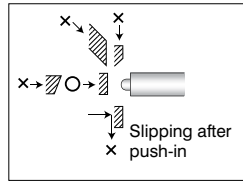


# Precision Limit Switches

## Low Contact Force Limit Switches: CSFN / CS / CSJ

- 0.1N and 0.5N contact force
- 5 micron ( $\mu\text{m}$ ) and 10 micron ( $\mu\text{m}$ ) repeat accuracy
- Stainless steel housing
- Metal bearing
- Straight-touch and straight needle touch available

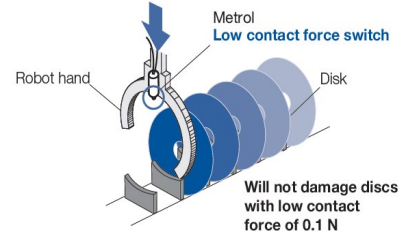
### Low Contact Force Straight Touch



O indicates correct target approach and orientation.  
 X indicates approach and orientation that should be avoided.

CSFN105A-H6X must be mounted downward

Detects presence of HDD discs



Low Contact Force Limit Switches Selection Chart									
Part Number	Price	Actuator/ Head Type*	Barrel Type	Barrel Diameter/Thread*	Stroke	Switching Output	Contact Force	Sensor Dimensions	Connection Type
<b>Low Contact Force, Metal Bearing, Downward Mounting Only</b>									
<b>CSFN105A-H6X</b>	\$38.00	$\emptyset$ 2mm (0.079 in) plunger SR 1.5 mm (0.059 in)	Threaded	M10x0.5	2mm (0.079 in)	N.O. NPN	0.1 N	Figure 1	3m (9.84 ft) cable
<b>Low Contact Force, Straight Touch, Metal Bearing</b>									
<b>CS067A-LG</b>	\$50.00	$\emptyset$ 2mm (0.079 in) plunger SR 1.5 mm (0.059 in)	Threaded	M6x0.75	2.8 mm (0.110 in)	N.O.	0.5 N	Figure 2	3m (9.84 ft) cable
<b>Low Contact Force, Straight Touch, Needle Contact</b>									
<b>CSJ055A-CG</b>	\$43.00	$\emptyset$ 2mm (0.079 in) plunger SR 1.5 mm (0.059 in)	Threaded	M5x0.5	2.8 mm (0.110 in)	N.O.	0.5 N	Figure 3	3m (9.84 ft) cable

