

Autonics

Differential Low-pressure Gauges M-2000 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.

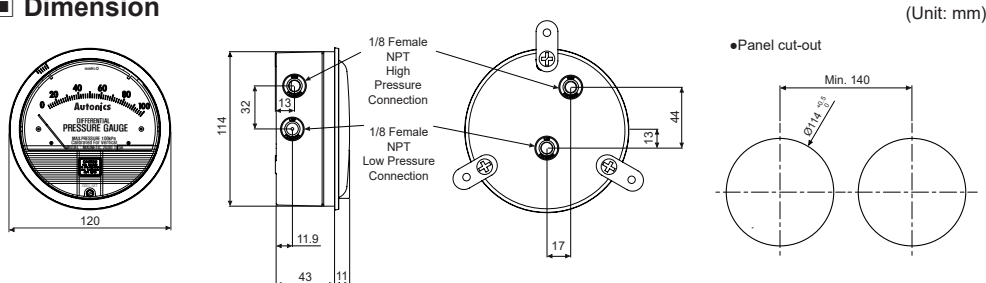
⚠ Warning

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 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 low differential 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 -7 to 60°C, 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.**

■ Dimension



※ 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		M-2000(Differential Low-pressure Gauges)
Outer diameter		Ø100mm
Accuracy		±2.0% F.S.
Connecting screw		NPT1/8(F)
Maximum internal pressure		Max. 0.1MPa(1kgf/cm ²)
Ambient temperature		-7 to 60℃
Mounting		Panel bracket
Material	Case, Cover	Aluminum die-casting
	Diaphragm	Silicone rubber
	Lens	Poly carbonate
	Hose connector	Brass
Weight		Approx. 510g

■ Pressure range

Code	Pressure range	Accuracy
A	-5 to 5mmH ₂ O	±4% F.S
B	-25 to 25mmH ₂ O	±3% F.S
C	-50 to 50mmH ₂ O	
D	-100 to 100mmH ₂ O	
E	-500 to 500mmH ₂ O	
F	0 to 10mmH ₂ O	±2% F.S
G	0 to 50mmH ₂ O	
H	0 to 100mmH ₂ O	
I	0 to 200mmH ₂ O	
J	0 to 300mmH ₂ O	
K	0 to 500mmH ₂ O	
L	0 to 1000mmH ₂ O	
M	0 to 2000mmH ₂ O	
N	0 to 3000mmH ₂ O	
O	0 to 5000mmH ₂ O	

■ Usage

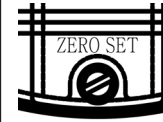
There are 2 inlet port (high pressure, low pressure) each on the side and rear.

Close ports that are not used either side or rear.

Refer to the following instructions depending on the user environment.

- When using a static pressure, connect to the high pressure port and open the low pressure port.
- When using a differential pressure, connect to the high pressure port and the low pressure port.
- When using a negative pressure, connect to the low pressure port and open the high pressure port.

■ Zero set



If the indicator is not in the zero position under normal pressure, set zero by using (-) driver to "ZERO SET" on the front panel.
Turn clockwise or counterclockwise to adjust the needle to the 0" position.

■ 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 damage to the product.
4. Take care of the impact when transporting and installing.
5. Use the high and low pressure sides correctly according to the usage method.
6. 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.
7. 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.
8. 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.
9. 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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