

Pressure Sensors



Pressure Sensor Product Variations

Fluid

For Gas

Silicon diaphragm

- Air, Nitrogen, Argon, Carbon dioxide

For Gas and Liquid

Stainless steel diaphragm

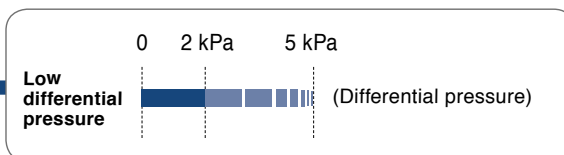
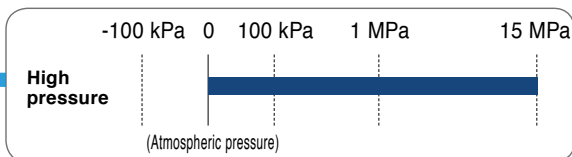
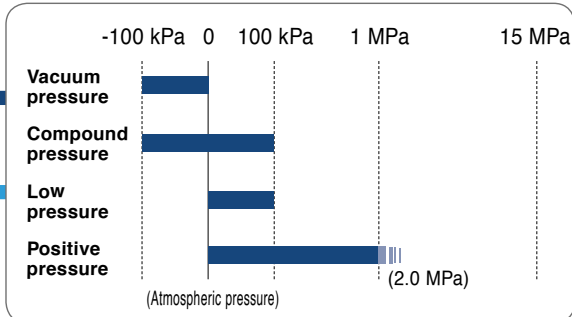
- Liquids such as water, oil, etc. Air, Nitrogen, Argon, Carbon dioxide
- Anti-corrosiveness, Airtightness

Ceramic diaphragm

- Liquids such as water, oil, etc. Air, Nitrogen, Argon, Carbon dioxide

Pressure range

Pressure Range and Application Example p. 7

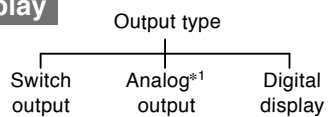


Pressure Sensor Product Variations

Product Type

Applicable Model

Integrated Display



- Sensor/Display integrated type
- Numerically displays the setting and measurement values.

*1 Excludes Z/ISE20

For Gas

- Z/ISE20□ series
- Z/ISE10 series
- ISE7□ series

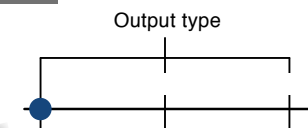


For Gas and Liquid

- Z/ISE20C series
- ISE7□G series
- ISE75H series (For high pressure)



Switch

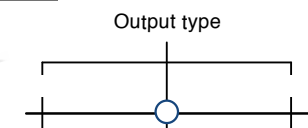


- Sensor only product
- ON/OFF confirmed by LED

- Z/ISE1 series
- Z/ISE2 series
- PS1000/1100/1200 series



Remote Sensor



- Sensor only product
- Can be connected to a separate monitor

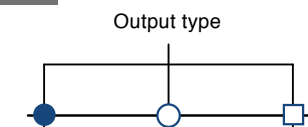
- PSE53□ series
- PSE54□ series
- PSE550 series (For low differential pressure)



- PSE56□ series
- PSE57□ series



Remote Monitor



- Sensor type display
- Numerical control can be placed in a distant location.

[For 1 ch]

- PSE300A/300AC series



[For 4 ch]

- PSE200A series



Basic Performance Table (For Gas and Liquid)

