

LIMIT SWITCHES



LS-1N



LS-1S



OSLS - 1N



LS-1N(P)



LS-1S(P)



SLS - 1N(P)



SLS-1S(P)



SSLS - 1N(P)



SSLS-1S(P)



SLS-12



SLS - 21



LS-12



LS-21



LS-12(P)



LS-21(P)



LS-22



LS-22(P)



LS-22(PA)



**ELS-1N/1S
ESLS-1N/1S**



**ELS-1N/1S(RL)
ESLS-1N/1S(RL)**



OSLSE(10)



**ELS-12/21
ESLS-12/21**



**ELS-12/21(RL)
ESLS-12/21(RL)**



**OLSE-19(N)/(S)
OLSSE-19 (N)/(S)**



**OLSE-10(N)/(S)
OLSSE-10 (N)/(S)**



**OLSE-19-12/21/22
OLSSE-19-12/21/22**



**OLSE-10-12/21/22
OLSSE-10-12/21/22**

GSTIN No. 09AAECS4924J1Z2



ISO 9001:2015
Certified



SHRI TULSI SWITCHGEAR PVT. LTD.

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[SINCE-1989]

LIMIT SWITCHES

TECHNICAL DATA :-

- ▶ Mechanism :- Normal Action & Snap Action
- ▶ Housing :- Aluminium pressure die-casting
- ▶ Utilization category :- AC-11, AC-12, AC-15 & DC -13
- ▶ Thermal Current (I_{th}) :- 10 Amps
- ▶ Frequency of operation :- 2500 operation /per hrs.
- ▶ Mechanical Life :- 15 million switching operation
- ▶ Short Circuit Protection :- 20 Amps
- ▶ Cable Entry :- 3/4" - 20 mm
- ▶ Rating :- 10 Amps, 500 V AC
10 Amps, 600 V DC
- ▶ Terminal Capacity :- 2.5 mm Solid Stranded
- ▶ Degree of Protection :-
(As per IS-2147-1962)
1) Open type : IP-00 2) With Protective Cover:- IP-40
3) Cast Metal : IP-43 4) Oil Tight :- IP-65
- ▶ I.S. Reference :- IS : 13947-5-1-1993, IS : 6875-1-1973, IS: 13947-5-13

- ▶ Making and Breaking Capacity :- AC-11 duty (40-60 Hz. 0.3 to 0.1 pf)

Voltage V	Rated Operating Current (A)		Rated Making Capacity (A)		Rated breaking Capacity (A)	
	Normal	Snap	Normal	Snap	Normal	Snap
24	6	3	90	30	60	30
125	6	3	90	30	60	30
220	6	3	90	30	60	30
380	6	3	90	30	60	30
415	4	3	90	30	60	30
500	4	3	90	30	60	30

- ▶ Breaking Capacity (D.C)

Voltage V	Resistive Load (DC1)A		Inductive Load (DC11) A	
	Normal	Snap	Normal	Snap
24	10	7	10	7
110	2.2	1.50	1.30	0.91
220	0.9	0.62	0.40	0.28
440	0.4	0.28	0.20	0.14
600	0.3	0.21	0.14	0.10

- ▶ Contact Life :- A.C

Breaking Current Amp.		1	3	6	10
Switching Operation (in millions)	NORMAL	15	5	2.5	1
	SNAP	10	3	2	0.8



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LIMIT SWITCHES

DESCRIPTION :-

"STS" Limit Switches have been designed to convert mechanical motion into an electrical control signal. The switches meet the Hi-Tech requirement of Switching technology demanding Sophistication, Perfection and Reliability. These are designed for accuracy of operation, long mechanical life to withstand shock and vibration condition and to keep operating safety in highly contaminated atmosphere at a temperature of -20°C to $+65^{\circ}\text{C}$. Mechanical motion is generally in the form of a cam, a mechanical component moving towards a predetermined position. The cam engages the limit switch roller Lever or plunger and in turn makes or breaks an electrical contact inside the switch. The electrical control circuit is used to limit, position or reverse motion travel or to initiate another operating sequence.

APPLICATION :-

"STS" Limit Switches are normally used where actuation relatively fast or for snap action is relatively slow. These can also be used for counting, sorting or as a safety device. Typical application of Limit Switches in the control circuit of solenoids, control relays, motor starters, power press, conveyers, hoists, elevators and various type of motor driving mechanism. These are used in automatic control circuit where mechanical position have to be translated into electrical circuit for controlling remote starters.

