

KOGANEI

Air Treatment

PRESSURE GAUGE

INSTRUCTION MANUAL Ver.1.0

Handling Instructions and Precautions



Small Pressure Gauge, Pressure Gauge, Panel Mounting Pressure Gauge Small Precision Pressure Gauge, Vacuum Gauge

Mounting and piping

● Small Pressure Gauge, Pressure Gauge, Small Precision Pressure Gauge, Vacuum Gauge

1. While any mounting direction is acceptable, install a throttle mechanism, etc., When mounting between a valve and actuator, or other location where pressure fluctuation can be intense.
2. When mounting and piping a pressure gauge, never grab the pressure gauge body for the purpose of tightening. To tighten, always use a wrench on the hexagonal or square section of the connection port. The tightening torque should be at 294.2N·cm [26.0in. · lbf] or less.

● Panel Mounting Pressure Gauge

■ Panel Mounting Pressure Gauge (GP1-40, GP-40, GPV-40)

1. When mounting the panel mounting pressure gauge on a panel, machine the mounting holes in accordance with the panel cut dimensions. (See the panel cut dimensions)
2. Since the panel mounting pressure gauge in its packaged condition already has the pressure gauge assembled into the panel mount assembly, always remove the mounting ring from the assembly and then mount on a panel for use.
3. When mounting on a panel, first align the convex section of the back side of the panel mounting case flange to the small hole used for positioning on the panel cut hole (see Figure 1).
4. The tightening torque for the mounting ring used to secure the panel mounting case in position should be 980.7N·cm [86.8in. · lbf] or less.
5. If removing the pressure gauge itself from the panel mounting case, first remove the mounting ring, and then pull up on the tab located on the bottom of the panel mount case. The pressure gauge can now be easily removed by pushing it out. Be aware that forcibly attempting to remove the pressure gauge without first pulling on the tab could damage the convex section inside the tab that is used to prevent falling. (see Figure 2)

■ Panel mounting assembly (PM-40)

If purchasing the pressure gauge and panel mounting assembly separately, take the following steps when combining them to use as the panel mounting pressure gauge.

1. Remove the mounting ring from the panel mounting case, and insert the square part of the pressure gauge connection port into the square part at the bottom of the case.
2. When inserting, check that (1) the two set screws on the back of the pressure gauge case are on the lower side, and (2) two set screw holes are found on the bottom of the panel mounting case's square part. After confirming the above two items, push in the pressure gauge.
3. With the unit in the inserted position, check to see that the convex section at the bottom of the panel mounting case that is used to prevent falling is inserted into the mounting hole (φ 2.3) [0.091in.] at the bottom of the pressure gauge case. If the pressure gauge and panel mounting case have been assembled correctly, the insertion tab will snap smoothly into place. If it does not go in smoothly, lift up on the tab and the unit should then slide in easier (see Figure 3).



(PM-40)

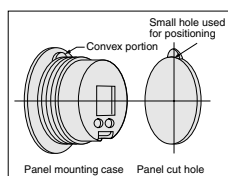


Figure 1

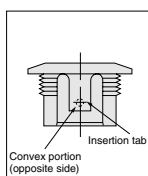


Figure 2

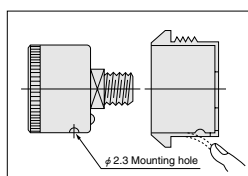


Figure 3

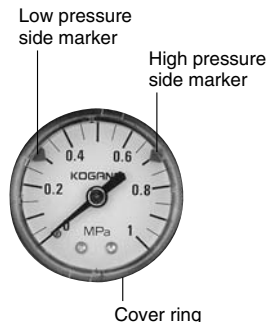
● Small Precision Pressure Gauge

1. The small precision pressure gauge is a pressure indicator designed for more sensitive pressure measurements. Avoid use in locations subject to vibrations or shocks.
2. The throttle valve uses an extremely small orifice for protection from shock pressure transmitted to the Bourdon tube and other internal devices, and is therefore sensitive to intrusions of particles, sludge mist, and other contaminants. For the media, use clean, dry air that has passed through a mist filter, etc.

Preset marker

● Small Pressure Gauge, Pressure Gauge

Preset markers can be used on the pressure gauges G1-40 and G3-40. Rotate the cover ring first to set the low pressure side, and then set the high pressure side.



Temperature characteristics

● Small Precision Pressure Gauge

1. The guaranteed temperature accuracy range is $25^{\circ}\text{C} \pm 5$ [$77 \pm 9^{\circ}\text{F}$]. Check the ambient temperature of the measurement location before proceeding with measurement.
2. If the temperature is out of the guaranteed temperature accuracy range, perform a pressure compensation by multiplying the ambient temperature by the humidity coefficient 0.05% F.S./ $^{\circ}\text{C}$.
3. In performing pressure compensation, add plus or minus in accordance with temperature characteristics, subtract when the temperature is at 30°C or higher, and adding when the temperature is at 20°C or lower.

