

Precision Contact Sensors

Selection guide [P.0721—P.0732](#) ▶

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Rod type 	Rod type	MT-M P.0727 
Ball-bearing type 	Ball-bearing type	MT-B P.0729 
Environment resistant, tool alignment 	Environment resistant, tool alignment	MT-S P.0731 
Special application Please visit www.senpum.com/en View or enquire about SENPUM engineers 	Square type/Button type	MT-K Please contact SENPUM engineers for detailed information
	360°contact	MT-X Please contact SENPUM engineers for detailed information
	For jigs, limit switches	MT-W Please contact SENPUM engineers for detailed information
	Ultra-small type	MT-R Please contact SENPUM engineers for detailed information

Selection guide

Rod Type



> Rod type MT-M series

- $\pm 0.001\text{mm}$ ultra-high repeatability
- Maximum stroke of 3mm
- M6/M8/M12 universal threaded straight rods

P.0727

Ball-Bearing Type



> Ball-bearing type MT-B series

- Slide into place or touch at **multiple angles**
- Maximum stroke of 1.5mm
- $\pm 0.001\text{mm}$ ultra-high repeatability

P.0729

Environment Resistant, Tool Alignment



> Environment resistant, tool alignment MT-S series

- Suitable for use **in water, cutting fluid environments**
- Maximum stroke of 3mm
- $\pm 0.001\text{mm}$ ultra-high repeatability

P.0731

Special Application

Square type / Button type MT-K series

- Simple and convenient square vertical installation
- $\pm 0.002\text{mm}$ ultra-high repeatability



Please contact SENPUM engineers for detailed information

360° contact MT-X series

- 360° contact use, **no blind spots**
- $\pm 0.02\text{mm}$ high repeatability



Please contact SENPUM engineers for detailed information

For jigs, limit switches MT-W series

- **Manual and automated** assembly occasions
- $\pm 0.005\text{mm}$ ultra-high repeatability



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Ultra-small type MT-R series

- **Ultra-small size**, extremely space-saving mounting
- $\pm 0.001\text{mm}$ high repeatability



Please contact SENPUM engineers for detailed information

Fiber Optic Sensors

Photoelectric Sensors

Color Sensors

Laser Sensors

Inductive Proximity
Sensors

Precision Contact
Sensors

Area/Safety Light
Curtain

Laser Scanners

Digital Contact Sensors

Laser Displacement
Sensors

Confocal Displacement
Sensors

Barcode Scanners

RFID

Infrared Temperature
Sensors

Digital Pressure
Sensors

Flow Test Sensors

Gate Magnetic Sensors

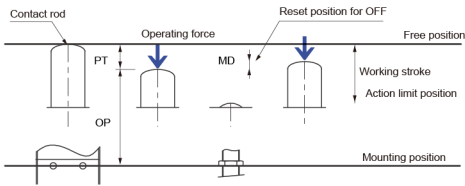
Ultrasonic
Displacement Sensors

Magnetic Scale

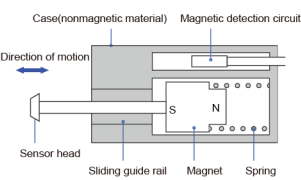
Static Eliminators

How precision contact sensors work

Principle of operation and diagram explanation



Internal structured diagram (nocontact)



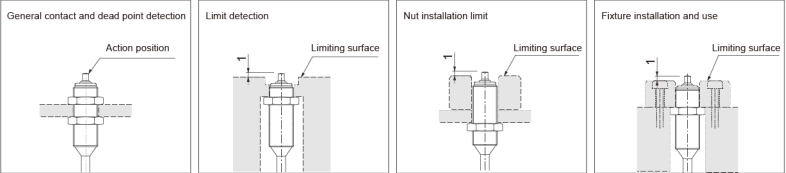
When the sensing head contacts the detected object, the working rod moves, driving the internal magnet to move correspondingly. The magnetic circuit detects the movement of the magnet, resulting in ON/OFF signal output.

Basic specifications

Working stroke	The movable distance of the working rod from the free position to the action limit position
Position repeatability	Error of action position (OP)
Operating force	Force to drive the working rod
Pre-action movement (PT)	Distance the working rod needs to move from the free position to the action (ON) position
Hysteresis(MD)	Distance the working rod moves from the action (ON) position to the reset (OFF) position
Action position(OP)	Distance from the top of the working rod to the mounting position when in action (ON)

