

NEW!!

0.002mm

**Gap can be Detected
Reliably!!**

AIR MICRO SWITCH

±1µm Repeatability

Enables accurate determination of seating and confirmation of adhesion under harsh working conditions.

IP67



AIR MICRO SWITCH

**±1μm repeatability,
10 times higher accuracy than
conventional products!!**

Applying the principle of air micrometers, adhesion and seating of detected objects can be confirmed without contact!! (OK/NG)

Prevents processing defect.

IP67 protective structure

Able to work under harsh conditions, which allows for installation inside the machine tools.

Enable to shorten air piping, which improves response speed, and realizes higher accuracy!!

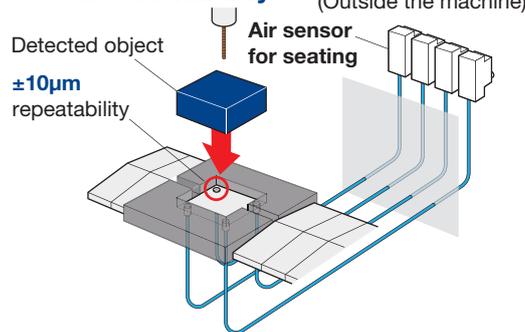
Applications

To confirm seating of detected objects for machine tools

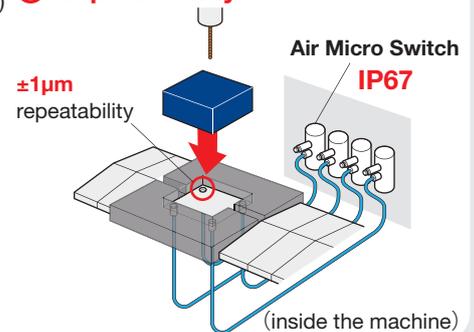
With IP67 protective structure, it can be installed inside the machine tools, where coolant is splattered.

Shortened air piping improves response speed and realizes higher accuracy!!

× Conventional way



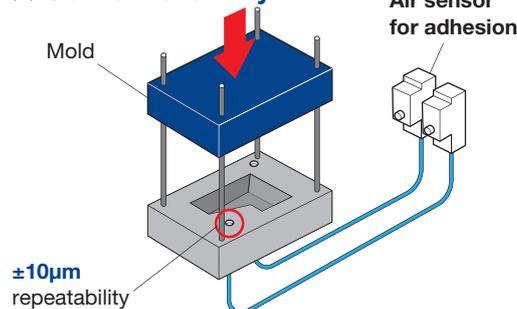
○ Improved way



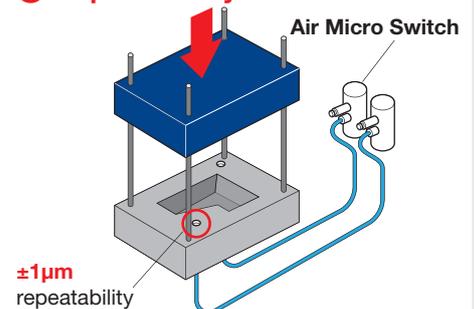
To confirm adhesion to the mold

Reliably detects adhesion to the mold with its ±1μm repeatability. High reliability and repeatability eliminate the need for repeated calibration with the master, which frequently occurs at sites.

× Conventional way



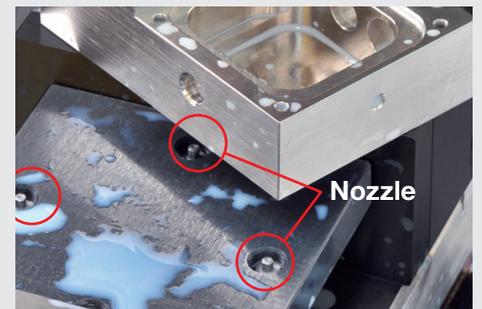
○ Improved way



Allows for installation inside of the machine tools, where coolant is splattered.