	Model Selection Table					
	Sensors with Displays					
Model	ZSE20(F) ISE20	ZSE20A(F) ISE20A	ZSE20B(F) ISE20B	ZSE20B(F)-L ISE20B-L	ZSE10(F) ISE10	ISE70/71
Fluid	General pneumatic					
Calibration method						Push-button calibration
Set pressure range	-105 to 10 kPa -105 to 105 kPa -0.105 to 1.05 MPa					-0.105 to 1.05 MPa -0.105 to 1.68 MPa
Power supply voltage	12 to 24 VDC±10% (Ripple±10%)			12 to 24 VDC±10% (Ripple±10%) 18 to 30 VDC±10%*1 (Ripple±10%) *1 When used as an IO-Link device	12 to 24 VDC±10% (Ripple±10%)	12 to 24 VDC±10% (Ripple±10%) 18 to 30 VDC±10%*1 (Ripple±10%) *1 When used as an IO-Link device
Temperature characteristics (based on 25°C)	±2% F.S. (-5 to 50°C)				±2% F.S. (0 to 50°C)	
Repeatability	±0.2% F.S. ±1 digit					±0.5% F.S.
Hysteresis	Hysteresis mode: Variable Window comparator mode: Variable					
Output	NPN/PNP open collector	NPN/PNP open collector Analog voltage output Analog current output		IO-Link: Switch output * Switch output: NPN or PNP switching type	NPN/PNP open collector Analog voltage output	IO-Link: Switch output 1 + Switch output 2 Switch output 1 + Switch output 2 *Switch output: NPN or PNP switching type
Display	2-color display				1-color display	2-color display
Enclosure	IP40		IP65		IP40	IP67
Note	3-screen display Panel mounting possible Selectable pressure unit Anti-chattering function Display calibration function Power saving mode Sub screen setting function	3-screen display Panel mounting possible Selectable pressure unit Anti-chattering function Display calibration function Power saving mode Sub screen setting function Copy function Auto shift function		IO-Link compatible 3-screen display Panel mounting possible Selectable pressure unit Anti-chattering function Display calibration function Power saving mode Sub screen setting function	Panel mounting possible DIN rail mountable Selectable pressure unit Anti-chattering function Display calibration function Power saving mode Copy function	IO-Link compatible 3-screen display Selectable pressure unit Anti-chattering function Power saving mode Sub screen setting function

Basic Performance Table (For Gas and Liquid)

Model Selection Table

Sensors with Displays (* no display)

ISE7□G	ISE75H	ZSE20C(F) ISE20C(H)	ZSE1 ISE1	ZSE2 ISE2	PS1000 PS1100 PS1200	ISE35
						
General fluids			General pneumatic			
			Trimmer calibration			Push-button calibration
-0.105 to 1.05 MPa -0.105 to 2.1 MPa -0.25 to 5.25 MPa -0.5 to 10.5 MPa	0.5 to 15 MPa	-105 to 10 kPa -105 to 105 kPa -0.105 to 1.05 MPa -0.105 to 2.1 MPa	-101 to 0 kPa 0 to 100 kPa 0 to 1 MPa		-100 to 0 kPa -0.1 to 0.4 MPa -0.1 to 0.45 MPa	-0.1 to 1 MPa
12 to 24 VDC±10% (Ripple±10%)						
ISE70G: ±3% F.S. Other models: ±5% F.S. (-5 to 50°C)	±3% F.S. (0 to 50°C)		±3% F.S. (0 to 60°C)		±3% F.S. (0 to 60°C)	
		±0.2% F.S.±1 digit	±1% F.S.			
			Variable 1 to 10% Fixed 3% F.S. or less	Fixed 3% F.S. or less	Fixed 4% F.S. or less Fixed 10% F.S. or less	Hysteresis mode: Variable Window comparator mode: Variable
1 setting NPN/PNP 2 settings NPN/PNP open collector PNP open collector		NPN/PNP open collector Analog voltage output Analog current output	NPN/PNP open collector Analog voltage output	NPN/PNP open collector	2-wire type	NPN/PNP open collector
						2-color display
		IP65	IP40			
Selectable pressure unit Anti-chattering function Display calibration function		3-screen display Panel mounting possible Selectable pressure unit Anti-chattering function Display calibration function Power saving mode Copy function Auto shift function	Compliant with ZM ejector	Compliant with ZX/ZR ejector	Modular type mountable Series ARM10/11 mountable Selectable pressure unit Anti-chattering function Power saving mode	

Basic Performance Table (For Gas and Liquid)