Application of precision contact sensors

Application



For defective product determination

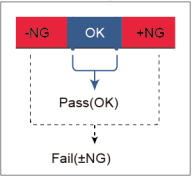
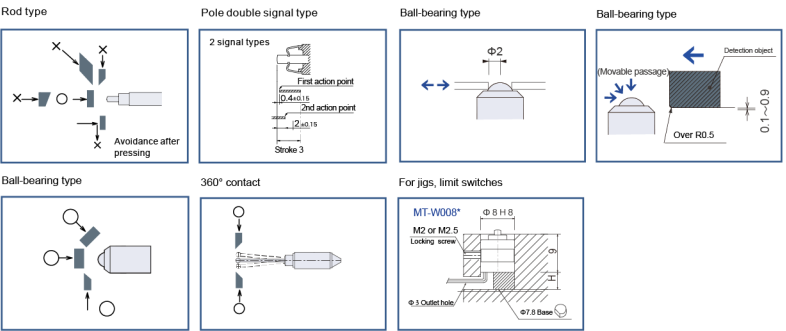


Illustration of use

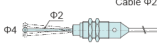
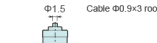
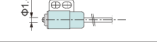


MT-M	Precision Contact Sensors
MT-B	
MT-S	
Fiber Optic Sensors	
Photoelectric Sensors	
Color Sensors	
Laser Sensors	
Inductive Proximity Sensors	
Precision Contact Sensors	
Area/Safety Light Curtain	
Laser Scanners	
Digital Contact Sensors	
Laser Displacement Sensors	
Confocal Displacement Sensors	
Barcode Scanners	
RFID	
Infrared Temperature Sensors	
Digital Pressure Sensors	
Flow Test Sensors	
Gate Magnetic Sensors	
Ultrasonic Displacement Sensors	
Magnetic Scale	
Static Eliminators	

Based on appearance, stroke, and operating force selection precision contact sensors

Based On Appearance, Stroke, And Operating Force Selection							
Type	Appearance	Stroke	Position repeatability (mm)	Operating force (N)	Mounting dimensions (mm)	Model	
Rod type	 Cable Ø2.8×1m	0~1.2mm	±0.001mm	0.25N	M6×18.5	MT-M006*	
	 Cable Ø2.8×1m	0~1.5mm		0.4N	M8×20	MT-M008	
	 Cable Ø2.8×1m	0~3mm		0.6N	M8×30	MT-M008S*	
	 Cable Ø3.1×1m			1N	M10×17.5	MT-M010*	
	 Cable Ø3.1×1m			M10×17	MT-MH010*		
Ball-bearing type	 Cable Ø2.8×1m	0~1.2mm	±0.01mm	0.5N	M6×17.8	MT-B006*	
	 Cable Ø2.8×1m	0~1.4mm		0.9N	M8×20.7	MT-B008*	
	 Cable Ø2.8×1m	0~1.0mm		0.35N 4.5N	M10×17.5	MT-B010*	
	 Cable Ø2.8×1m			0.5N 0.7N	Φ12	MT-B012*	
	 Cable Ø2.8×1m	0~1.5mm		±0.002mm	0.9N	22.5x11	MT-BQ008*
Environment resistant tool alignment	 Cable Ø2.8×1m	0~3mm	±0.001mm	0.6N	M8×30	MT-SD008*	
	 Cable Ø2.8×1m				M8X×3.5	MT-SHT008*	
	 Cable Ø2.8×1m			1.5N	M8×17.5	MT-ST010*	
Square and button type	 Cable Ø2.8×1m	0~3.3mm	±0.002mm	0.4N	22.5×11x15.5	MT-K022*	
	 Cable Ø2.8×1m		0.02mm	1.2N	41×16×36	MT-K041*	
	 Cable Ø2.8×1m		±0.04mm	0.25N	M16×13.5	MT-K016F*	

Based On Appearance, Stroke, And Operating Force Selection

Type	Appearance	Stroke	Position repeatability (mm)	Operating force (N)	Mounting dimension (mm)	Model
360° contact	Cylinder long rod type 	0~4.0mm	0.02mm	0.3N 1N	Φ14×32	MT-XY040*
	Threaded long rod type 			0.3N 0.8N	M14×32	MT-XM040L*
	Vertical type 	3±0.5mm		0.5N 1.5N	26×26	MT-XE020
For JIS limit switches	Rod head type 	0.3~0.6mm	±0.005mm	0.9N	Φ8	MT-W008*
		±0.2mm	±0.01mm	0.4N	Φ10	MT-W010*
Ultra small type	Button pin type 	0~1.0mm	±0.001mm	0.1N 0.5N	7.7x6.4x7	MT-RB*
	Pin type 0.4x0.3x9.5mm 	0~2.0mm		0.5N		MT-RF*
	Button cable type 	0~1.0mm	±0.002mm	0.1N 0.5N	13.1x6.4x7.4	MT-RG*
	Lever cable type 					MT-RH*

Note: for special sizes, contact SENPUM sales engineers.

I/O Circuit Connection Diagram