Example: The measured value is 0.2MPa and the ambient temperature is 40°C (the pressure compensation value is $\pm 0.00015\text{MPa}$)

$$P_0 = P_1 \pm 0.00015 \times (T_1 - T_2) \\ = 0.2 - 0.00015 \times 10 \\ = 0.1985\text{MPa}$$

P_0 : Actual pressure (MPa)

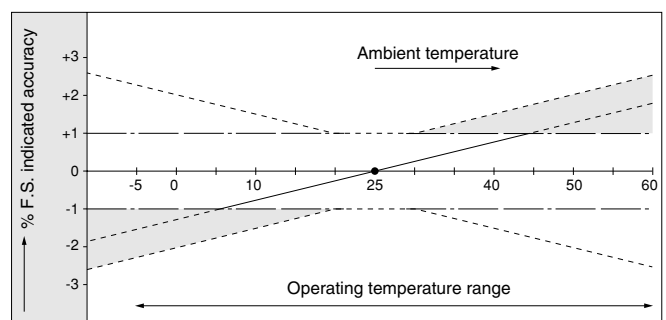
P_1 : Measured pressure (MPa)

T_1 : Guaranteed accuracy temperature ($^{\circ}\text{C}$)

T_2 : Ambient temperature ($^{\circ}\text{C}$)

※ (Even after performance of pressure compensation, there is an error of $\pm 1\%$ F.S.)

4. If not performing pressure compensation, the pressure indication accuracy value is accurate within the operating temperature range shown on the temperature characteristics graph. Be aware that the ambient temperature can change the indicated accuracy.
5. The graph below positions 25°C [77°F] as the standard temperature, and shows the amount of change from the indicated accuracy at 25°C [77°F] required for the ambient temperature to come within the operating temperature range, in terms of percent of full scale (F.S.).
6. The temperature characteristic lines shown in the graph below are representative examples only. Individual products will exhibit some variance from these lines in terms of characteristics.
7. The chain line ----- shows the indicated accuracy $\pm 1\%$ F.S., while the dotted line shows the amount of change required for the ambient temperature to come within the operating temperature range, calculated using the humidity coefficient. The figures within the framed area □ show the compensation range.



SMALL PRESSURE GAUGES

G1-20A, G1-20D, G1-20DPL



- Pressure applied sections are made of beryllium copper, for improved durability.
- A new plug-in type has been added, for snap-in connection to quick fittings.

Symbol



Order Codes

G 1 — 20

Direction/method of piping

A — Bottom piping

D — Back piping

DPL — Back piping plug-in

Outer diameter
20mm [0.79in.]

Pressure indication range
1 — Standard specification 1MPa [145psi.]

Pressure gauge

※ For handling instructions and precautions, see p.176.

Specifications

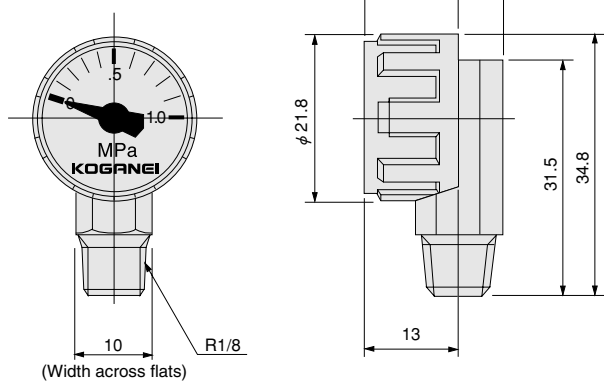
Item	Model	G1-20A	G1-20D	G1-20DPL
Media		Air (Conditioned air, max. 5μm)		
Port size		R1/8		φ 6 plug-in
Pressure indication range MPa [psi.]		0 ~ 1.0 [0 ~ 145]		
Accuracy		F.S. ± 4%		
Outer diameter		φ 20mm [0.79in.] (Scale plate outer diameter)		
Maximum operating pressure MPa [psi.]		0.93 [135]		
Operating temperature range (atmosphere and media) °C [°F]		5 ~ 60 [41 ~ 140]		
Mass g [oz.]		7 [0.25]		
Materials (body)		Plastic (PPS)		

Remark: The small pressure gauge uses a spiral Bourdon tube.

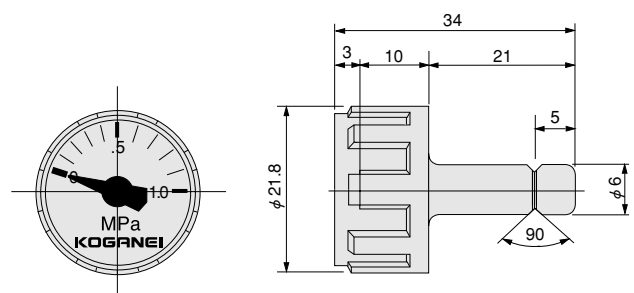
A multiple number of scale plates are used to compensate the spiral Bourdon tube's tolerance. Comparison of two or more scale plates can result in scale angle variation of up to 45°.

Dimensions of Small Pressure Gauges (mm)

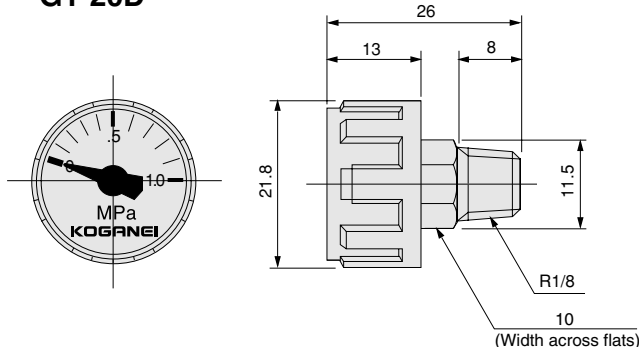
G1-20A



G1-20DPL



G1-20D



PRESSURE GAUGES

G1-40, G3-40, G6-40



Symbol



Order Codes

G - 40

Outer diameter

40 — Outer diameter 40mm [1.57in.]

Pressure indication range

1 — Standard specification 1MPa [145psi.]

3 — Low pressure specification 0.3MPa [44psi.]

6 — Low pressure specification 0.6MPa [87psi.]