CONTACT CONFIGURATION :-

"STS" Limit switches having following contact configuration :-

- 1) Normal Action :- a) (1NO+1NC) b) (1NO+2NC) c) (2NO+1NC) d) (2NO+2NC)
- 2) Snap Action :- a) (1NO+1NC)

SALIENT FEATURES :-

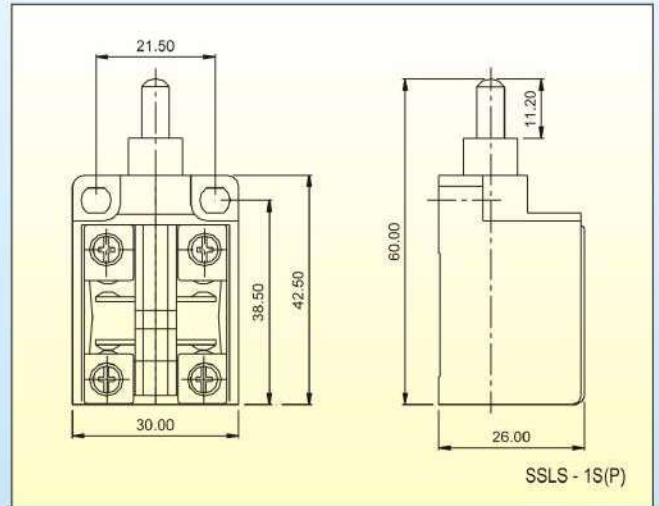
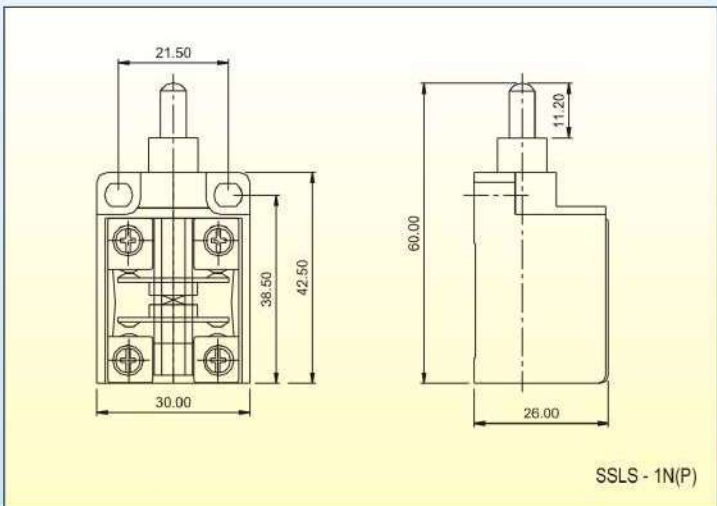
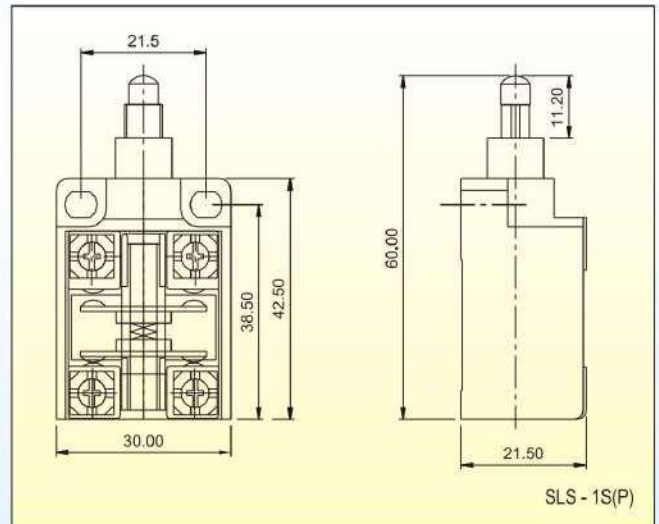
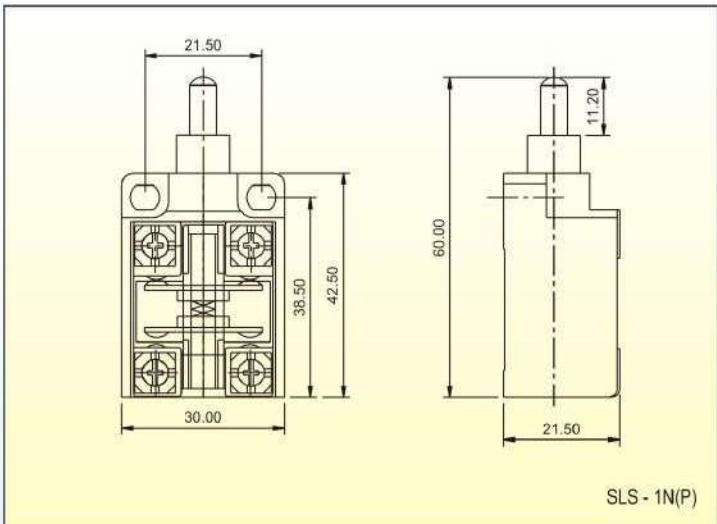
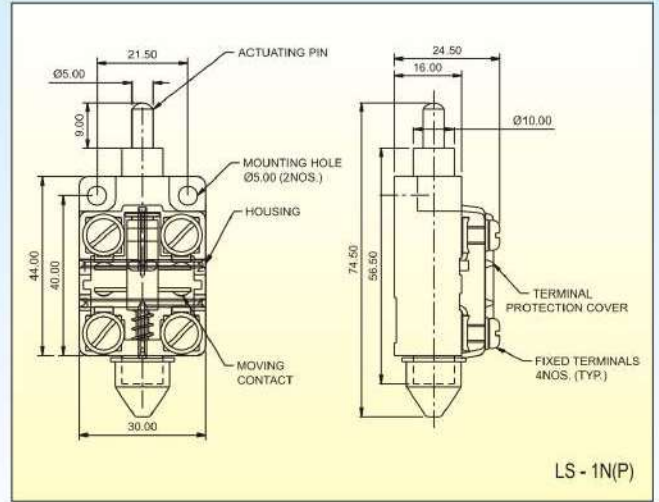
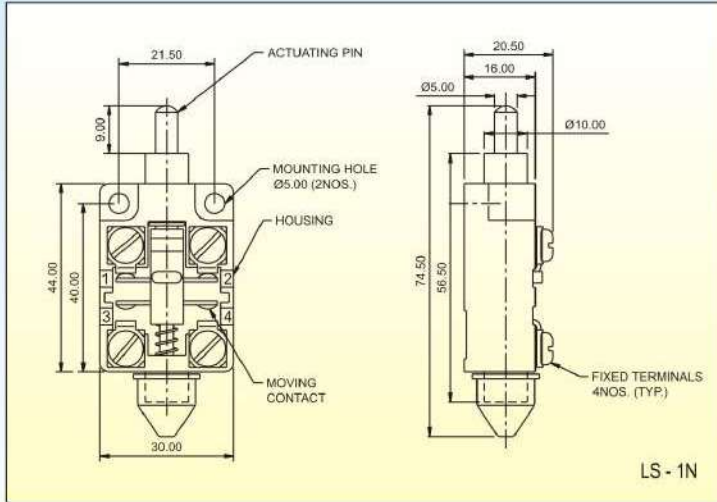
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|---|---|
| <ol style="list-style-type: none">1. Liberal spacing is provided around the terminal for easy wiring.2. The enclosure is compact, dust & vermin proof with pressure die cast aluminium.3. The switches with IP-65 protection are completely oil tight, water tight with a shaft seal between the lever and the head. Rubber diaphragm combined with the sealing ring prevents oil see page.4. These are designed for accuracy operation, Long mechanical life and to keep operating safety at a temperature -20°C to $+65^{\circ}\text{C}$5. These are having an outstanding long mechanical life of 15 million switching operations. | <ol style="list-style-type: none">6. The mechanical switching accuracy is maintained 0.01 mm even after 10 thousands switching operation.7. The contact blocks can be taken out easily and replaced without risk of changing the operating characteristics of limit switches.8. Limit Switches are also available with a transparent protective cover to prevent dust setting on the contacts.9. Contacts are made up of special silver alloy which ensure satisfactory operation even at low voltage. Contacts are rated at 10 Amps.10. The normal roller Levers are also available with highly grade wear resistant phenolic and thermosetting plastic moulded rollers. |
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LIMIT SWITCHES

