

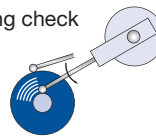


Features

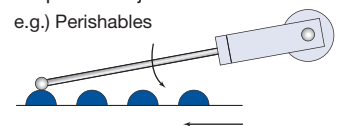
- Rotating lever slides and deflects against the object and a signal is output from the internal contactless transmitter.
- Strokes can be adjusted by the length of the lever and the contact force can be reduced (down to 0.1N)
- Contacting part can be changed to suit the object.

《Application》

Winding check

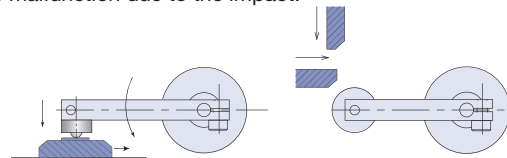


Transparent object.
e.g.) Perishables



How to use

Suitable for sliding objects
Do not press the lever to the stroke end with excessive force. It may cause malfunction due to the impact.



Standard specification

Switch structure	Product name	Output mode
Contact-less	CSRNA TNA -L1A	NPN - Normally open
	CSRNA TPA -L1A	PNP - Normally open
	CSRNB TNB -L1A	NPN - Normally close
	CSRNB TPB -L1A	PNP - Normally close

-L1A : Fixed lever, Sφ2 ball SUS HRC50

Common specification

Switch structure	Contact-less
Pretravel	Less than 5°
Repeatability	0.01 (Up to 25mm lever) (At operating speed 50-200mm/min) *
Movement differential	0.05 (with 25mm lever)
Stroke	30°
Rotating direction	Clockwise (CW)
Contact force	0.5N (with 25mm lever)
Protective structure	IP65

* Operating speed slower than 10mm/min is not recommended.

Electrical specification

Power supply voltage	DC12-DC24V
Current consumption	Less than 10mA
Output current	80mA (MAX) Resistant load
Output mode	A : Normally open / B : Normally close
Output specification	NPN open collector / PNP open collector
Remaining voltage	Less than 1V
Leakage current	Less than 0.8mA
Insulation resistance	More than 100MΩ with DC250V Megger
Protection circuit	Revers connect protection

Operating environment

An extra cover is recommended to avoid direct hit by high-pressure coolant or heavy cuttings.

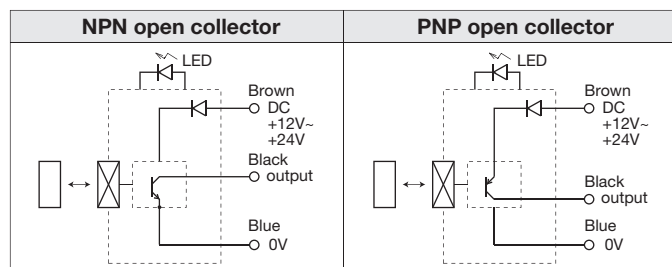
unit:mm

LED indicator	Equipped
Operating temperature range	0°C-60°C (Ice-free)
Temperature drift	0.09/10-40°C MAX
Cable (Prefer to P2-9)	Standard length 2 m Oil resistant φ4 / 3 cores, Tensile strength 30N
Oscillation	10-55Hz total amplitude 1.5 for X,Y,Z each direction
Impact	300m/s ² for X,Y,Z each direction

◎The following options are available.

- Rotating direction
- Stroke
- Contact force
- Protective structure
- Mounting method

Circuit diagram



Electrical specification / circuit diagram. (Refer to P2-3)

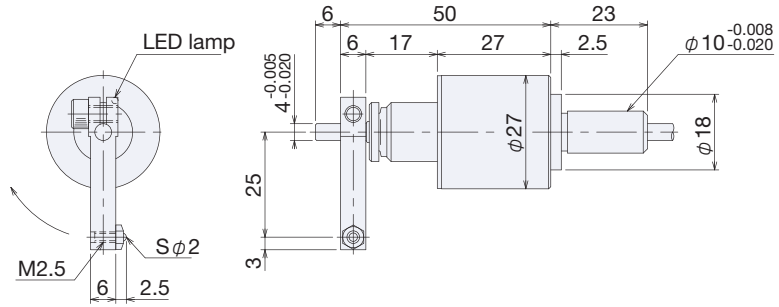
Please make sure to turn off the power before removing the switch mounting.
(Refer to "Precautions for switch connection" on P2-4.)

Outer dimension

Contact-less type

- CSRNA TNA-L1A (NPN-NO)
- CSRNA TPA-L1A (PNP-NO)
- CSRNB TNB-L1A (NPN-NC)
- CSRNB TPB-L1A (PNP-NC)

Fixed lever, S ϕ 2 ball SUS HRC50 (-L1A)

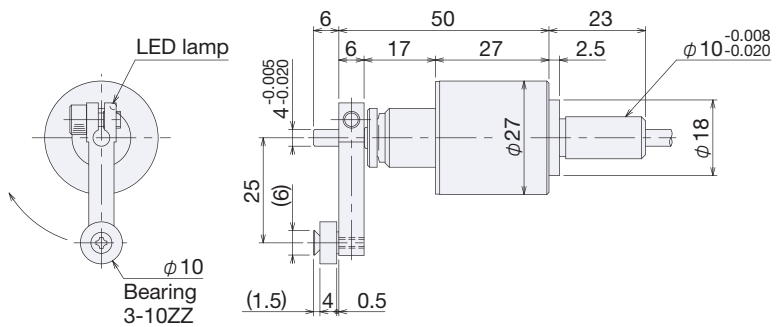


The direction of the lock screw and the contacting part are set according to the rotating direction.