Pressure gauge

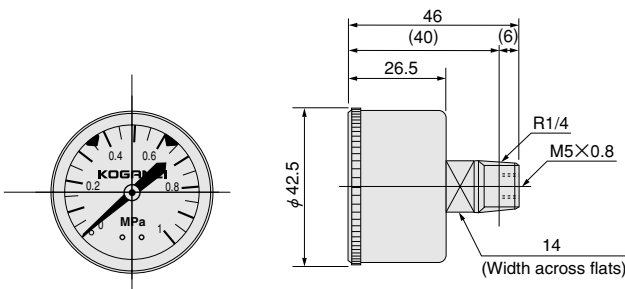
※ For handling instructions and precautions, see p.176.

Specifications

Item	Model	G1-40	G3-40	G6-40
Media		Air		
Port size		R1/4 (M5×0.8)		
Pressure indication range	MPa [psi.]	0 ~ 1.0 [0 ~ 145]	0 ~ 0.3 [0 ~ 44]	0 ~ 0.6 [0 ~ 87]
Accuracy		F.S.±3%		
Outer diameter	mm [in.]	40 [1.57]		
Maximum operating pressure	MPa [psi.]	0.93 [135]	0.25 [36]	0.55 [80]
Operating temperature range (atmosphere and media)	°C [°F]	5 ~ 60 [41 ~ 140]		
Mass	kg [lb.]	0.09 [0.20]		
Materials	Case	ABS		
	Flats of nipple section	Brass		
	Bourdon tube	Brass		

Dimensions of Pressure Gauges (mm)

G1-40
G3-40
G6-40



PANEL MOUNT PRESSURE GAUGES

GP1-40, GP3-40



- Compact and panel-mounted standard pressure gauges.
- Equipped with mechanism for preventing pressure gauge from falling from its case.
- Equipped with quick fittings for fast piping installation.

Symbol



Specifications

Item	Model	GP1-40	GP3-40
Media		Air	
Port size		R1/4 (M5×0.8)	
Pressure indication range	MPa [psi.]	0~1.0 [0~145]	0~0.3 [0~44]
Accuracy		F.S.±3%	
Outer diameter	mm [in.]	53 [2.09]	
Maximum operating pressure	MPa [psi.]	0.93 [135]	0.25 [36]
Operating temperature range (atmosphere and media)	°C [°F]	5~60 [41~140]	
Mass	kg [lb.]	0.106 [0.234]	
Materials (Case/mounting ring)		Plastic (ABS/POM)	

Order Codes

GP - 40

Outer diameter

40 — Outer diameter 40mm [1.57in.]

Pressure indication range

1 — Standard specification 1MPa [145psi.]

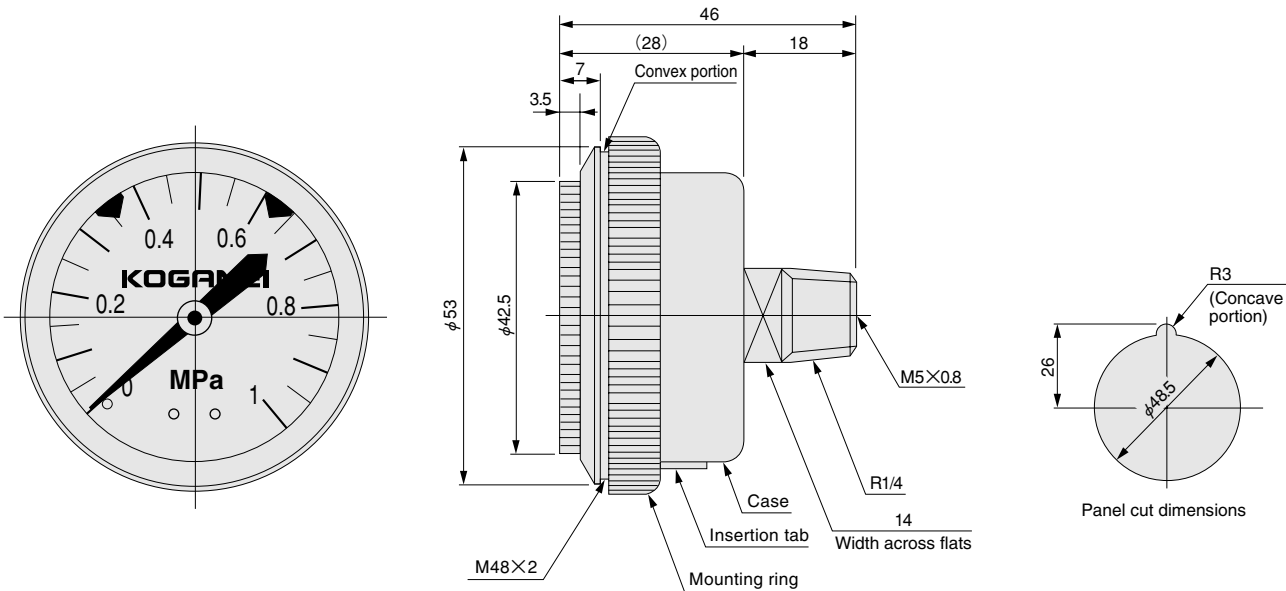
3 — Low pressure specification 0.3MPa [44psi.]

Panel mounting pressure gauge

Note: Panel mounting pressure gauges are supplied with quick fittings.
(φ 4 straight type and elbow type) .

※ For handling instructions and precautions, see p.176.