(Dimensions in mm)

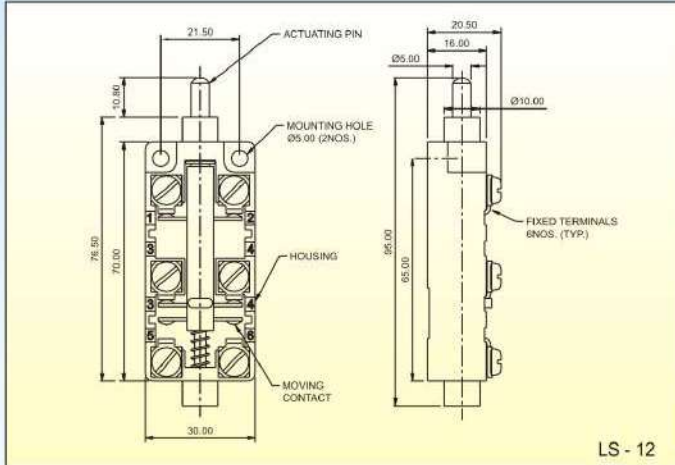




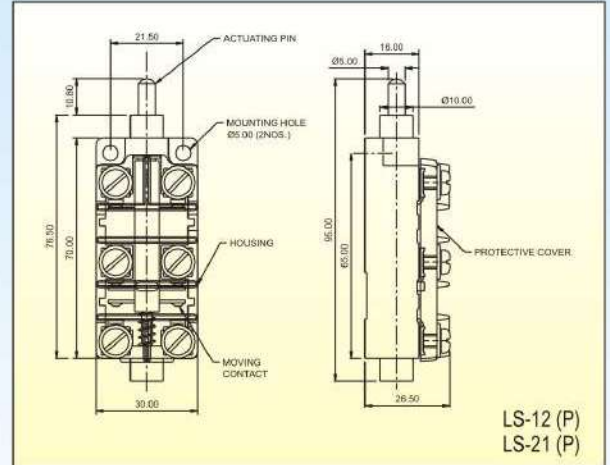
[SINCE-1989]

