

Air sensor category and usage

The air sensor consists of a detection nozzle and an air-electricity converter (air-air converter). In principle, the detection air is blown onto the workpiece and the generated back pressure is converted to an electrical signal by the air-electricity converter. The detection nozzle is the air blow-off port. A compact sensor can be manufactured since the nozzle is formed with hole machining. Various air sensors are available to match your application.

Air sensor category

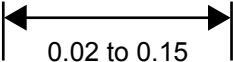
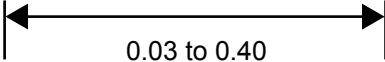
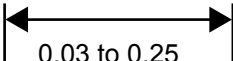
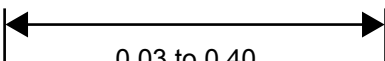
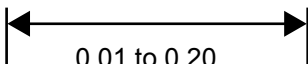
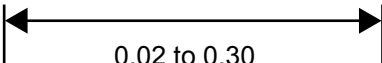
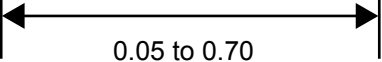
Series	Detection	Detection mechanism output method	Nozzle	Major applications	Page
Contact confirmation switch (digital gap switch) GPS3 Series	Pressure detection	Pressure sensor	ø1.5 Standard	Contact confirmation of 0.02 to 0.4 mm	1236
Contact confirmation switch (gap switch) GPS2 Series	Bridge detection	Diaphragm + proximity switch Proximity (NPN, PNP)	ø1.5 Standard	Contact confirmation of 0.03 to 0.4 mm	1260
Close contact confirmation switch HPS Series	Bridge detection	Diaphragm + proximity switch Proximity (NPN, PNP)	ø1.5 Standard (ø1 to ø2) back pressure nozzle	Contact confirmation of 0.01 to 0.7 mm Close contact confirmation of tool changer Enhancement of detection distance (3 mm)	1274
Cutting tool breakage detection switch TLPS Series	Bridge detection	Diaphragm + proximity switch Proximity (NPN, PNP)	Detecting nozzle	Drill tip breakage detection (ø0.3 to ø30)	1288
PEL switch APA1 Series	Bridge detection Gauge detection	Float + reed switch Reed	Various (for positive pressure)	Dimension identification and workpiece confirmation, etc. (General purpose applications)	1318
SEPEL switch DPS Series	Bridge detection Gauge detection	Pressure sensors Proximity (NPN)	ø0.15 to ø2 (Suction confirmation)	Suction confirmation	1330

● Detection

Pressure detection <p>Pressure sensors around orifices are used to convert to gap values (reference values) for output.</p>	Gauge pressure detection <p>With this detection, the sensor reads whether detected pressure is higher or lower than atmospheric pressure.</p>	Bridge detection <p>With this method, the supply air is branched into two circuits, each provided with a sensor nozzle. The difference between the back pressures of the nozzles is compared, and even if the supply pressure fluctuates, the relative magnitude of the back pressures does not change. This is extremely stable detection.</p>
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F.R.L.
F.R.
F (Filtr)
R (Reg)
L (Lub)
Drain Separ
Mech Press SW
Res press exh valve
SlowStart
Anti-bac/Bac-remove Filtr
Film Resist FR
Oil-ProhR
Med Press FR
No Cu/ PTFE FRL
Outdrs FRL
Adapter Joiner Press Gauge
CompFRL
LgFRL
PrecsR
VacF/R
Clean FR
ElecPneuR
AirBoost
Speed Ctrl
Silncr
CheckV/ other
Fit/Tube
Nozzle
Air Unit
PresCompn
Electro Press SW
ContactSW
AirSens
PresSW Cool
Air Flo Sens/Ctrl
WaterRISens
TotAirSys (Total Air)
TotAirSys (Gamma)
Gas generator
RefrDry
DesicDry
HiPolymDry
MainFiltr
Dischrg etc
Ending

Using the contact confirmation switch GPS3/GPS2 Series and close contact confirmation switch HPS Series

Model	Model No.	Detection distance (mm)										Features
		0.01	0.02	0.03	0.05	0.20	0.25	0.30	0.40	0.70	3.0	
Contact confirmation switch (digital gap switch)	GPS3-E											· Digital display · High precision 2-point output · High maintainability · IO-Link communication compatible (option)
	GPS3											
Contact confirmation switch (gap switch)	GPS2-05											· Push-in adjustment by dial (Stepped setting) (Master gauge not required)
	GPS2-07											
Close contact confirmation switch	HPS-05											· Variable adjustment by precise needle · Enlarged detection distance when used with back pressure nozzle
	HPS-07											
	HPS-10											
	HPS-05+ Back pressure nozzle	