary Maintained Momentary	14°F to 200°F -10°C to 94°C	14°F to 200°F -10°C to 94°C
<b>3</b>	Top plunger Top roller plunger <sup>4)</sup> Wobble head	Momentary Momentary Momentary	14°F to 250°F -10°C to 121°C	14°F to 221°F -10°C to 105°C

1) Temperature ranges below +32°F (0°C) are based on absence of freezing moisture or water.

2) For temperature rating of specific switch, refer to page 13/70, Operating Heads.



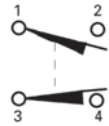
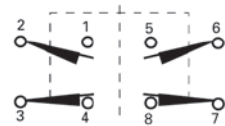







3) For CW only or CCW only operation, upper temperature limit increases to 250°F (121°C) without cable, and 221°F (105°C) with pre-wired cable.



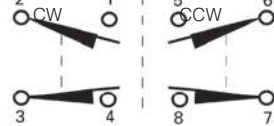

4) Roller direction can be converted in the field.

## 3SE03 North American Limit Switches

Modular, plug-in metal housing

## Complete switches without lever - threaded cable entry:

 <b>Plug-In module type</b>		Standard single pole 1 NO + 1 NC (3SE03-SA)		Standard double pole 2 NO + 2 NC (3SE03-SB)			
 <b>Receptacle type surface mount</b>		Single pole (3SE03-RA) 		Double pole (3SE03-RB) 			
<b>Operating head type</b>		<b>Composite catalog number consisting of head, module and receptacle</b>					
		<b>DT</b>	<b>Catalog Number</b>	<b>List Price \$ 1 unit</b>	<b>DT</b>	<b>Catalog Number</b>	<b>List Price \$ 1 unit</b>
 <b>Side rotary</b> CW and CCW operation convertible to CW only or CCW only	Standard momentary (3SE03-DR1)	▶	3SE03-AR1 ①		▶	3SE03-BR1 ①	
	Standard maintained (3SE03-DM1)	▶	3SE03-AM1		▶	3SE03-BM1	
	Low torqued momentary (3SE03-DL1)	▶	3SE03-AL1 ②			3SE03-BL1 ②	
 <b>Plain side plunger</b>	Momentary (3SE03-DS1)	▶	3SE03-AS1		▶	3SE03-BS1	
 <b>Roller side plunger</b>	Momentary (3SE03-DS3)	▶	3SE03-AS3			3SE03-BS3	
 <b>Two-sided plunger</b>	Maintained (3SE03-DH1)		3SE03-AH1			3SE03-BH1	
 <b>Plain top plunger</b>	Momentary (3SE03-DT1)	▶	3SE03-AT1			3SE03-BT1	
 <b>Roller top plunger</b>	Momentary (3SE03-DT3)		3SE03-AT3		▶	3SE03-BT3	
 <b>Wobble head (without lever)</b>	Momentary (3SE03-DW1)	▶	3SE03-AW1		▶	3SE03-BW1	

			Plug-In module type			Center neutral Double pole 2 NO + 2 NC (3SE03-SN)		
			Receptacle type surface mount			Center neutral (3SE03-RB) 		
Operating head type						Composite catalog number consisting of head, module and receptacle		
						DT	Catalog Number	List Price \$ 1 unit
	Side rotary (momentary)	Center	(3SE03-DN1)	▶	3SE03-NN1①			
		Neutral	(3SE03-DN2)	▶	3SE03-NN2②			

① 5° pretravel to operate contacts.

② 15° pretravel to operate contacts.