LIMIT SWITCHES

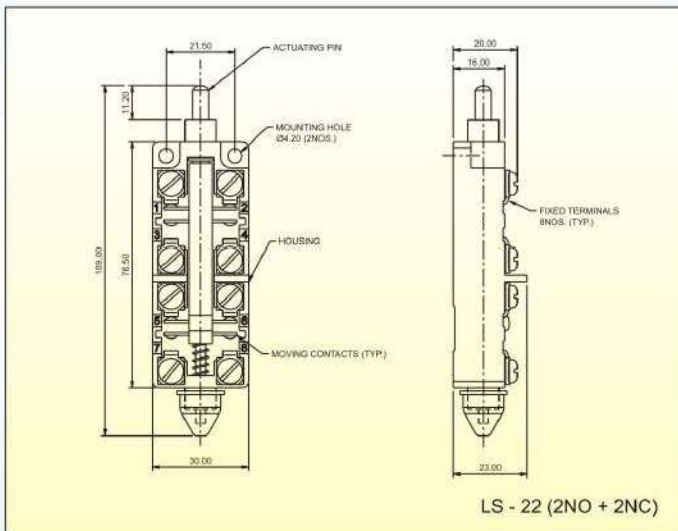
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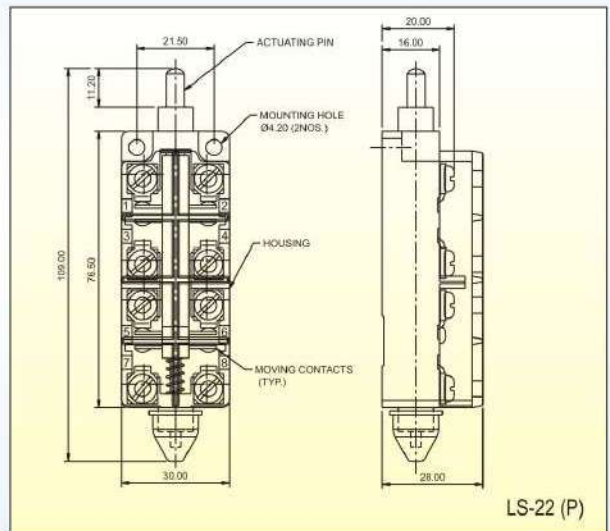
LS - 12



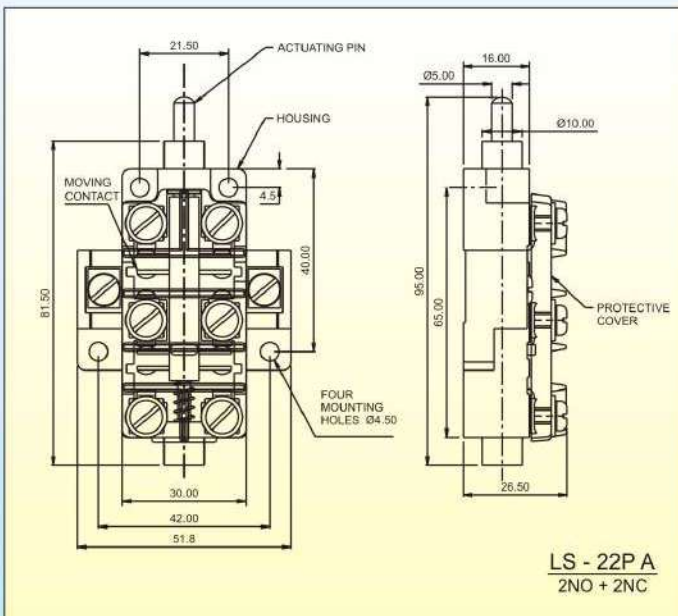
LS-12 (P)
LS-21 (P)



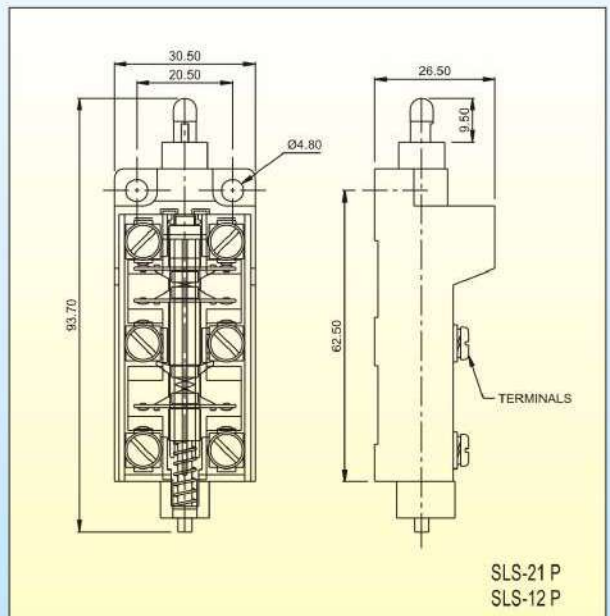
LS - 22 (2NO + 2NC)



LS-22 (P)