Dimensions of Panel Mounting Pressure Gauges (mm)



SMALL PRECISION PRESSURE GAUGES

G3P-40, GP3P-40

- Compact, yet assures full scale pressure indication accuracy of $\pm 1\%$.
- Can also be used as a panel mounting pressure gauge.
- Mechanical operating life of 200,000 full scale (FS) operations (with built-in throttle valve).

Symbol



Specifications

Item	Model	G3P-40	GP3P-40
Media		Air	
Operation type		Bourdon tube	
Port size		R1/4 (M5×0.8)	
Pressure indication range MPa [psi.]		0 ~ 0.3 [0 ~ 44]	
Maximum operating pressure MPa [psi.]		0.25 [36]	
Operating temperature range °C [°F]		-5 ~ 60 [23 ~ 140]	
Pressure indication accuracy		F.S. $\pm 1\%$ (0.003MPa [0.44psi.])	
Minimum measurement unit		0.005MPa [0.7psi.]	
Guaranteed temperature accuracy range		25 \pm 5°C [77 \pm 9°F]	
Temperature coefficient		0.05% F.S./°C	
Shock resistance m/s ² [ft./sec. ²]		9.8 [32] max.	
Materials	Body (pressure gauge case)	SPCC	
	Case/mounting ring (panel mount assembly)	Plastic (ABS/POM)	
Mass	g [oz.]	90 [3.17]	106 [3.74]

Order Codes

G3P - 40 -

Blank — NO throttle valve
S — With throttle valve^{Note1}

Outer diameter
40 — Outer diameter 40mm [1.57in.] (Scale plate)

Small precision pressure gauge
 Pressure indication range 0.3MPa [44psi.]

GP3P - 40 -

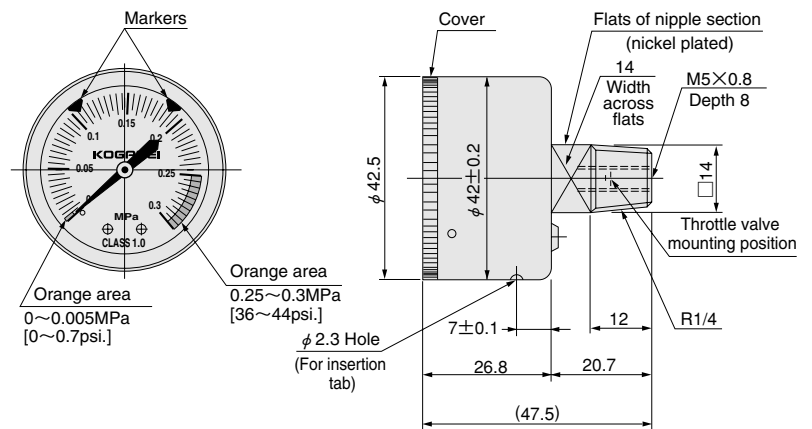
Blank — NO throttle valve
S — With throttle valve^{Note1}

Outer diameter
40 — Outer diameter 40mm [1.57in.] (Scale plate)

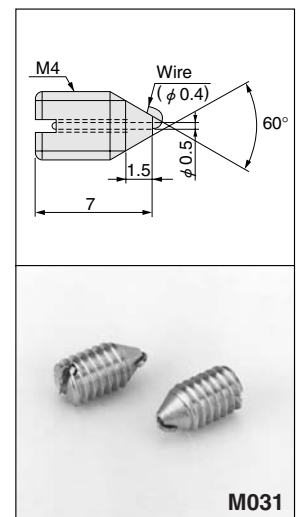
Small precision pressure gauge
 Panel mounting type^{Note2}
 Pressure indication range 0.3MPa [44psi.]

- Notes 1. Throttle valves are to be sold separately.
 2. Panel mounting type is supplied with quick fittings. (ϕ 4 straight type and elbow type).
 ※ For handling instructions and precautions, see p.176.
 ※ For the panel cut dimensions, see p.173.

Dimensions of Small Precision Pressure Gauges (mm)



Additional parts (To be ordered separately)



Throttle valve

VACUUM GAUGES

GV-40/GPV-40



Symbol



Specifications

Item	Model	GV-40-01	GV-40, GPV-40
Media		Air	
Pressure indication range kPa [in.Hg]		0 ~ 100 [0 ~ 29.54]	
Accuracy		F.S. ± 3%	
Operating temperature range °C [°F]		5 ~ 60 [41 ~ 140]	
Port size		R1/8 (female thread M5 × 0.8)	R1/4 (female thread M5 × 0.8)
Mass	kg [lb.]	0.08 [0.18]	0.09 [0.20]

Order Codes

GV — 40 — —

Non-ion specification

Blank — Standard specification

NCU — Non-ion specification

Port size

Blank — R1/4

01 — R1/8

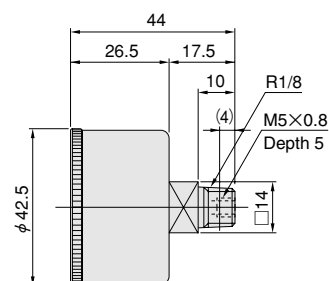
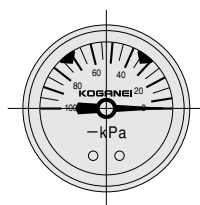
Outer diameter

40 — Outer diameter 40mm [1.57in.]