Options

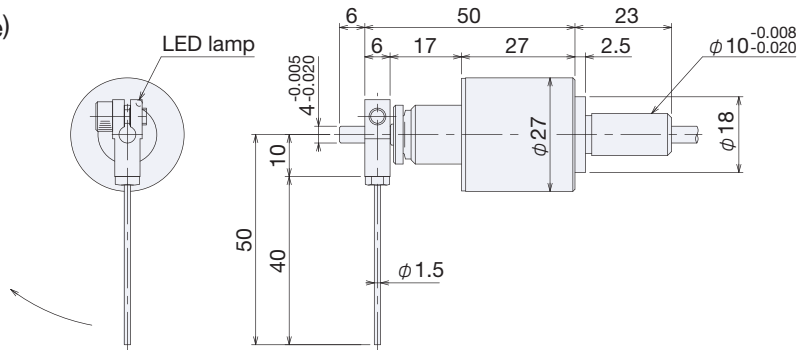
Contact lever: L3 G (Bearing)

CSRNA TNA - L3 G



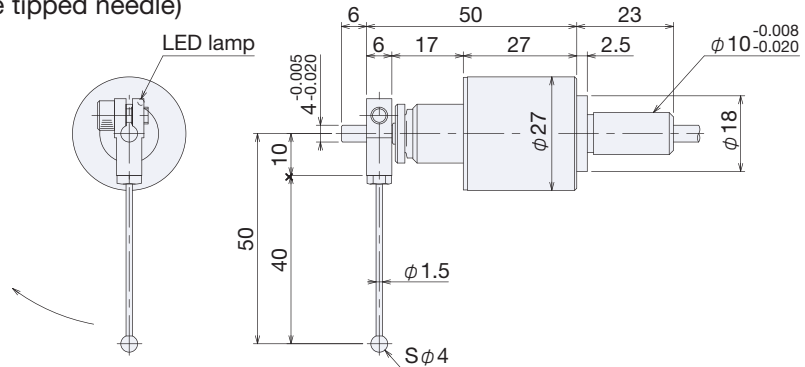
Contact lever: L4 R14 (Needle)

CSRNA TNA - L4 R14



Contact lever: L4 R24 (Sphere tipped needle)

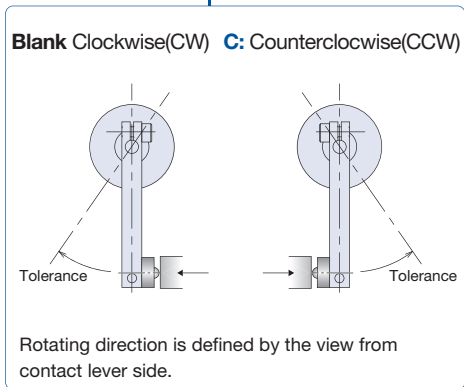
CSRNA TNA - L4 R24



Options

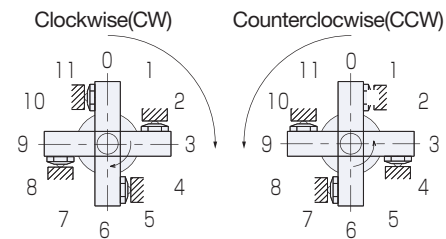
Product name	Rotating direction	Stroke	Mounting method	Mounting direction	Contacting lever	Contact force
CSRNA TNA CSRNA TPA CSRNB TNB CSRNB TPB	Blank: Clockwise C: Counter clockwise	Blank: 30° E: 60°	Blank: $\phi 10$ M: M10×1 K: Flange	Blank: Vertical Hn: Specify the direction	L1A (Standard): Fixed type $S\phi 2$ X : No contacting lever Refer to the next page for other contacting levers	Blank: 0.5N G: 1N S: 0.3N (When contact force "S (0.3N)" is selected, protective structure is IP40.) The contact force above is when the contact L1A is selected Refer to the next page for other options.

