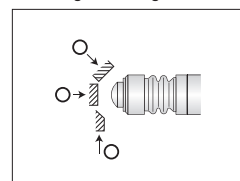


# Precision Limit Switches

## Precision Angled and Mini Touch Limit Switches

- Mini size suitable for machines required to be small and for narrow installation space.
- Stroke length (1.5 mm)
- 3 and 5 micron ( $\mu$ m) repeat accuracy
- Stainless steel housing
- Metal bearing

Angled/Sliding Touch



O indicates correct target approach and orientation.

Ø indicates approach and orientation that should be avoided.

### Precision Touch Limit Switches Selection Chart

Part Number	Price	Drawing Link	Actuator/ Head Type*	Barrel Type	Barrel Diameter/ Thread*	Stroke	Switching Output	Contact Force	Connection Type	Photo
Precision Angled										
<a href="#">CSHP085A-L</a>	\$158.00	<a href="#">PDF</a>	Ø 4.7 mm SR 3mm	Threaded	M8×0.5	2.8 mm	N.O.	1N	Cable, 2m length	A
<a href="#">CSHP085B-L</a>	\$158.00	<a href="#">PDF</a>					N.C.			
Precision Mini										
<a href="#">CSM105WA</a>	\$57.00	<a href="#">PDF</a>	Ø 3.5 mm plunger	Threaded	M10×0.5	1.5 mm	N.O.	1N	Core wire 0.5 m length	B
<a href="#">CSMP105WA</a>	\$60.00	<a href="#">PDF</a>	2mm plunger with boot/ SR 2.5 mm							C

\* Ø = diameter, SR = surface radius

-L: LED indicator (mounted in cable 120mm from the switch)

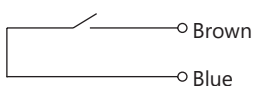
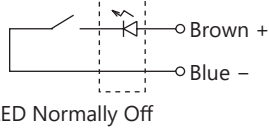
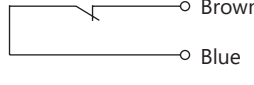


# Precision Limit Switches

Precision Touch Limit Switches Specifications		
Type	Precision Angled	Precision Mini
Series	CSHP	CSM
Environmental		
Degree of Protection	IP67	
Temperature Range	Operating: 0 to 80°C [32 to 176°F] (Ice-free)	
Mechanical Ratings		
Enclosure Material	303 Stainless Steel	
Pretravel	0.3 mm	
Torque (for nuts on threaded barrels, set screws on smooth barrels)	4 N•m	8 N•m
Oscillation	10–55Hz total amplitude 1.5 for X, Y, Z each direction	
Impact	300 m/s² for X, Y, Z each direction	
Repeat Accuracy	Both On–Off, Off–On: 0.005 mm*	Both On–Off, Off–On: 0.003 mm*
Recommended Minimum Operating Speed	10 mm/minute	
Electrical Ratings		
Contact Life	10 million operations	
Contact Voltage	5–24VDC	
Steady Current Rating	10mA or less	
Max In-rush Current Rating	10mA (limit current to protect LED indicator)	
Connection Type	Cable: 3m (2m for CSHP series) Oil resistant Ø2.8/2 cores, Tensile strength 30N, minimum bending R7	Core wire cable, 0.5 m (x2) Oil resistant Ø0.6 Tensile strength 15W
Indicating	-L: LED indicator (mounted in cable 120mm from the switch)	NA

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

## Circuit Diagrams

Without LED	With LED
<p>Normally open (N.O.)</p> 	<p>Normally open (N.O.)</p> 
<p>Normally closed (N.C.)</p> 	<p>Normally closed (N.C.)</p> 