LS - 22P A
2NO + 2NC

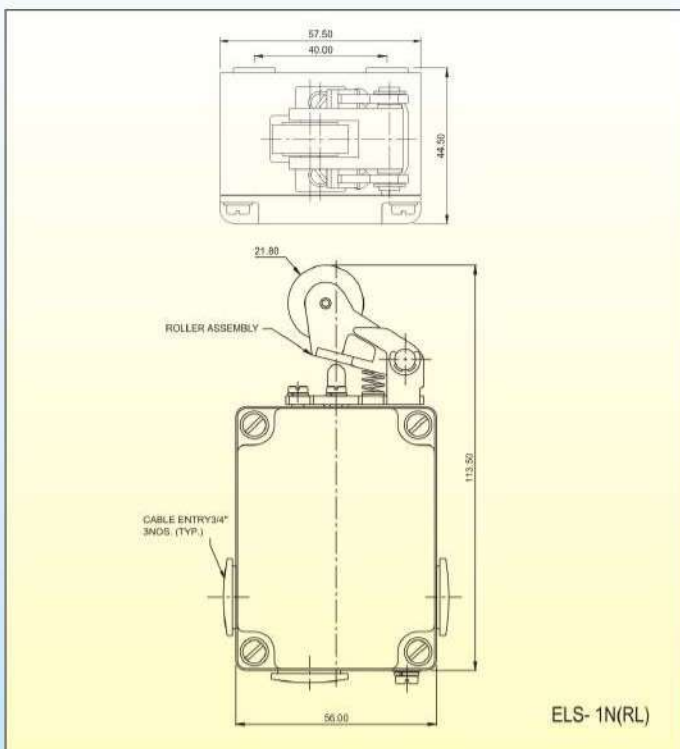
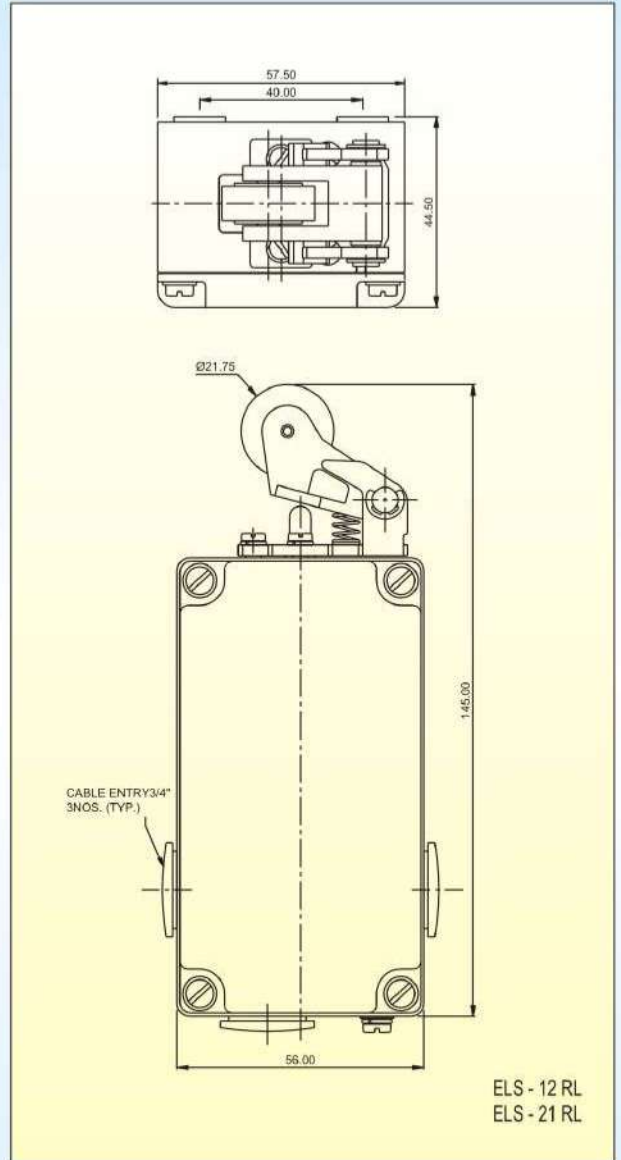
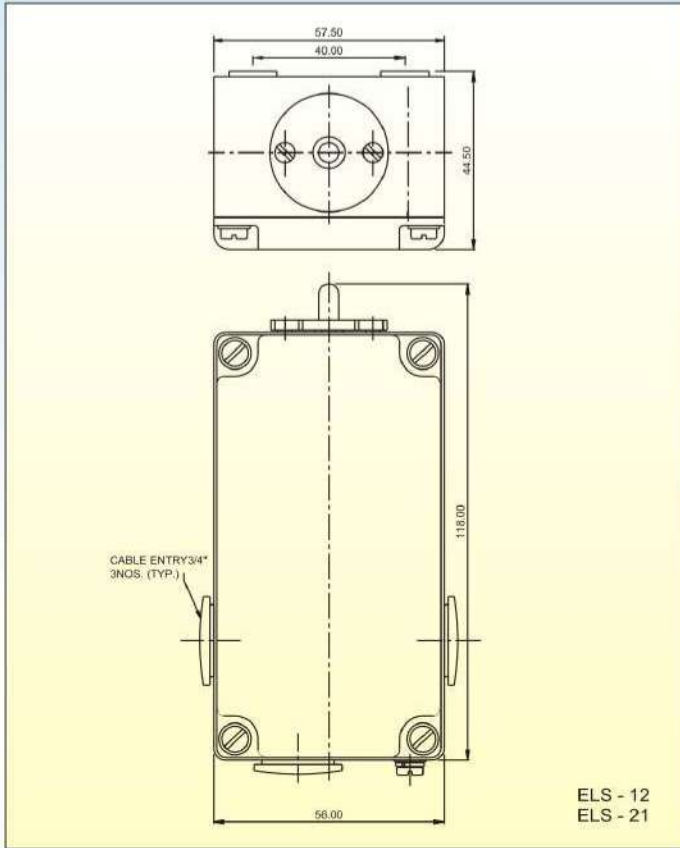


