

Environmental-resistant Compact Pressure Sensors

AP-50 Series

Features

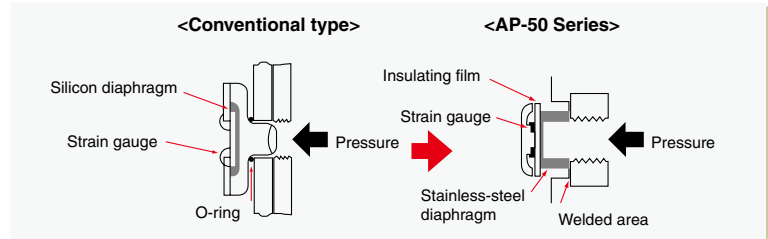
- High-performance all-in-one design
- Environmental-resistant design
- Employing stainless-steel diaphragm



Description

Employing stainless-steel diaphragm

The stainless steel is used for the contact area to enable pressure detection for a wide range of fluids including liquid fluids and gases. In addition, a direct-sensing structure with excellent environmental resistance is employed for the diaphragm.

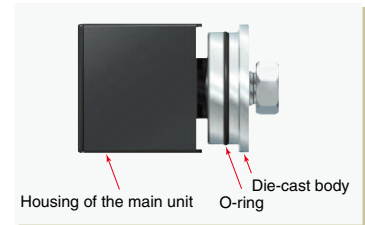


Environmental-resistant model with ultra-compact design

An ultra-compact design is realized with this environmental-resistant model that is capable of detecting the pressure of water and oil.

Conforms to protective construction IP-67 with dust-/ splash-proof construction

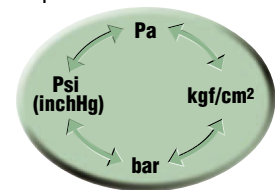
The front face of the external panel is bonded using ultraviolet rays. In addition, a large-diameter O-ring is used for the connecting area between the housing and die-cast body, eliminating the need for an environmental-resistant protective casing. The structure ensures safe and reliable operation of the product in metal processing applications or in a highly humid environment such as in the food processing industry.



Unit conversion function

The pressure can be displayed in any of four pressure units enabling it to be used worldwide.

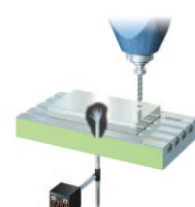
- Pa: International System of Units (SI)
- kgf/cm², mmHg: Japan
- bar: Europe
- Psi: North America



Applications



Checking the suction condition of liquid crystal glass in the cleansing process



Confirmation of workpiece seating on cutting or pressing machines



Controlling the coolant water pressure of molding machines

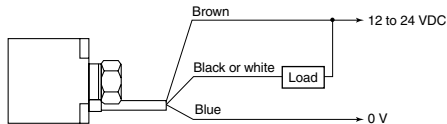
Specifications

Type	Negative pressure		Positive pressure	
Model	AP-51/51Z		AP-52/52Z	AP-53/53Z
Rated pressure	0 to -1.013 bar (0 to -101.3 kPa)		0 to 1.000 bar (0 to 100.0 kPa)	0 to 0.01 bar (0 to 1.000 MPa)
Proof pressure	5.0 bar (500 kPa)			20 bar (2 MPa)
Pressure type/Fluid types	Gauge pressure/Non-corrosive gases or liquids for stainless steel			
Display	4-digit, 7-segment LED (Character height: 8 mm)			
Display resolution	0.001 bar, 0.01 Psi, 0.1 kPa, 0.5 mmHg		0.001 bar, 0.01 Psi, 0.1 kPa, 0.001kgf/cm ²	0.01 bar, 0.1 Psi, 0.001 MPa, 0.01kgf/cm ²
Detectable pressure range	From zero adjustment position to -15% to +120% of F.S.			
Repeatability	±0.5% max. of F.S. ±1 digit max.			
Response time	5 ms			
Enclosure rating	IP-67			
Zero-shift input ¹	Non-voltage input (contact or non-contact), Input response time: 20 ms min.			
Control output	100 mA max. (40 V max.), Residual voltage: 1 V max. (2 outputs) (N.O./N.C. selectable)			
Power supply/Current consumption	12 to 24 VDC±10% Ripple (p-p): 10% max., 70 mA max.			
Ambient temperature	0 to +50°C (32 to 122°F), No condensation			
Relative humidity	35 to 85%, No condensation			
Vibration	10 to 55 Hz, 1.5 mm double amplitude in X, Y, and Z directions, 2 hours respectively			
Shock	100 m/s2 (approx. 10G) in X, Y, and Z directions, 3 times respectively			
Material	Joint: stainless steel, Housing: PBT, die-cast zinc			
Weight (including 2-m cable)	Approx. 185 g			

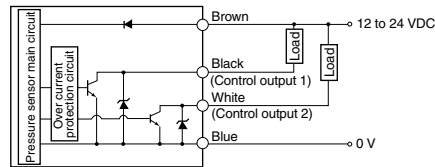
1. Type Z only

Connections and Input/Output Circuits

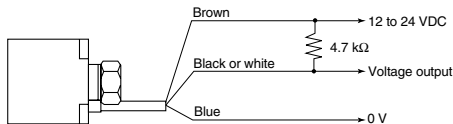
Drive current load



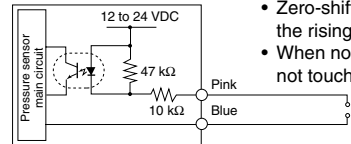
Output circuit



Input to voltage input equipment



Input circuit (Zero-shift input) *Type Z only

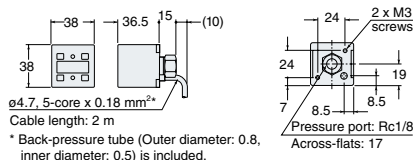


- Zero-shift input resets the display to "0" at the rising edge of the signal.
- When not in use, make sure the circuit will not touch other wires.

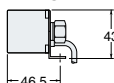
Dimensions

Sensor unit

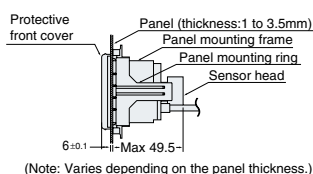
AP-51/51Z/52/52Z/53/53Z



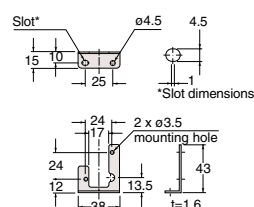
When mounting bracket is attached



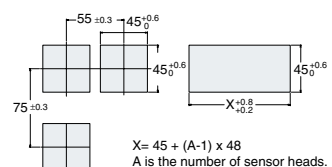
When flush-mounted in control panel with OP-31357 (optional)



Mounting bracket (standard)

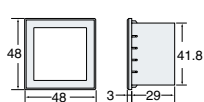


Panel cutout

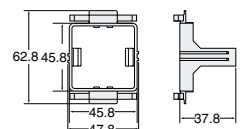


The OP-31357 consists of the following components:

Panel mounting frame



Panel mounting ring



Protective front cover