▶ e.g.)
CSRNATNAC-L1A



Hn: Specify the direction

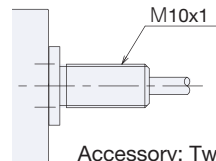
In the case of horizontal mounting



e.g.) CSRNATNA -H6L1A

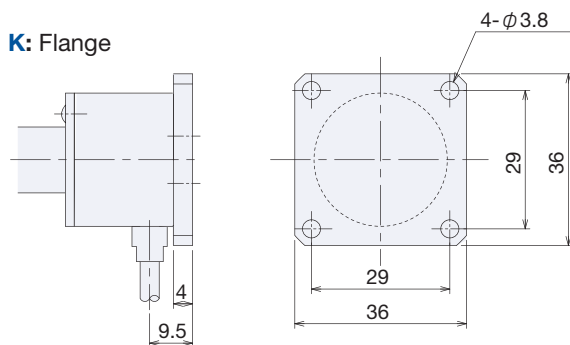
M: M10×1

Switch






Accessory: Two fixing nuts M10×1
(Opposing corners: 19.6, opposite sides: 17, thickness: 4.5)

K: Flange



Contact lever

Options

Lever type	Mark : lever
Standard type 	L1A : S ϕ 2 SUS, Hardened
	L1AW : S ϕ 2 Carbide
	L1BW : ϕ 3 Flat Carbide
Bearing type 	L3G : Bearing
Needle type 	L4R14 : ϕ 1.5 \times 40
	L4R16 : ϕ 1.5 \times 65
	L4R24 : S ϕ 4 \times 40
	L4R26 : S ϕ 4 \times 65

Contact force

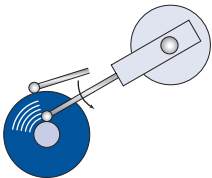
Measure of contact force due to the difference in the contacts (mounting position: vertical)

Contact	Blank	Mark : G	Mark : S
L1A	0.5 N	1.0 N	0.3 N
L1AW			
L1BW			
L3G	0.5 N	1.0 N	0.3 N
L4R14	0.25 N	0.5 N	0.15 N
L4R16	0.17 N	0.35 N	0.1 N
L4R24	0.25 N	0.5 N	0.15 N
L4R26	0.17 N	0.35 N	0.1 N

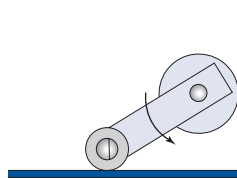
Example: When **CSR/NATNA-L4R14** is selected, the actual contact force will be 0.25N.

《Application》

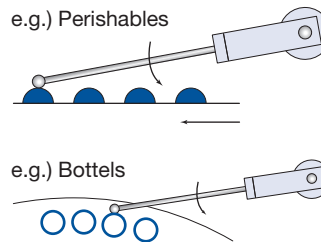
Winding check



Tension break check

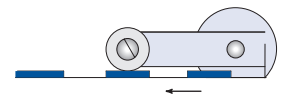


Transparent object. Low contact force is available



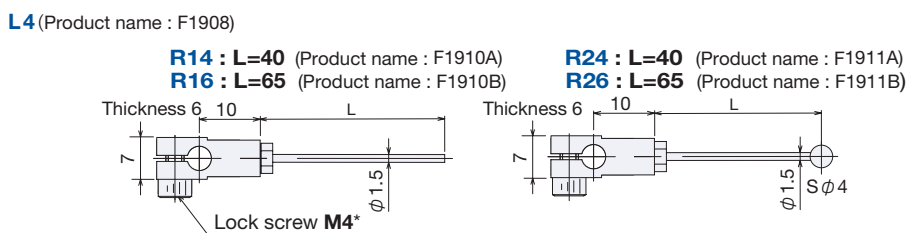
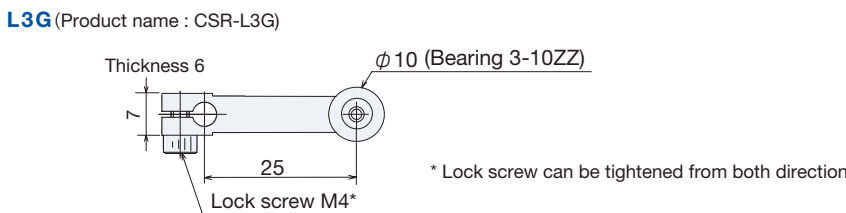
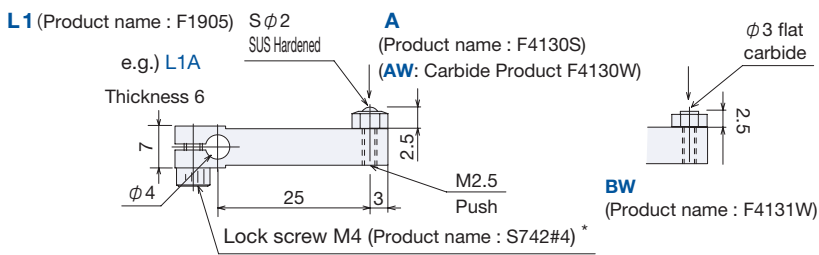
Precaution

Thickness and film presence checking



For contact-less type, the thickness of detected objects needs to be larger than its movement differential.

Dimension of optional contacting parts



Optional contact

Lever type	Mark	Standard
Standard	L1	F1905
	A	F4130S
	AW	F4130W
	BW	F4131W
Bearing type	L3G	CSR-L3G
Needle type	L4	F1908
	R14	F1910A
	R16	F1910B
	R24	F1911A
	R26	F1911B