SLS-21 P
SLS-12 P



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LIMIT SWITCHES (Dimensions in mm)



Authorised Dealer :-

GSTIN No. 09AAECS4924J1Z2



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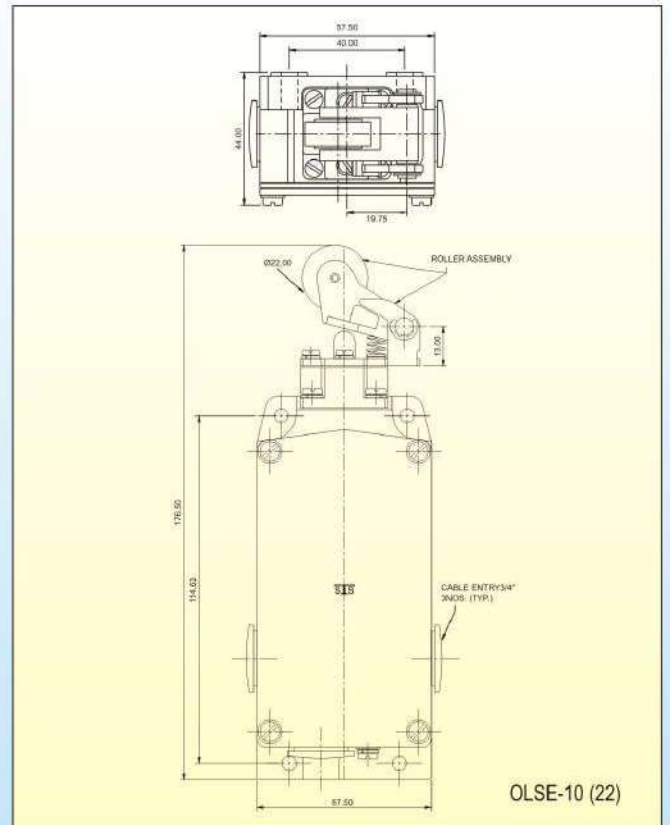
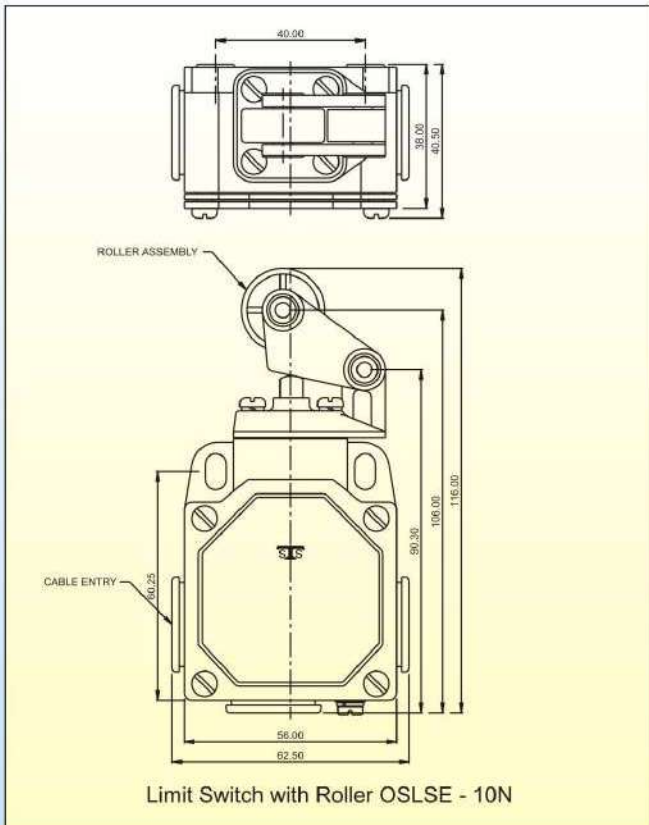
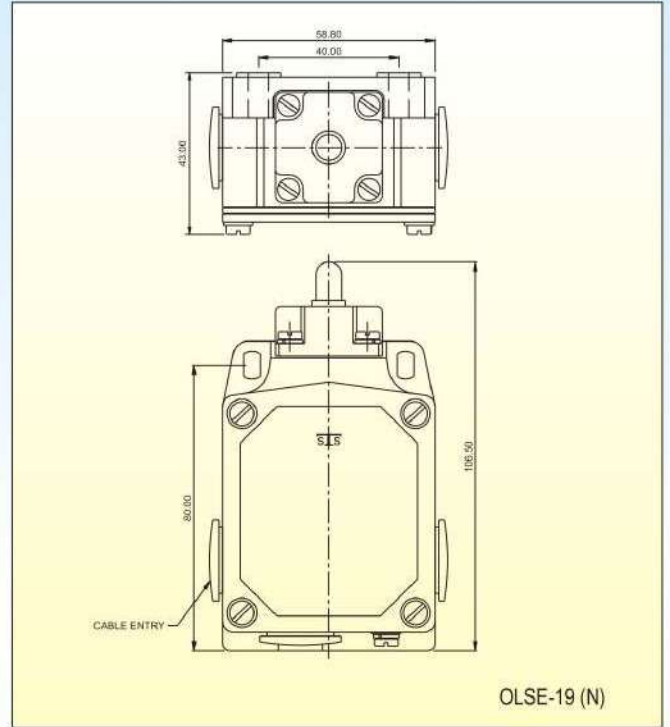
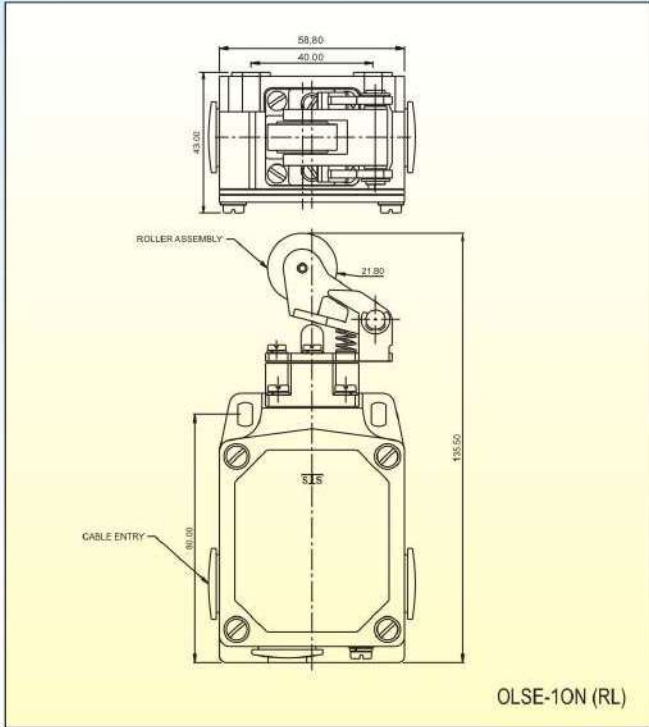
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[SINCE-1989]