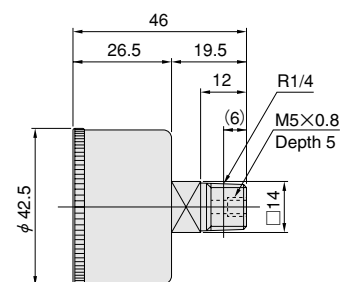
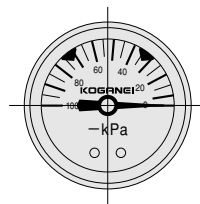
Vacuum gauge

Dimensions (mm)

GV-40-01



GV-40



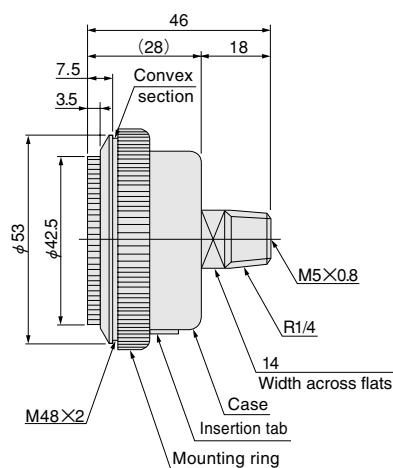
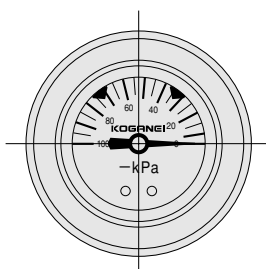
GPV — 40

Outer diameter

40 — Outer diameter 40mm [1.57in.]

Panel mounting vacuum gauge

GPV-40



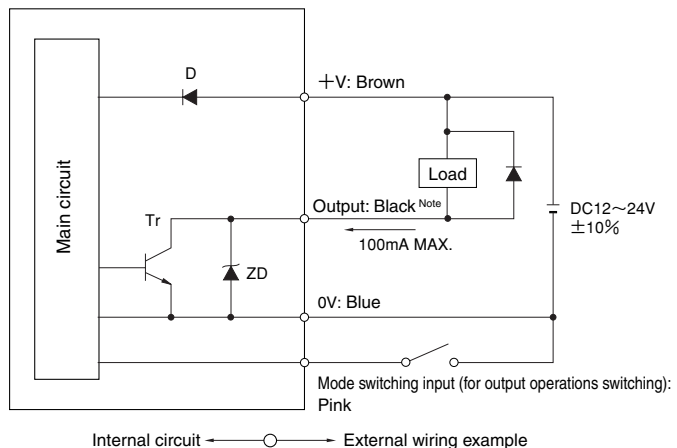
※ For handling instructions and precautions, see p.176.

※ For the panel cut dimensions, see p.173.

Handling Instructions and Precautions

● Pressure gauges with electronic switches

1 Input/output circuit diagram



2 Precautions

Power supply

- If using a commercial switching regulator for the power supply, always ground it with a frame ground (F.G.) terminal.
- Avoid using the product while it is in a transitory state (about 0.5sec) immediately after the power supply has been switched on.
- For direct current power supply, always use an insulated transformer. Use of an autotransformer (single-winding transformer) could damage the product and the power supply.
- If surges appear in the power supply, connect a surge absorber to the source of the surge.

Input/output

- Use surge protection when connecting the inductive loads such as DC relays to the load.

Wiring

- Avoid wiring parallel to high voltage lines or power lines, or use in the same wiring conduits. Induction could cause erratic operation.
- Always shut off the power supply before performing wiring work.
- Keep wiring lengths as short as possible to avoid electric noise problems.

Environment

- When using equipment that could be sources of electric noise (such as switching regulators, inverter motors, etc.) around the sensor installation area, ground them with an equipment's frame ground (F.G.) terminal.
- Avoid use in steamy or dusty locations, or in locations that are directly subject to dripping water.
- The product cannot be used when the media or the ambient atmosphere contains any of the substances listed below.
Organic solvents, phosphate ester type hydraulic oil, sulphur dioxide, chlorine gas, or acids, etc.

Detection

- Do not put wires or other foreign objects inside the pressured area.
- This product is for use with non-corrosive gases. Be aware that it cannot be used with liquids or with corrosive gases.

Mounting

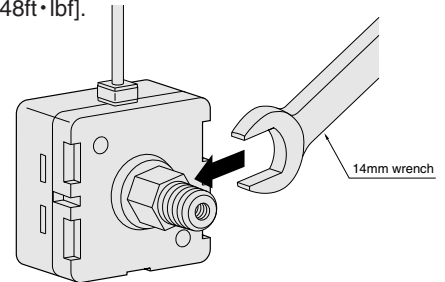
- Always thoroughly blow off (use compressed air) or air blowing the tubing before piping. Be careful to prevent chips, sealing tape, or rust, etc., generated during plumbing from entering into the pipes.
- When connecting a fitting to a piping connection port, mount by using a wrench on the hexagonal section of the port. The tightening torque for R1/4 (male thread) should be 20N·m [14.8ft·lbf] or less, and for M5×0.8 (female thread), 2.0N·m [1.48ft·lbf] or less.
- Never perform tightening on any other section.

