

Compact Horizontal Limit Switches

Model SL1-□□ | Mechanical life of 20 million operations. Robust long-life and maintenance-free compact horizontal-type limit switches with IP67 seal.



- Mechanical life exceeds 20 million operations, owing to a 2-piece spring mechanism
- High sensitivity (M.D. = 0.1 mm)
- Superior seal: oil-resistant/immersion-proof type (JIS) and IP67 (IEC). O-ring and integral diaphragm seal are built in
- Small, space-saving body can be tightly gang-mounted
- UL/CSA/CE/GB (CCC marking) -certified models are available (excluding some models)

PHOTOELECTRIC SENSORS & SWITCHES
MEASUREMENT SENSORS
PROXIMITY SWITCHES
LIMIT SWITCHES
SAFETY KEY SWITCHES

LIMIT SWITCHES WITH POSITIVE OPENING MECHANISM

GENERAL PURPOSE LIMIT SWITCHES

TECHNICAL GUIDE FOR LIMIT SWITCHES

EXPLOSION-PROOF SWITCHES

TECHNICAL GUIDE FOR EXPLOSION-PROOF SWITCHES

STANDARD □LS□

SPATTER-GUARDED □LS□□

1LS-J7□□

1LS-J8□□

1LS□-J401

VCL-□□

SL1-□□

SL1-□C

PERFORMANCE

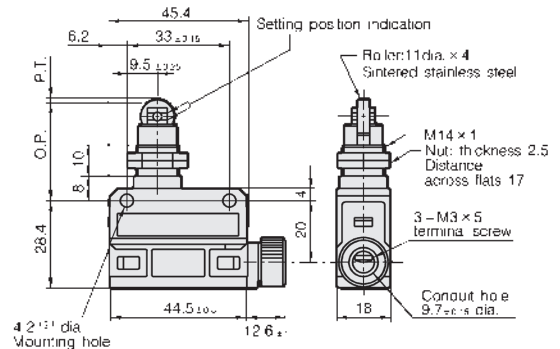
	Item	Details
Standards	Compliance	NECA C 4508/JIS C 8201-5-1/IEC 60947-5-1
	Certification	UL 508/CSA C22.2 No.14/EN 60947-5-1/GB14048.5 (except high oil- and heat-resistance types)
Structure	Contact form	Single-Pole Double-Throw (SPDT; refer to contact diagram below)
	Contact type	Standard load type: pure silver rivet Low current load type: gold-plated rivet
	Terminal type	M3 screw
	Protective structure	IP67 (IEC 60529, JIS C 0920)
	Pollution level	3 (EN 60947-5-1)
Electrical performance	Electrical rating	See Table 1.
	Rated frequency	45 to 65 Hz and D.C.
	Insulation resistance	Between non-continuous terminals: 100 MΩ Between each terminal and non-live metal parts: 100 MΩ
	Rated insulation resistance (Ui)	250V Dielectric strength between each terminal and non-conducting metal parts: 2,000 Vac (45 to 65 Hz, 5 s, leak current 1 mA)
	Dielectric strength between contacts	1,000 Vac (50 to 60 Hz, 1 minutes, leak current 1 mA)
	Rated impulse dielectric strength (Uimp)	2,500V
	Switching overcurrent	Category II (IEC 60204-1)
	Initial contact resistance	Silver contacts: 50 mΩ max. (6 to 8 Vdc 1A, voltage drop method) Gold-plated contacts: 100 mΩ max. (6 to 8 Vdc 0.1A, voltage drop method)
	Contact minimum allowable load	Silver contacts: 5 mA 24 Vdc, 10 mA 12 Vdc Gold-plated contacts: 5 mA 5 Vdc
	Rated thermal current (Ith)	Silver contacts: 5A Gold-plated contacts: 1A (Temperature increase: 65°C max.)
	Short-circuit protection	M10A(IEC 60127) (TÜV) Instant blowing fuse, 10A (silver contacts) or 3A (gold contacts) (CQC)
	Conditional rated short-circuit current	1,000A (power factor 0.5 to 0.7)
	Mechanical performance	Actuator strength
Terminal strength		Withstands tightening torque of 0.6 N·m for 1 minute
Impact resistance (malfunction)		300 m/s ² , contact opening for 1 ms max. in free position and total travel position (NECA C 4508)
Vibration resistance (malfunction)		1.5 mm peak-to-peak amplitude for 2 continuous hours Contact opening for 1 ms max. in free position and total travel position (NECA C 4508)
Allowable operating speed		0.02 mm/s to 0.5 m/s. 0.02 mm/s to 0.25 m/s on the SL1-B Series
Operating frequency		120 operations/minute. (60 operations/min for cold- and weather-resistant / high oil and heat resistance type).

APPEARANCE, OPERATING CHARACTERISTICS AND EXTERNAL DIMENSIONS

(unit: mm)

Roller plunger type

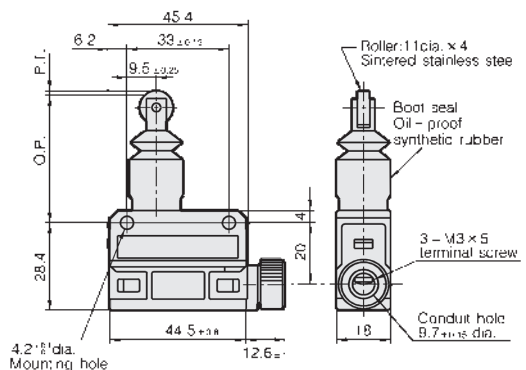
Catalog listing	SL1-A□□□
Operating force O.F. (max. N)	11.8
Release force R.F. (min. N)	4.9
Pretravel P.T. (max. mm)	1.5
Overtravel O.T. (min. mm)	3
Movement differential M.D. (max. mm)	0.1
Operating position O.P. (mm)	31.4±0.8



*Dimensional tolerance is ±0.4 unless otherwise specified.

Boot seal roller plunger type

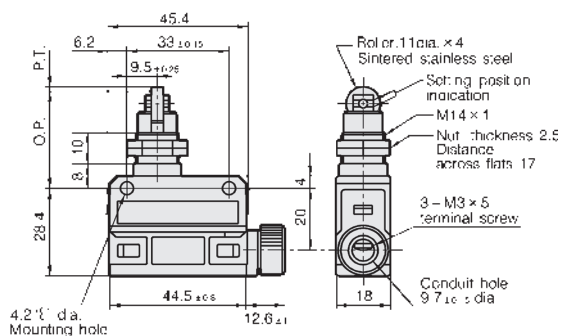
Catalog listing	SL1-B□□□
Operating force O.F. (max. N)	11.8
Release force R.F. (min. N)	4.9
Pretravel P.T. (max. mm)	1.5
Overtravel O.T. (min. mm)	3
Movement differential M.D. (max. mm)	0.1
Operating position O.P. (mm)	41.4±0.8



*Dimensional tolerance is ±0.4 unless otherwise specified.

Cross roller plunger type

Catalog listing	SL1-D□□□
Operating force O.F. (max. N)	11.8
Release force R.F. (min. N)	4.9
Pretravel P.T. (max. mm)	1.5
Overtravel O.T. (min. mm)	3
Movement differential M.D. (max. mm)	0.1
Operating position O.P. (mm)	31.4±0.8



*Dimensional tolerance is ±0.4 unless otherwise specified.