LIMIT SWITCHES (Dimensions in mm)





[SINCE-1989]

LIMIT SWITCHES SELECTION TABLE

Execution	Design	CONTACT		Product Code	Enclosure Degree Of Protection As Per I.S.S. Ref. : 2147-1962
		Arrangement	No of Contacts		
	With Push Rod	Normal Action	1NO + 1NC	LS-1N	IP-00
	With Push Rod & Plastic Protective Cover	Normal Action	1NO + 1NC	LS-1N(P)	IP-40
	With Push Rod	Snap Action	1NO + 1NC	LS-1S	IP-00
	With Push Rod & Plastic Protective Cover	Snap Action	1NO + 1NC	LS-1S(P)	IP-40
	With Push Rod & Plastic Protective Cover	Normal Action	1NO + 1NC	OSLS-1N	IP-40
	With Push Rod & Plastic Protective Cover	Normal Action	1NO + 1NC	SLS-1N(P)	IP-40
		Snap Action	1NO + 1NC	SLS-1S(P)	IP-40
	With Push Rod & Plastic Protective Cover	Normal Action	1NO + 1NC	SSLS-1N(P)	IP-40
		Snap Action	1NO + 1NC	SSLS-1S(P)	IP-40



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LIMIT SWITCHES SELECTION TABLE

Execution	Design	CONTACT		Product Code	Enclosure Degree Of Protection As Per I.S.S. Ref. : 2147-1962
		Arrangement	No of Contacts		
	With Push Rod	Normal Action	1NO + 2NC 2NO + 1NC	LS-12 LS-21	IP-00
	With Push Rod & Plastic Protective Cover	Normal Action	1NO + 2NC 2NO + 1NC	LS-12 (P) LS-21 (P)	IP-40
	With Push Rod	Normal Action	2NO + 2NC	LS-22	IP-00
	With Push Rod & Plastic Protective Cover	Normal Action	2NO + 2NC	LS-22 (P) LS-22 (PA)	IP-40
	With Push Rod & Plastic Protective Cover	Normal Action	1NO + 2NC 2NO + 1NC	SLS-12(P) SLS-21(P)	IP-40
	With Push Rod	Normal Action	1NC + 1NC	ELS-1N	IP-43
		Snap Action	1NO + 1NC	ELS-1S	
	With Normal Roller Lever	Normal Action	1NO + 1NC	ELS-1N(RL)	IP-43
		Snap Action	1NO + 1NC	ELS-1S(RL)	IP-43


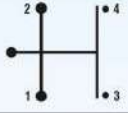
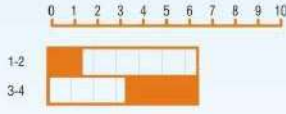
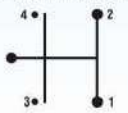