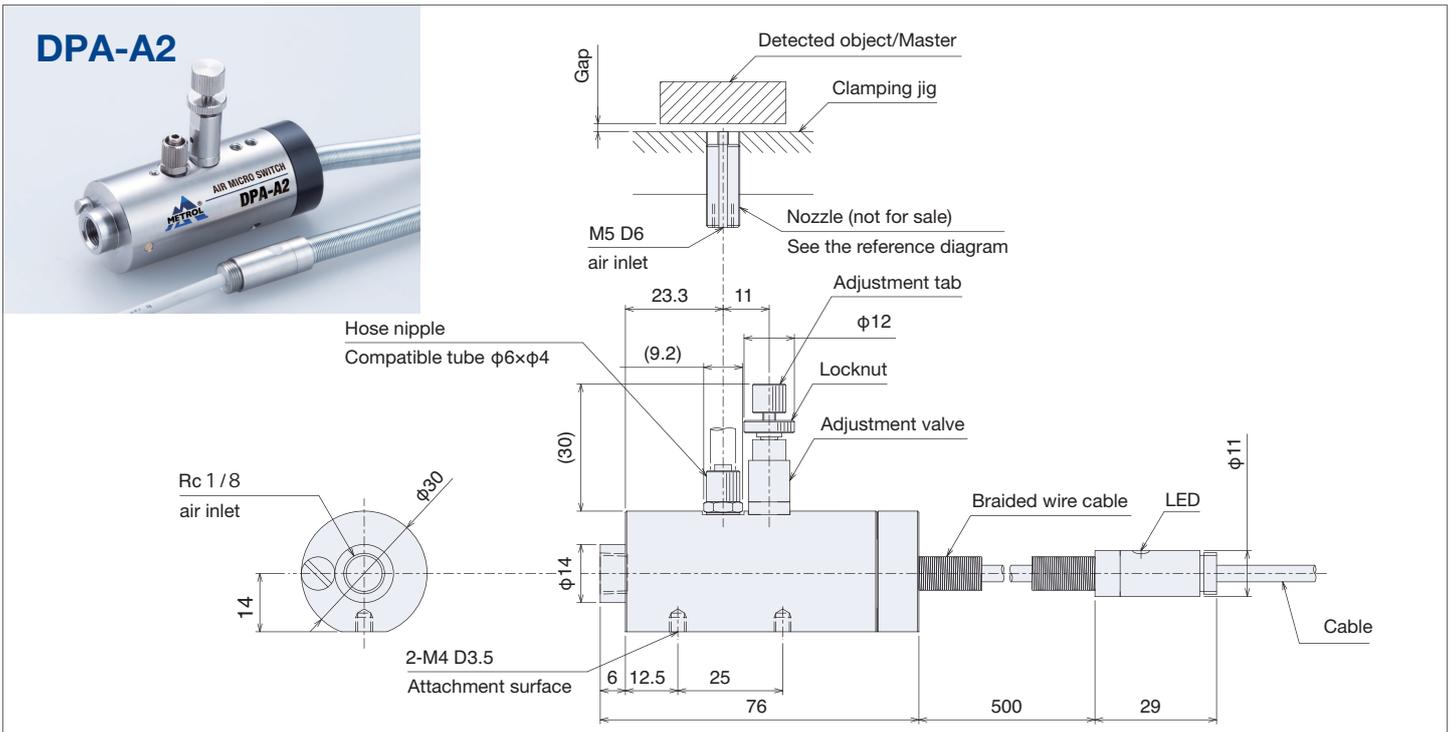
Shortened air piping improves response speed and realizes higher accuracy.



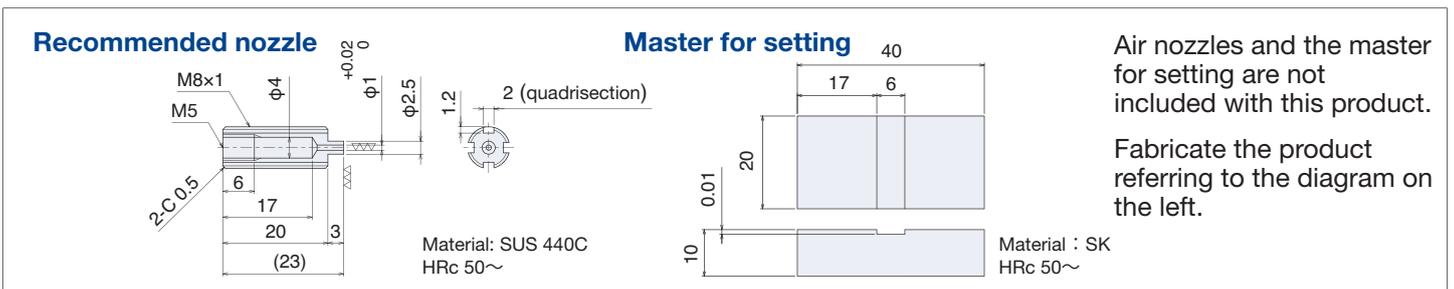
Reliably detects the gap of 2 to 80μm between the detected object and the jig with its ±1μm repeatability.