Model Selection Table						
Remote Sensors						
Model	PSE53		PSE54	PSE550	PSE56	PSE57
Fluid	General pneumatic				General fluids	
Calibration method						
Set pressure range	-101 to 0 kPa -101 to 101 kPa 0 to 101 kPa 0 to 1 MPa		-101 to 0 kPa -100 to 100 kPa 0 to 1 MPa	0 to 2 kPa	-101 to 0 kPa -100 to 100 kPa 0 to 500 kPa 0 to 1 MPa	-100 to 100 kPa 0 to 500 kPa 0 to 1 MPa 0 to 2 MPa 0 to 5 MPa 0 to 10 MPa
Power supply voltage	12 to 24 VDC±10% (Ripple±10%)					
Temperature characteristics (based on 25°C)	±2% F.S. (0 to 50°C)		±3% F.S. (0 to 50°C)	±2% F.S. (0 to 50°C) ±3% F.S. (-10 to 60°C)	PSE570 ±2% F.S. (0 to 50°C) ±3% F.S. (-10 to 60°C) PSE573/574 ±3% F.S. (0 to 50°C) ±4% F.S. (-10 to 60°C) PSE575/576/577 ±5% F.S. (-10 to 60°C)	
Repeatability	±1% F.S.	±0.2% F.S.	±0.3% F.S.	±0.2% F.S.	PSE570/573/574 ±0.2% F.S. PSE575/576/577 ±0.5% F.S.	
Hysteresis						
Output	Analog voltage output			Analog voltage output Analog current output		
Display						
Enclosure	IP40				IP65	
Note						

Basic Performance Table (For Gas and Liquid)

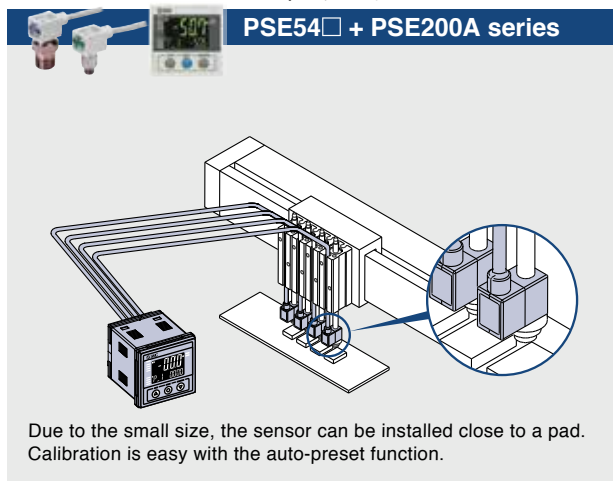
Model Selection Table			
Remote Sensor Monitors			
Model	PSE200A 	PSE300A 	PSE300AC 
Sensor input amount	4 inputs	1 input	
Calibration method	Push-button calibration		
Set pressure range	-105 to 10 kPa PSE531/541/561 -105 to 105 kPa PSE533/543/563/573 -0.2 to 2.1 kPa PSE550 -10 to 105 kPa PSE532 -50 to 525 kPa PSE564/574		-0.105 to 1.05 MPa PSE530/540/560/570 -0.105 to 2.1 MPa PSE575 -0.25(-0.1)* ¹ to 5.25 MPa PSE576 -0.5(-0.1)* ¹ to 10.5 MPa PSE577 *1 (): For PSE300AC
Power supply voltage	12 to 24 VDC±10% (Ripple±10%)		
Temperature characteristics (based on 25°C)	±0.5% F.S. (0 to 50°C)		
Repeatability	±0.1% F.S. ±1 digit		
Hysteresis	Hysteresis mode: Variable Window comparator mode: Variable		
Output	IO-Link NPN/PNP open collector 1 CH: 2 outputs 2 to 4 CH: 1 output	NPN/PNP open collector Analog voltage output Analog current output * Switch output: NPN or PNP (switching type)	NPN/PNP open collector * Switch output: NPN or PNP (switching type)
Display	2-color display		
Enclosure	Front only IP65 The rest IP40	IP40	IP65
Note	IO-Link compatible 3-screen display Panel mounting possible Auto shift function Display calibration function Anti-chattering function Channel to channel copy function Selectable pressure unit	3-screen display Panel mounting possible Auto shift function Display calibration function Anti-chattering function Selectable pressure unit Current input possible Copy function	3-screen display Display calibration function Anti-chattering function Selectable pressure unit Current input possible