Setting

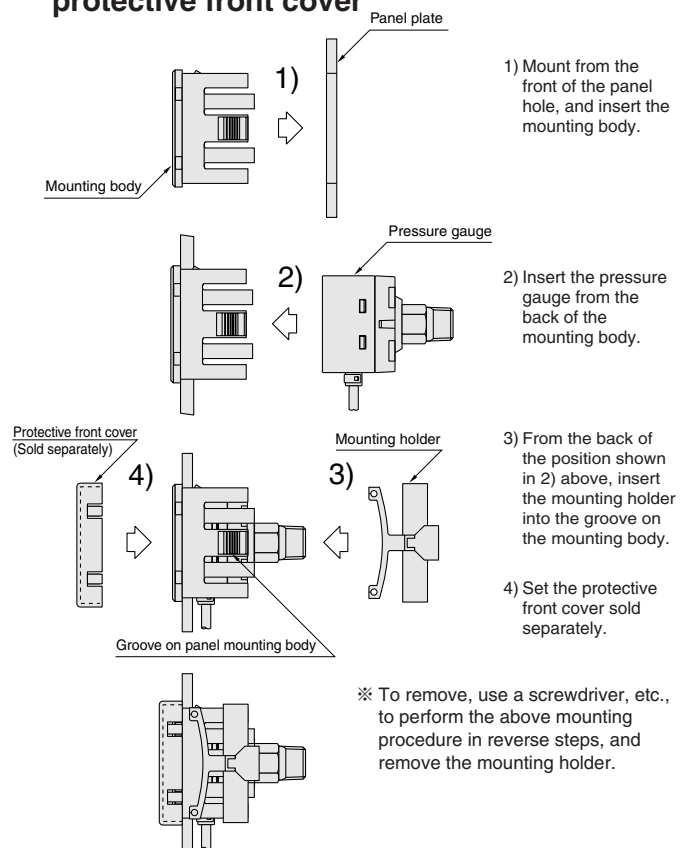
- Use a setting value that provides plenty of margin for the operating ambient temperature, power supply, voltage, and other conditions.

3 Body mounting

- As the mounting screws for the piping connection port are the R1/4 tapered thread or the M5 female thread, various commercial fittings can be used.
- For direct mounting on piping, use a 14mm wrench on the hexagonal section, do not exceed a torque value of 20N·m [14.8ft·lbf]. Do not use the wrench on the body case. When the M5 female thread is used, do not exceed a torque value of 2.0N·m [1.48ft·lbf].



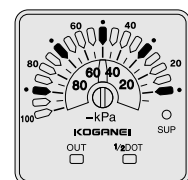
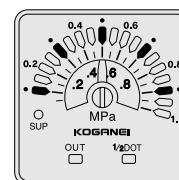
4 Mounting parts for panel mounting, and protective front cover



5 Error indication

〈Short-circuit error〉

- If the LED indicates as shown below, it means that over current is flowing to the load, and output has short-circuited. First, shut off the power supply, and then check the load and output.



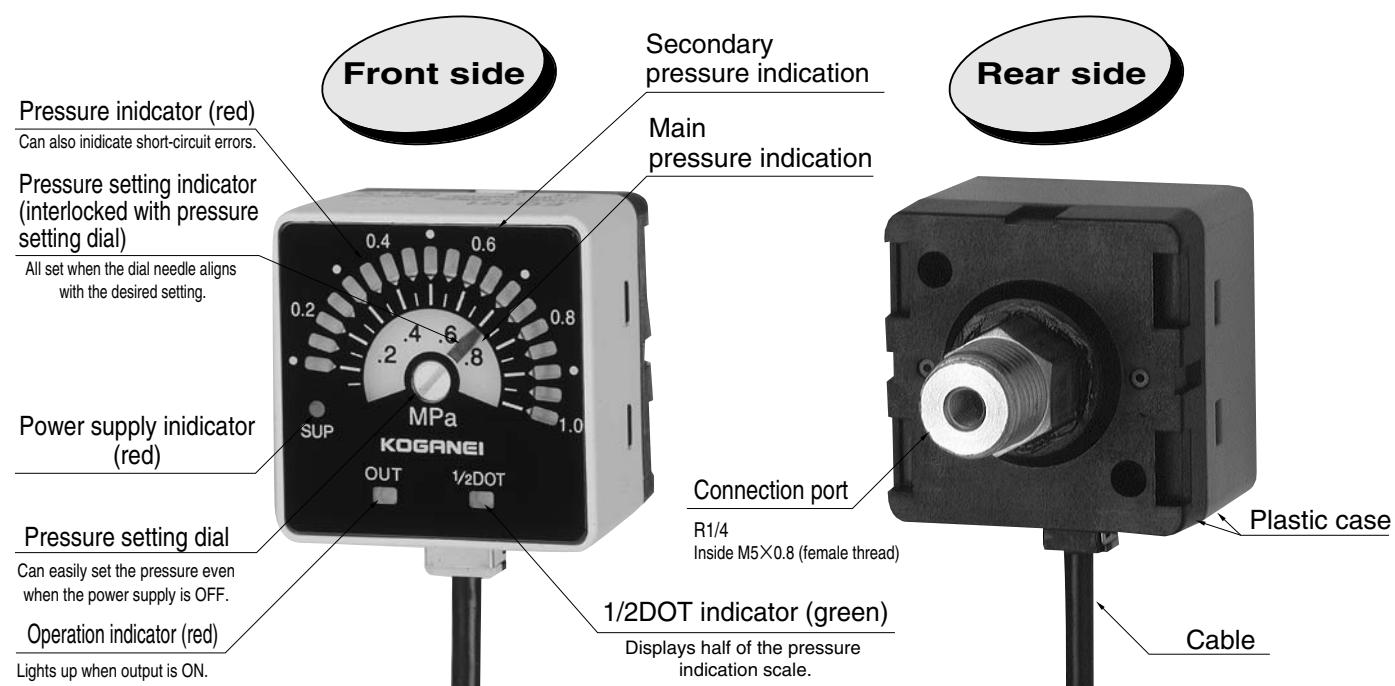
PRESSURE GAUGES WITH ELECTRONIC SWITCHES

EG110, EG120, EG121

Reliably measures the pulsating pressure in locations that the conventional Bourdon tube pressure gauge has always had difficulty with, and without worries about breakage.

The pressure gauge comes equipped with an LED analog indication using a semiconductor pressure transducer.