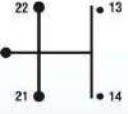
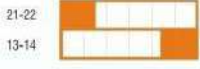
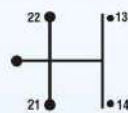
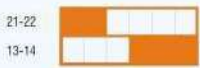
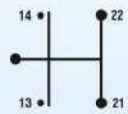
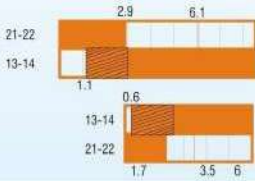
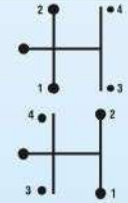
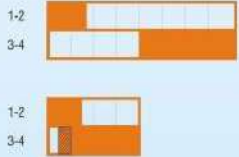
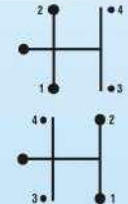
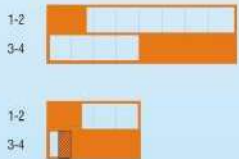


[SINCE-1989]

LIMIT SWITCHES

VALUE OF TRAVEL AND OPERATING FORCE

CONTACTS-2 SETS

CAT NO.	Contact Arrangement	Terminal Marking	TRAVEL IN MM Zero line = Initiation of Push-Rod Movement 	Required force for actuation in direction of stroke approx Kg.
LS-1N LS-1N (P)	WITH PUSH ROD Normal Action 			1
LS-1S LS-1S (P)	WITH PUSH ROD Snap Action 			1.5
OSLS-1N	WITH PUSH PLUNGER 			1
SLS-1N (P) SSLS-1N (P)	WITH PUSH ROD Normal Action 			1
SLS-1S (P) SSLS-1S (P)	WITH PUSH ROD Snap Action 			1
ELS-1N (RL) ELS-1S (RL)	Normal Action Snap Action 			0.75
OLSE-10 (N) OLSE-10 (S)	Normal Action Snap Action 			1 1.5

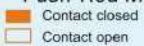
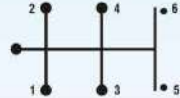
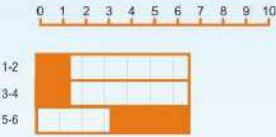
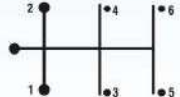
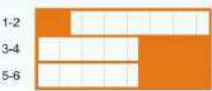
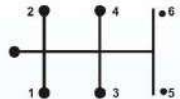

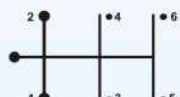


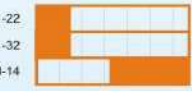
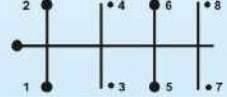
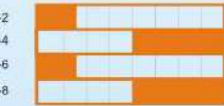

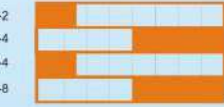


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LIMIT SWITCHES

VALUE OF TRAVEL AND OPERATING FORCE

CONTACTS 3 & 4 SETS

CAT NO.	Contact Configuration	Terminal Marking	TRAVEL IN MM Zero line = Initiation of Push-Rod Movement 	Required force for actuation in direction of stroke approx Kg.
LS-12 LS-12 (P)	1 NO + 2NC WITH PUSH ROD Normal Action 			1
LS-21 LS-21 (P)	2 NO + 1NC WITH PUSH ROD Normal Action 			1
ELS - 12	1 NO + 2NC WITH PUSH ROD Normal Action 			0.75
ELS - 21	2 NO + 1NC WITH PUSH ROD Normal Action 			0.75
SLS - 12 (P)	1 NO + 2NC WITH PUSH ROD Normal Action 			1
LS-22 LS-22P	2NO + 2NC WITH PUSH ROD Normal Action 			1
LS-22PA	2NO + 2NC WITH PUSH ROD Normal Action 			1



[SINCE-1989]

LIMIT SWITCHES SELECTION TABLE

Execution	Design	CONTACT		Product Code	Enclosure Degree Of Protection As Per I.S.S. Ref. : 2147-1962
		Arrangement	No of Contacts		
	In Die Cast Aluminium Housing with Push Rod	Normal Action	1NO + 2NC 2NO + 1NC	ELS-12 ELS-21	IP-43
	With Normal Roller Lever	Normal Action	1NO + 2NC 2NO + 1NC	ELS-12(RL) ELS-21(RL)	IP-43
	With Die Cast Oil Tight Aluminium Enclosure With Push Rod	Normal Action	1NO +1NC	OLSE-19N	IP-65
	With Push Rod & Plastic Protective Cover	Normal Action	1NO +1NC	OLSE-10N	IP-65
	With Normal Roller Lever oil Tight	Normal Action	1NO +1NC	OSLSE- 10 N	IP-65
		Snap Action	1NO +1NC	OSLSE-10 S	
	Without Normal Roller Lever oil Tight	Normal Action	2NO + 2NC	OLSE-19 (22)	IP-65
	With Normal Roller Lever oil Tight	Normal Action	2NO + 2NC	OLSE-10(22)	IP-65