Pressure Range and Application Examples

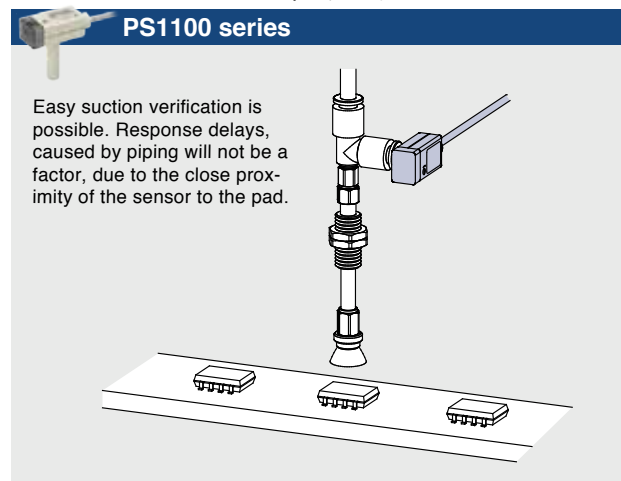
Application Examples	Pressure range	(Atmospheric pressure)				
		-100 kPa	0	100 kPa	1 MPa	15 MPa
• Suction verification	Vacuum pressure					
• Suction verification (confirmation of release pressure)	Compound pressure					
• Workpiece placement verification	Low pressure					
• Supply pressure confirmation • Leak test	Positive pressure					
• Liquid coolant pressure control	High pressure					
• Monitoring filter clogging • Level detection of a liquid	Low differential pressure	0 2 kPa 5 kPa (Differential pressure)				

Suction Verification

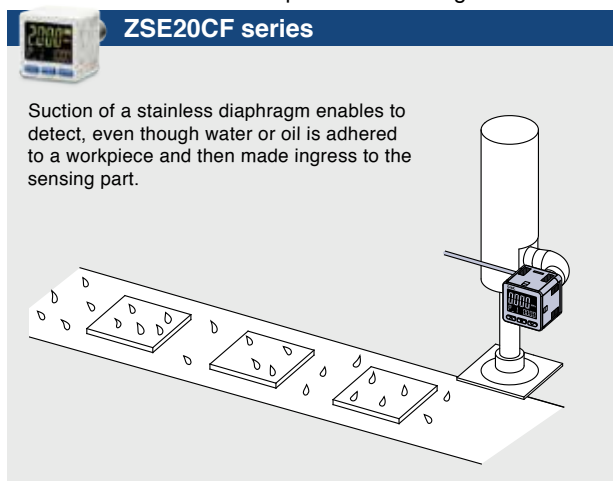
Sensor installed close to a pad(No. 1)



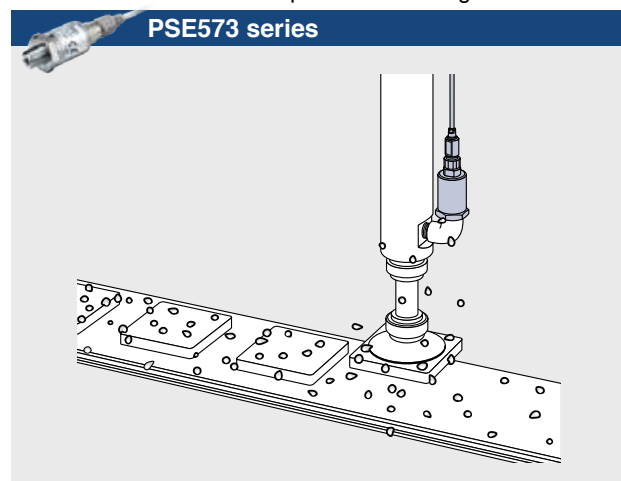
Sensor installed close to a pad(No. 2)