The electronic mode, without any mechanical moving parts, assures longer operating life, better reliability, and higher precision than the Bourdon tube pressure gauge.



Order Codes

EG1 - -

Pressure gauge with electronic switches

Operating pressure range
 10 : For vacuum 0~—101kPa [0~—14.6psi.]
 20 : For positive pressure 0~1MPa [0~145psi.]
 21 : For positive pressure 0~100kPa [0~14.5psi.]

Panel mounting parts
 Blank : No panel mounting parts
 P : With panel mounting parts

Protective front cover Note
 Blank : No protective front cover
 K : With protective front cover

Note: The protective front cover may be selected only when the panel mounting parts are selected. The protective front cover cannot by itself be mounted on the pressure gauge with electronic switches.

Additional parts (to be ordered separately)

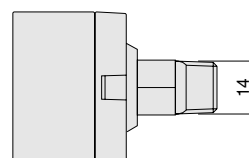


Specifications

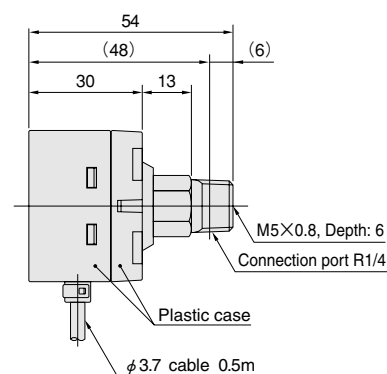
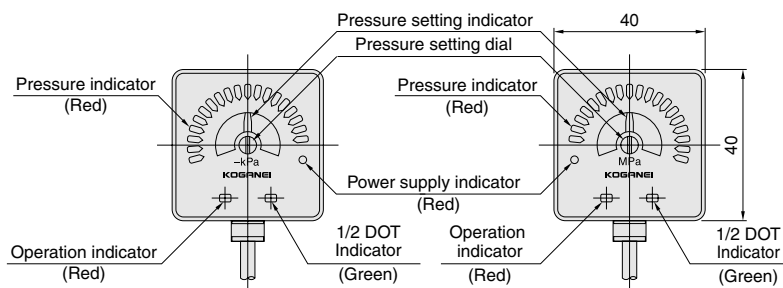
●Pressure gauges with electronic switches

Type Model		Vacuum	Positive pressure		
			100kPa type	1MPa type	
Item		EG110	EG121	EG120	
Rating	Rated pressure range	0~—101kPa [0~—14.6psi.]	0~100kPa [0~14.5psi.]	0~1.0MPa [0~145psi.]	
	Pressure setting range	—10~—90kPa [—1.5~—13.1psi.]	10~90kPa [1.5~13.1psi.]	0.1~0.9MPa [14.5~131psi.]	
	Indicator lamp	Pressure indicator	Red LED: Bar display Green LED: 1/2 dot display { indication: Positive pressure type→Clockwise rotation, Vacuum pressure type→Counterclockwise rotation } Indication cycle: 10ms or less		
		Operation indicator	Red LED (when output is ON, lights up)		
		Power supply indicator	Red LED (when power supply is ON, lights up)		
	Proof pressure	490kPa [71psi.]		1.47MPa [213psi.]	
	Applicable media	Air or non-corrosive gas			
	Voltage	DC12~24V±10%, ripple tolerance P-P ±10% or less			
	Consumption current	40mA or less			
	Output	NPN transistor open collector (equipped with short-circuit protection function) ●Maximum inrush current 100mA ●Applied voltage DC30V max. ●Residual voltage 1V max. (inrush current 100mA) / 0.4V max. (inrush current 16mA)			
Performance	Output operation NO, NC (selectable by using the mode switching input line)				
	Pressure sensitive element	Semiconductor type			
	Power supply voltage fluctuation	±1% F.S. or less			
	Non-linearity	±2% F.S. or less			
	Hysteresis	5% F.S.			
	Repeatability	±1% F.S. or less			
	Temperature characteristics	±5% F.S. or less (at temperature range of 0~50°C [32~122°F], as reference point 25°C [77°F])			
	Setting indicator accuracy	±2.5% F.S. or less (at median value)			
	Response time	10ms or less			
	Operating ambient temperature	0~50°C [32~122°F], In storage : —10~60°C [14~140°F] (without condensation or freezing)			
Environment	Operating ambient humidity	35~85% RH			
	Protective structure	IP40 (IEC144)			
	Vibration resistance	10~150Hz (total amplitude 0.75mm [0.03in.]), 2 hours in each of the XYZ directions (de-energized)			
	Shock resistance	98m/s² [10G], 3 times in each of the XYZ directions (de-energized)			
	Dielectric strength	AC1000V one minute (between charging part and case)			
	Insulation resistance	20MΩ or more (at DC500V megger)			
	Noise resistance	●Power supply line 240V or more ●Radiation 300V or more (in a pulse width 0.5μs by noise simulator)			
	Grounding method	Floating			
	Port size	R1/4, with M5×0.8 female thread inside			
	Front case, rear case	PBT			
Structure/ Materials	Front name plate	PC			
	Connection port	Brass (nickel plated)			
	Cable	0.18SQ, 4-lead, Cabtyre cable ϕ 3.7 [0.146in.], 0.5m [1.6ft.]			
	Mass	85g [3.0oz.]			

