

Low contact force Switch

Special purpose switch series

www.metrol.co.jp/en

CSF

1 signal plunger type

Contact force 0.1N type (Metal bearing)



Features

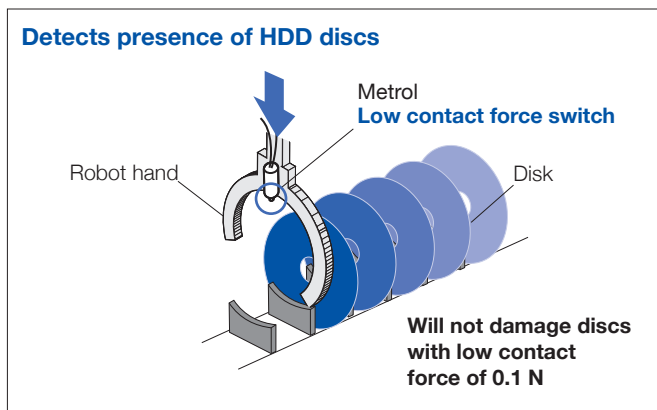
0.1N Low contact force

Realizes low contact force similar to non-contact type without limit, by using a non-contact circuit in the built-in switch.

(Due to use of amplifier, however, there remains the disadvantage of hysteresis and temperature drift compared with contact type)

Example) Detection of presence of semiconductors, ceramic tools, and minute parts, etc.

《Application》



Standard specification

Product name	Size	Contact force
CSFN105A	M10×0.5	0.1N
CSFSN10A	φ10	

Common specification

Switch structure	Contact-less
Output mode	A: NO
Pretravel	0.4
Stroke	2
Repeatability	0.01 (range)
Movement differential	0.03
Protective structure	IP40
Case material	SUS303
Contacting part material	SUS303, φ2 plunger SR1.5

Cable	Standard length 3m Oil resistant φ4/ 3 cores, Tensile strength 30N Minimum bending R7
Operating temperature range	0°C-60°C (Ice free)
Temperature drift	0.03/10-40°C MAX
Oscillation	10-55Hz total amplitude 1.5 for X, Y, Z each direction
Impact	300m/s ² X,Y,Z each direction
Output capacity	DC12V-DC24V 10mA (MAX) Resistance load
Output specification	NPN Open collector
Standard accessory	Two fixing nuts for threaded type

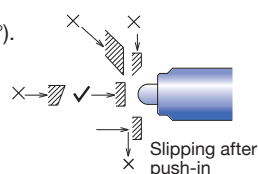
unit: mm

◎The following options are available.

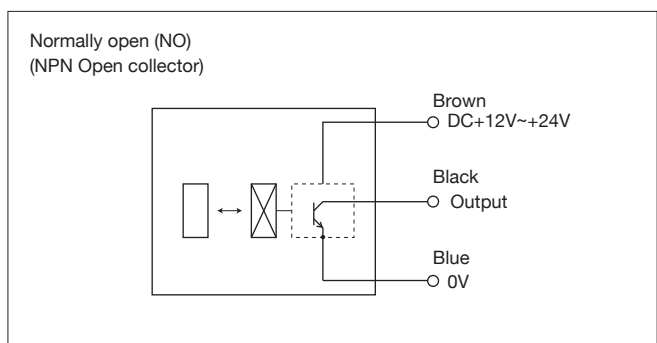
- Transistor output (Refer to P7-3)
- Reverse connect protection.
- Level conversion.
- Output current is increased to 100mA.
- Shape of contacting part
- LED indicator
- Mounting direction

How to use

Make contact with detected object at right angle (within deflection angle ±3°).



Circuit diagram



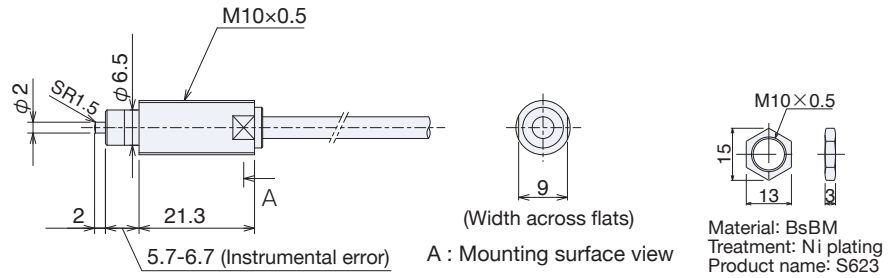
Electrical specification / circuit diagram

Always make sure to turn off the power before installing or removing switches. (Refer to P7-3 "Precautions for switch connection")

Outer dimension

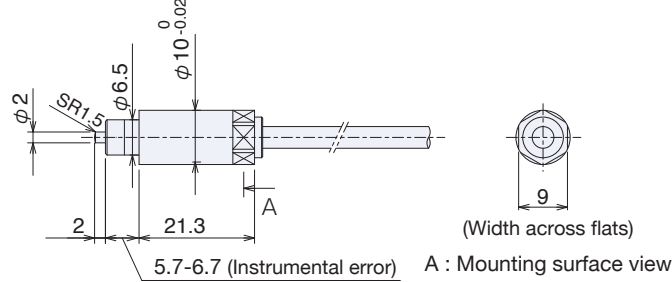
CSFN105A

(A : NO)

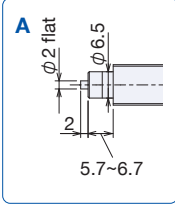
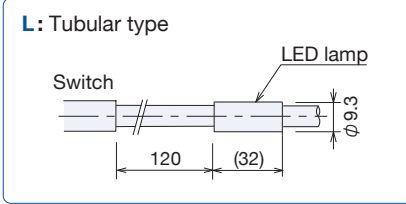


CSFSN10A

(A : NO)



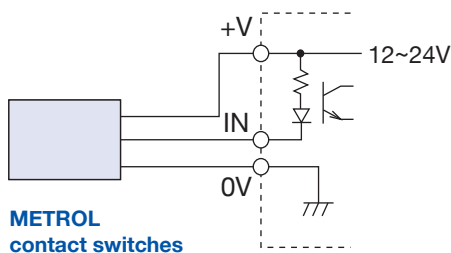
Options

Product name	Shape of contacting part	LED indicator
CSFN105A CSFSN10A	Blank : $\phi 2$ plunger SR1.5 A: S $\phi 2$ flat	Blank: No LED *Only when choosing transistor output L: 120mm from the switch
Transistor output TNA Added to standard product name TNB TPA TPB (Refer to P7-3)	A: $\phi 2$ flat 	L: Tubular type 

- ▶ e.g.) CSFN105A-A
- ▶ Transistor output
e.g.) CSFN105ATNA-AL

Connection with program controller

NPN Output → Program controller



PNP Output → Program controller