Suction verification of workpieces containing moisture

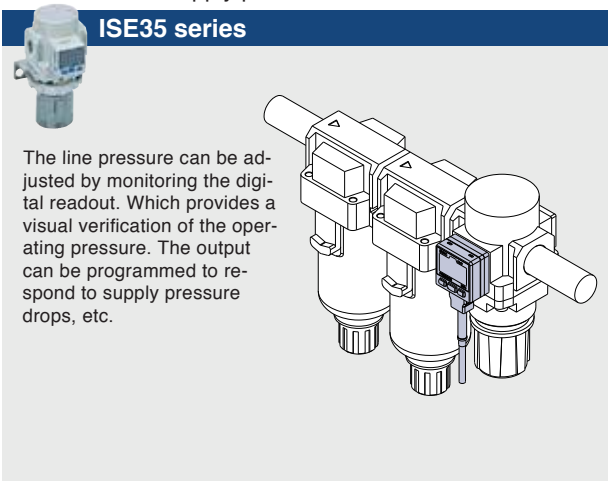


Suction verification of workpieces containing moisture

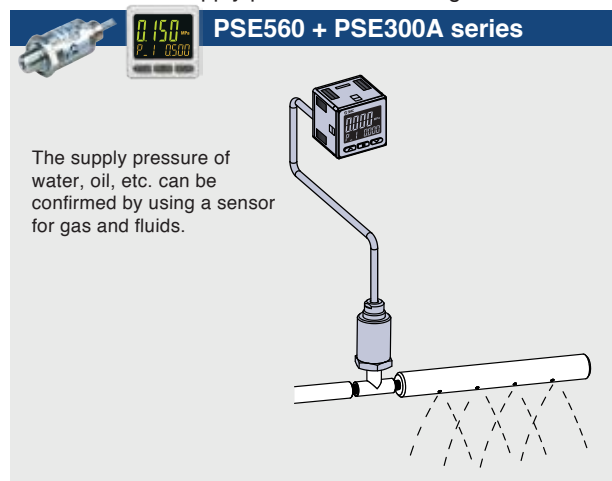


Supply Pressure Confirmation

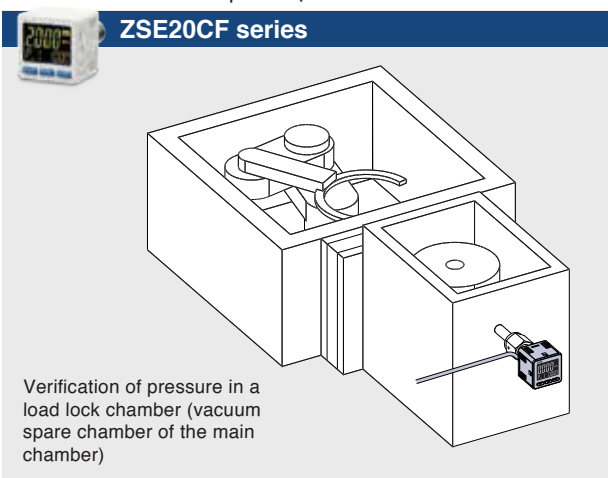
Confirmation of supply pressure in air line



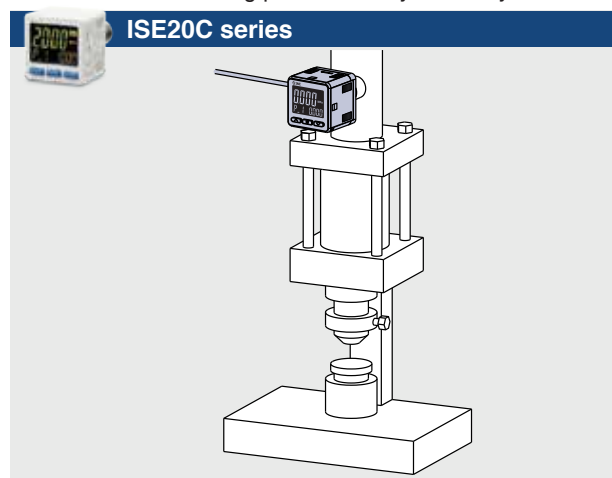
Confirmation of supply pressure of cleaning lines