Outer dimension

Unit: mm



Reference diagram



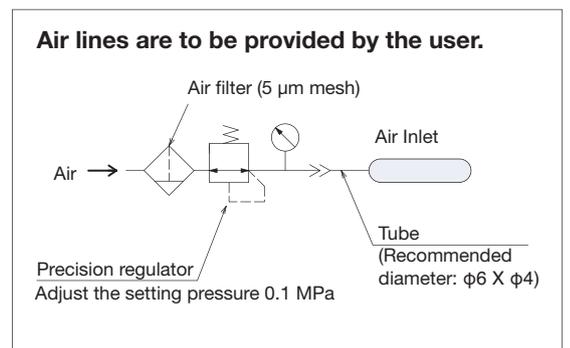
Specifications

Product name	DPA-A2
Repeatability	±1 μm (tube length: 1.5 m when using a recommended nozzle)
Response speed	0.8 second (tube length: 1.5 m when using a recommended nozzle)
Protective structure	IP67
Detection distance	Adjustable within the range of 2 to 80 μm (10 μm at the factory setting) Set with the signal point adjustment tab
Setting pressure	0.1 MPa
Pipe diameter	O.D. φ6 X I.D. φ4 tube
Fluid	Dry air (filtered to 5 μm)
Consumption flow rate	16 L/min (when using 1.0 mm nozzle at 0.1 MPa)
LED	Operation: LED ON / reject: LED OFF
Operating temperature range	0°C to 60°C (no condensation)
Cable	Standard length 3 m oil resistant φ4/2 cores AWG30
Contact rating	DC 5 V to DC 24 V 10 mA (20 mA max) resistance load

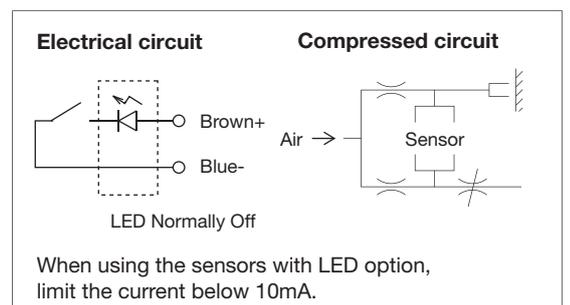
Precautions for air piping

The air micro switch may be damaged if supply of air is 0.2 MPa or more. Connect air pipe after adjusting the setting pressure to 0.1MPa

Air piping diagram



Circuit diagram



Options

Product name	Transistor output	Cable length (after the LED)	Protected cable
DPA-A2	Blank: Not required TNA : NPN-NO TNB : NPN-NC TPA : PNP-NO TPB : PNP-NC	Blank: 3 m N : N m (in units of 1 m)	Blank: Not required WN : Braided wire cable N m (in units of 1 m)

- ▶ Order e.g. **DPA-A2-5W3**
- ▶ Transistor output order e.g. **DPA-A2TNA-5**

Transistor output

NPN open collector

PNP open collector

Power supply voltage	DC12V~DC24V
Current consumption	Less than 10mA
Output capacity	100mA (resistance load)
Output mode	A: Normally open/B: Normally closed
Output specifications	NPN open collector/PNP open collector
Residual voltage	1V or lower
Current leakage	0.8mA or less
Insulation resistance	At least 100MΩ with DC 250V megger
Protective circuits	Surge protection
Cable	Oil-resistant cable 3-core φ4 AWG30

Braided wire for cable protection

Material : SUS, clockwise solid-coiling Unit : mm

Minimum bending : 7mm

Clockwise solid-coiling φ0.5

Connection tube screw size 8×1

Switch side is fastened with screws and machine side is simply cut.
When extension is needed, use a connection tube.

«Standard Precautions»

1. Since gaps are formed at bent section (especially at the attachment end) of the braided wire, ensure that the intrusion of cuttings does not damage the cable.
2. Care should be taken to avoid crushing of the cable during clamping.
3. When binding up and clamping with other cables, make sure not to apply excessive force and weight to the attachment end.
4. Fabricate the braided wire a little shorter than the cable length, since it extends with its own weight.

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The specifications and descriptions are subject to change without notice due to improvements in products.