$\emptyset$  = diameter, SR = surface radius

\* Must be mounted in a downward direction



CSFN105A-H6X



CS067A-LG



CSJ055A-CG

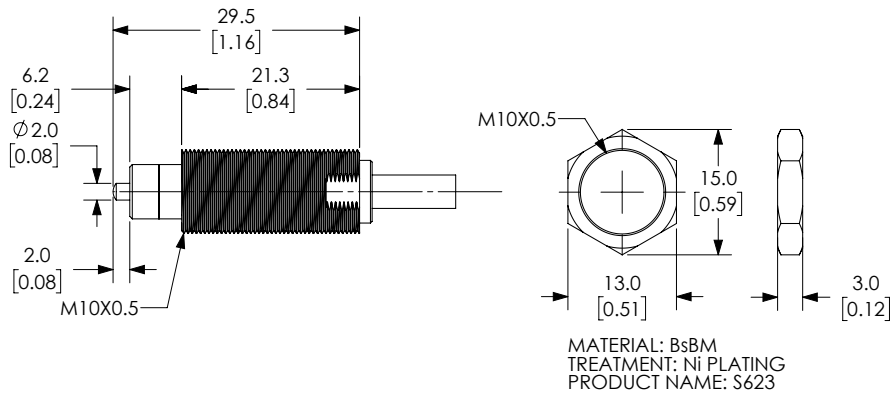
# Precision Limit Switches

## Low Contact Force Limit Switches: CSFN / CS / CSJ

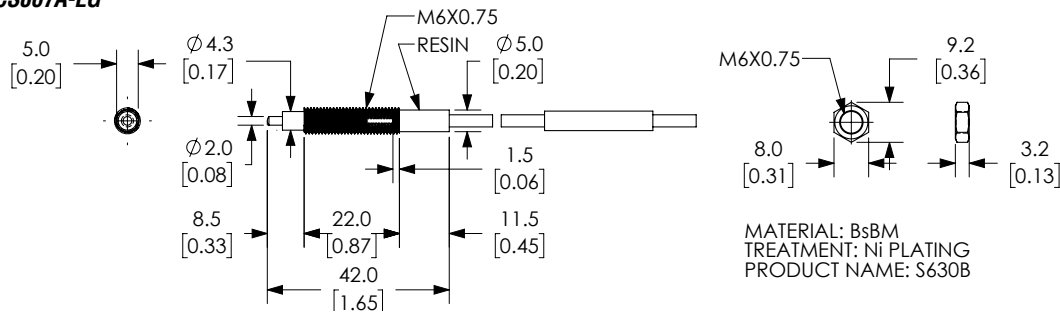
### Dimensions

mm [inches]

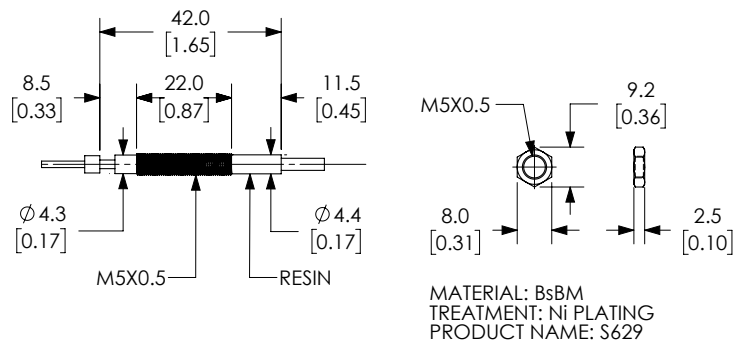
**Figure 1**  
**CSFN105A-H6X**



**Figure 2**  
**CS067A-LG**



**Figure 3**  
**CSJ055A-CG**



# Precision Limit Switches

## Low Contact Force Limit Switches: CSFN / CS / CSJ

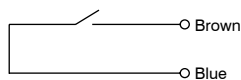
Low Contact Force Limit Switches Specifications			
	CSFN Metal Bearing	CS Custom Metal Bearing	CSJ Custom Needle Contact
<b>Environmental</b>			
Degree of Protection	IP40	IP65	
Temperature Range	Operating: 0–60°C (32–140°F) (Ice-free)	Operating: 0–80°C (32–176°F) (Ice-free)	
<b>Mechanical Ratings</b>			
Enclosure Material	Stainless Steel (mounting nuts are Ni-plated brass)		
Pretravel	0.4 mm (0.016 in)	0.3 mm (0.012 in)	
Torque (for nuts on threaded barrels, set screws on smooth barrels)	4 N•m (2.95 lb•ft)	2 N•m (1.48 lb•ft)	N/A
Oscillation	10–55Hz total amplitude 1.5 for X, Y, Z each direction		
Impact	300 m/s <sup>2</sup> for X, Y, Z each direction		
Repeat Accuracy	0.01 mm (10 micron [μm])	0.005 mm (5 micron [μm])	
Recommended Minimum Operating Speed	10 mm (0.394 in)/minute		
<b>Electrical Ratings</b>			
Contact Life	10 million operations		
Contact Voltage	12–24VDC	5–24VDC	
Steady Current Rating	10mA or less		
Max In-rush Current Rating	10mA (limit current to protect LED indicator)		
Connection Type	Cable: 3m PVC (polyvinyl chloride) oil resistant Ø4/3 cores, 30AWG Tensile strength 30N, minimum bending R7	Cable: 3m PVC (polyvinyl chloride) oil resistant Ø2.8/2 cores, 26AWG Tensile strength 30N, minimum bending R7	
Indicating	-L: LED indicator (mounted in cable 120mm from the switch)		

\* At operating speed 50-200 mm/minute. Operating speed slower than 10 mm (0.393 in)/min is not recommended.

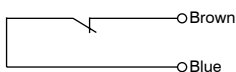
## Circuit Diagrams

### Without LED

Normally open (NO)

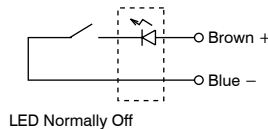


Normally closed (NC)

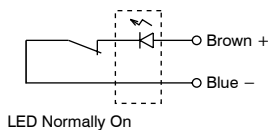


### With LED

Normally open (NO)



Normally closed (NC)



### CSFN105A-H6X

Normally open (NC)  
(NPN Open Collector)