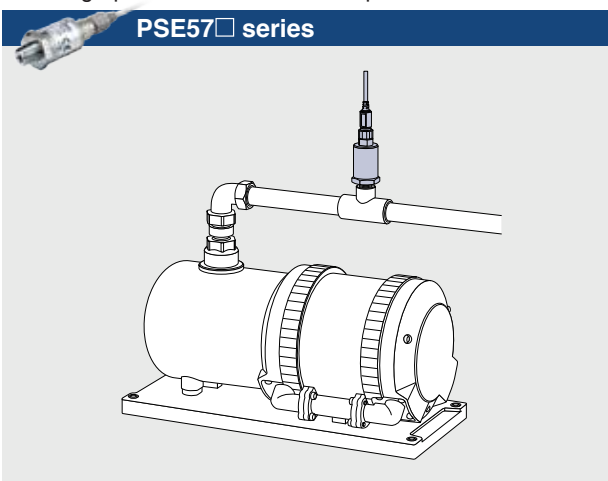
Confirmation of atmospheric pressure for a load lock chamber



Confirmation of working pressure of hydraulic cylinder

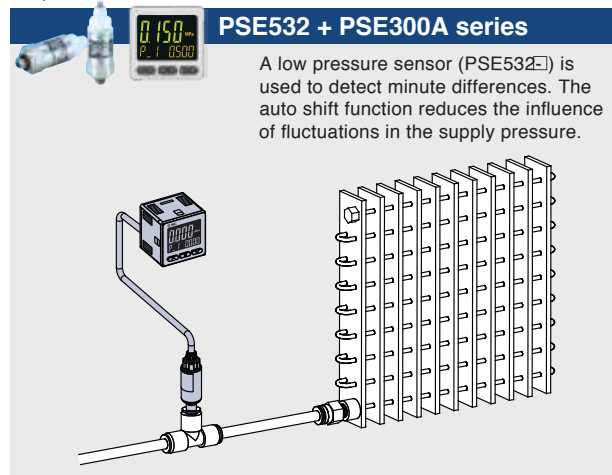


Discharge pressure control for compressor



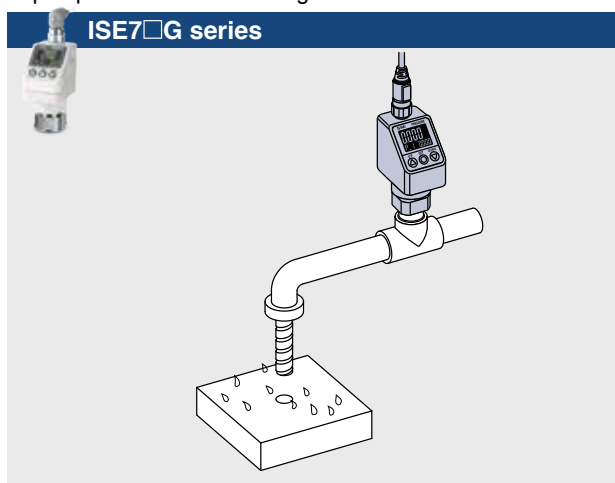
Leak Test

Inspection of a radiator

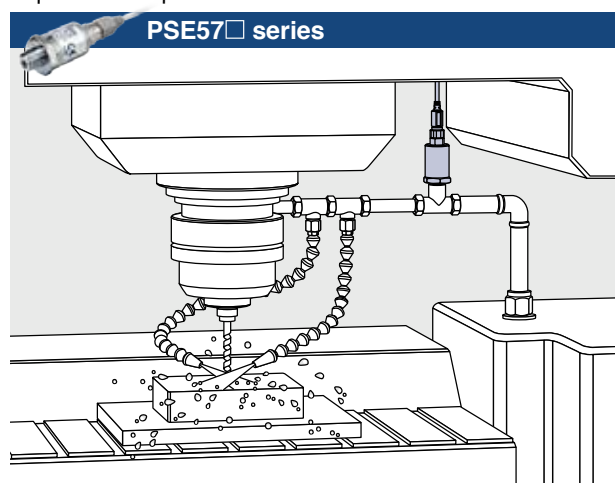


Liquid Coolant Pressure Control

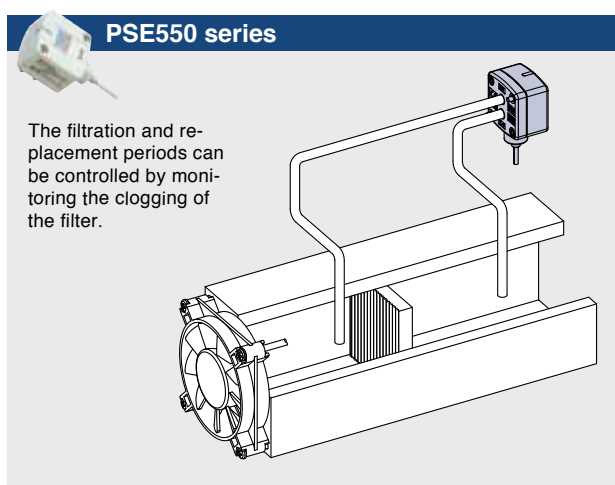
Liquid pressure control of a gun drill



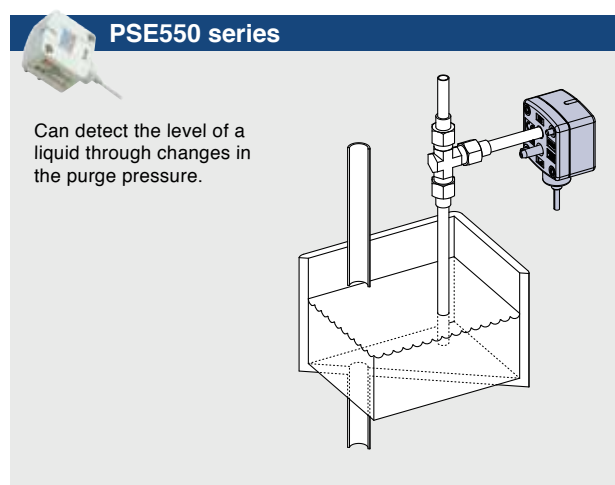
