Autonics

Differential Pressure Gauges
SS-3302 SERIES

INSTRUCTION MANUAL

Thank you for choosing our Autonics product.
Please read the following safety considerations before use.

■ Safety Considerations

※Please observe all safety considerations for safe and proper product operation to avoid hazards.
※⚠ symbol represents caution due to special circumstances in which hazards may occur.

⚠ **Warning** Failure to follow these instructions may result in serious injury or death.

⚠ **Caution** Failure to follow these instructions may result in personal injury or product damage.

⚠ Warning

1. **Fail-safe device must be installed when using the unit with machinery that may cause serious injury or substantial economic loss. (e.g. nuclear power control, medical equipment, ships, vehicles, railways, aircraft, combustion apparatus, safety equipment, crime/disaster prevention devices, etc.)**
   Failure to follow this instruction may result in personal injury, fire or economic loss.
2. **Do not use the unit in the place where high humidity, direct sunlight, radiant heat, vibration, impact, or salinity may be present.**
   Failure to follow this instruction may result in explosion or fire.
3. **Use maximum pressure within 75% of the maximum scale for static pressure and within 60% for coaxial pressure.**
4. **Install and use a extra protective device in the location with rapid changes, vibration or pulsation of the pressure.**
5. **When installing pressure gauge, always install the cork valve together. Slowly open or close it to avoid sudden changes in pressure.**
6. **For pressure measurement of flammable objects such as oxygen, acetylene, LPG, etc., use the pressure gauge with 'USE NO OIL' mark.**
7. **Use a special tested pressure gauge for pressure measurement of toxic or freon gas.**
8. **When measuring high temperature or corrosive liquid/gas, select pressure gauge after contact the head office.**

⚠ Caution

1. **Use the unit within the rated specifications.**
   Failure to follow this instruction may result in fire or product damage.
2. **Keep metal chip, dust, and wire residue from flowing into the unit.**
   Failure to follow this instruction may result in fire or product damage.
3. **Check the polarity of the contact before wiring the unit.**
   Failure to follow this instruction may result in explosion or fire.
4. **This product is designed to detect the pressure of noncorrosive fluid. Do not use for corrosive fluid.**
   Failure to follow this instruction may result in product damage.
5. **Since the pressure gauge is a precision instrument, do not make excessive impact when transporting, installing or using it.**
6. **Install it in a clean, ambient temperature range of -20 to 60℃, and where there is no danger of natural disasters such as lightning.**
7. **Calibrate at least once a year for precision maintenance and safety management.**
8. **Install a dedicated instrument for special applications such as food, hygiene.**

※The above specifications are subject to change and some models may be discontinued without notice.
※Be sure to follow cautions written in the instruction manual and the technical descriptions (catalog, homepage).

■ Specification

Series		SS-3302
Outer diameter		Ø100mm, Ø150mm
Accuracy		+20℃ ±1.5% F.S. (±0.5℃ per ±10℃)
Maximum pressure		5MPa
Manufacturing pressure range		0~50kPa, 0~1MPa
Rated pressure range	Static	75% F.S.
	Variable	60% F.S.
Pressure limitation		120% F.S.
Connecting screw		PT 1/4"
Type		・S: Standard (2B Bracket - U volt) ・3: Standard+3 Way manifold valve ・5: Standard+5 Way manifold valve
Mounting		On 2B pipe with U volt
Enviroment	Storage temperature	-20~60℃
	Operating temperature	-20~60℃, (fluid: max. 80℃)
Material (surface processing)	Case/Cover	SUS304
	Housing	SUS316
	Glass	Safety glass
	Pointer	Aluminum (black electro deposition coating)
	Dial plate	Aluminum (background-white coating, dial and character-black, red)
	Bellows	SUS316L
	Internal parts	SUS304

※Environment resistnace is rated at no freezing or condensation.

■ Ordering Information

SS-3302 – 10 – A – S

Type

S	Standard (2B bracket-U volt)
3	Standard + 3 Way manifold valve
5	Standard + 5 Way manifold valve
Z	Option

Pressure range

A	0~5kPa
B	0~10kPa
C	0~20kPa
D	0~30kPa
E	0~40kPa
F	0~50kPa
G	0~0.1MPa
H	0~0.2MPa
I	0~0.3MPa
J	0~0.4MPa
K	0~0.6MPa
L	0~1MPa
Z	Option

Size

10	100mm
15	150mm

Series

SS-3302	Differential pressure gauge

■ Unit Description

① Differential pressure indicator : Indicates differential pressure and flow rate.
② Zero point setting screw : Adjusts the zero change according to the installation location.
③ Impulse pipe : Connects between the main body and 3-way valve.
④ 3-Way valve : Prevents damage to differential pressure gauge by being opened and closed sequentially during pressurization and release.
⑤ Air outlet : Dischares internal air in pipe to outside during pressurization.
⑥ The main body: Measures a pressure.
⑦ Mounting part : Uses when mounting the differential pressure gauge.
⑧ U volt : Fixes mounting part to 2B pipe.

■ Dimensions

(Unit: mm)

1. The main body

Outer diameter	ØA	ØB
100	101	99
150	161.5	158

2. 3-Way manifold valve

■ Adjustment

[Example for 3 Way manifold valve]

1) When first installation, all valves of 3-way manifold are closed.
2) When the installation is complete, open ③ (equalizing valve) and ① (high pressure valve). At this time, check if the pointer indicate zero point, and if errors occur, adjust the zero points.
3) Before the next valve operation, the air outlet at the top shall be slowly opened to release any air remaining in the piping or main body. If there is an air, an indication error occurs.
4) After opening the ② (valve on the low pressure side), close ③ (equalizing valve), check that the pointer indicates the normal value before starting use.
5) Before removing the differential pressure valve from pipe, open ③ (equalizing valve), close ② (valve on the low pressure side), close ① (valve on the high pressure side), release remaining pressure to atmosphere by air outlet.

■ Cautions during Use

1. Follow instructions in 'Cautions during Use'. Otherwise, It may cause unexpected accidents.
2. The product must be installed vertically to maintain accuracy.
3. When using the product in out of rated pressure and temperature range cause demage to the product.
4. Take care of the impact when transporting and installing.
5. To prevent damage to the differential pressure system, use (3-Way, 5-Way) manifold valve together and check the high and low pressure sides before installing the manifold valve.
6. When the differential pressure measurement of the gas, it is needed to be installed at a position higher than the normal pressure outlet. In case of the liquid, install at a position lower than the normal pressure outlet.
7. Piping of the pressure outlet is needed to be connected to impulse pipe so that the upstream is high pressure and downstream is low pressure. When measuring the water level, connect the lower part of the pressurized tank to be high pressure and the higher part of it to be low pressure. In case of atmospheric storage tank, connect the lower part to be high pressure and open the low pressure side to the atmosphere.
8. Select diaphragm type with suitable material for corrosion prevention when measuring corrosive fluid.
9. If the high and low pressure sides of diaphram gauge are not installed on the same height from the ground, it is needed to conduct zero point adjustment by differential pressure gauge.
10. Use seal port to keep the temperature is proper when using the pressure gauge to high temperature fluid.
11. This unit may be used in the following environments.
    ① Indoor / Outdoor (in the environment condition rated in 'Specifications')
    ② Altitude max. 2,000 m
    ③ Pollution Degree 2
    ④ Installation Category II

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