Liquid coolant pressure control



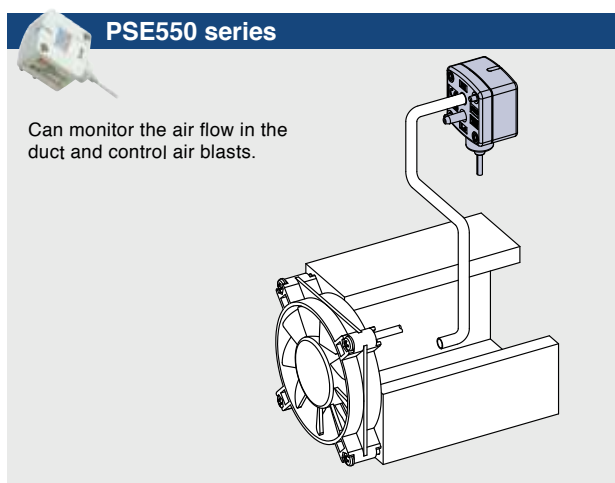
Monitoring Filter Clogging



Liquid Level Detection



Air Flow Control



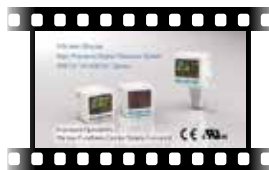
IO-Link Compatible

3-Screen Display High-Precision Digital Pressure Sensor ZSE20B(F)/ISE20B

2 outputs



Videos can be viewed here



IO-Link Compatible

- IO-Link version V1.1
- Process data length 2-byte input
- Transmission speed COM2 (38.4 kbps)
- Minimum cycle time 2.3 ms

3-Screen Display High-Precision Digital Pressure Sensor ISE7□/7□(G)



Videos can be viewed here



IO-Link Compatible

- IO-Link version V1.1
- Process data length 2-byte input
- Transmission speed COM2 (38.4 kbps)
- Minimum cycle time 2.3 ms
- IO-Link port type Class A

3-Screen Multi-channel Digital Sensor Monitor PSE200A

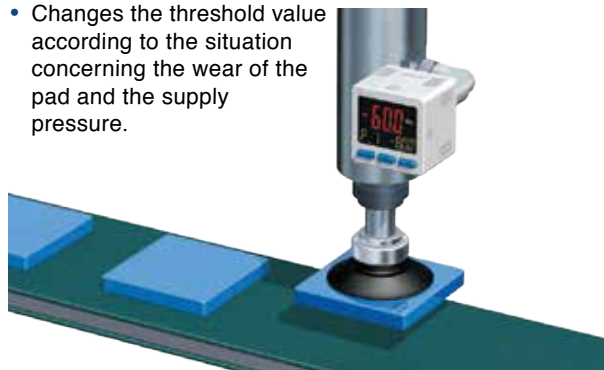


IO-Link Compatible

- IO-Link version V1.1
- Process data length 10-byte input
- Transmission speed COM2 (38.4 kbps)
- Minimum cycle time 4.8 ms

Employs predictive maintenance for the early detection of declining adsorption capacity

- Monitors switch ON/OFF signals and analog values to determine the wear of the pad.
- Changes the threshold value according to the situation concerning the wear of the pad and the supply pressure.



Preventive maintenance to prevent supply pressure and sensor abnormalities

Confirm the pressure condition during operation and monitor the device status.

Monitor the abnormal pressure and the abnormal status of a pressure sensor remotely to prevent unexpected stops.



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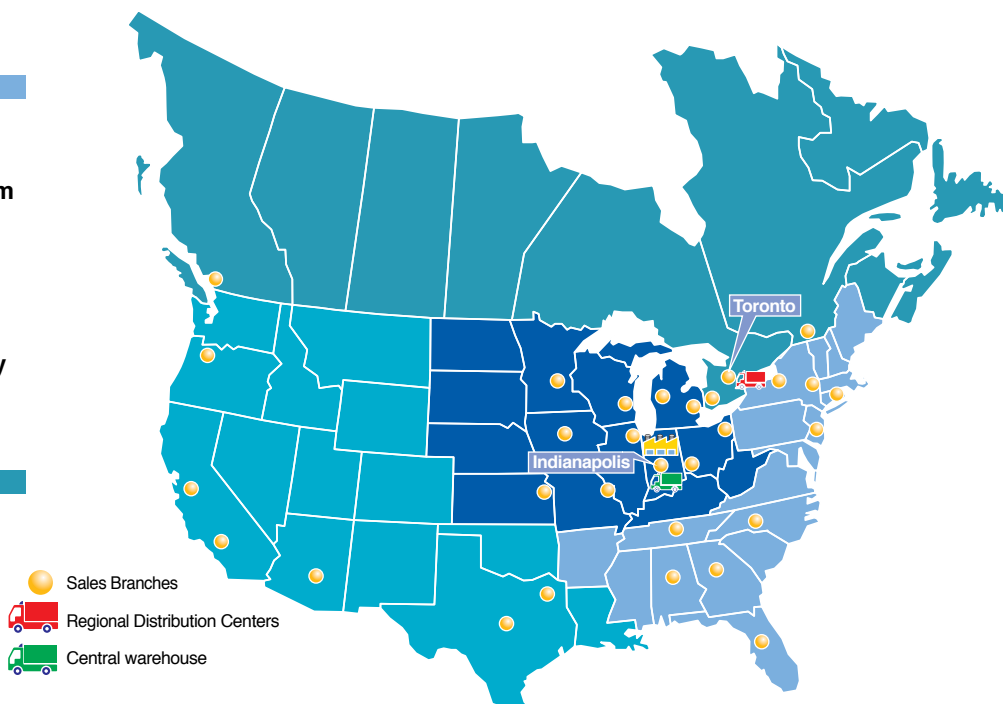
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