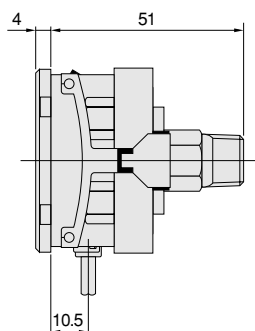
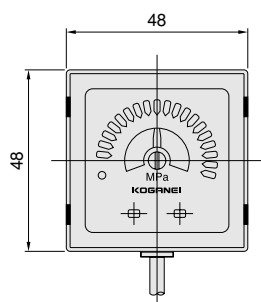
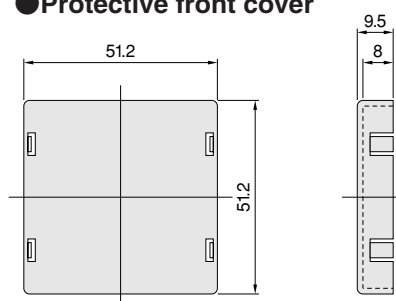
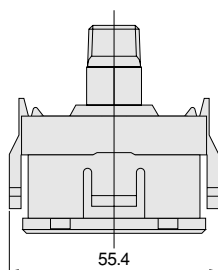
●EG1□-□



- **EG120, EG121 front display**



● **Protective front cover**



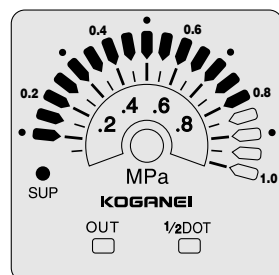
- Notes: 1. The mounting plate thickness should be 1 to 3.2mm.
2. The cut panel dimensions are $45^{+0.6}_{-0} \times 45^{+0.6}_{-0}$ mm.
3. If mounting in a series, space the units at intervals of the value shown in the figure above or greater.
4. Conformity **DIN43700**

Operating Pressure Settings

1) Pressure indication: The red LED bar indication has a lower resolution that is easy to read. In addition, the green LED “1/2DOT” offers pressure indication at higher resolution.

● (Example) EG120

Indicated pressure: 0.8MPa



0.825MPa



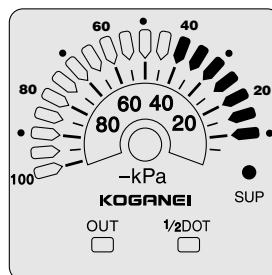
Green LED lights up

0.85MPa

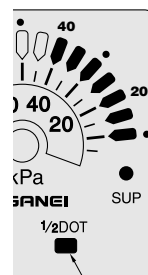


● (Example) EG110

Indicated pressure: -40kPa



-42.5kPa



Green LED lights up

-45kPa

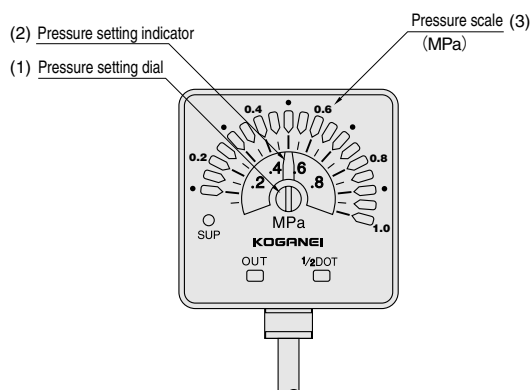


PRESSURE GAUGES

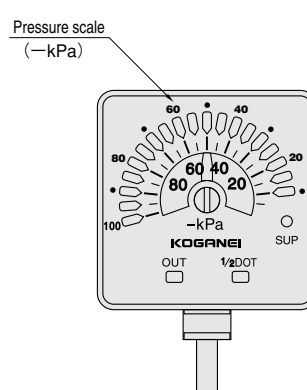
2) Pressure setting: The pressure setting uses (1) the pressure setting dial to move (2) the pressure setting indicator to align to (3) pressure scale.

〈Operation parts〉

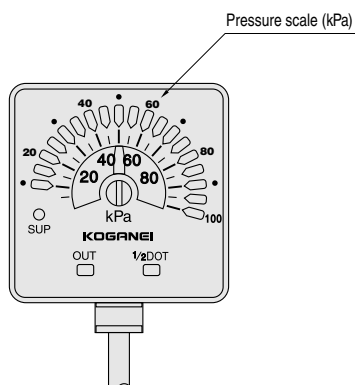
●EG120



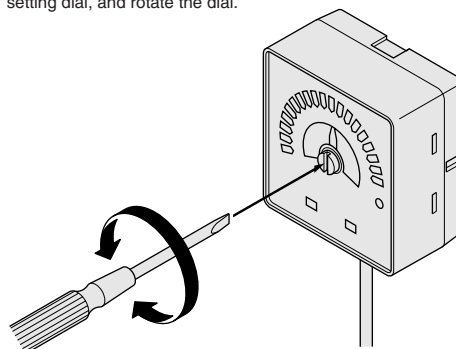
●EG110



●EG121

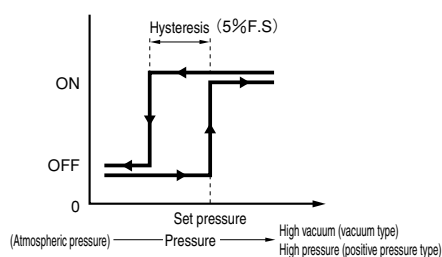


To set the pressure, insert a small screwdriver into the pressure setting dial, and rotate the dial.

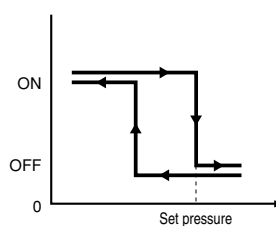


3) Output operation

NO type



NC type



※ To switch the output operation, change the mode switching input line.

(Status for mode switching input line) Open : NO type
GND connection : NC type

Handling Instructions and Precautions



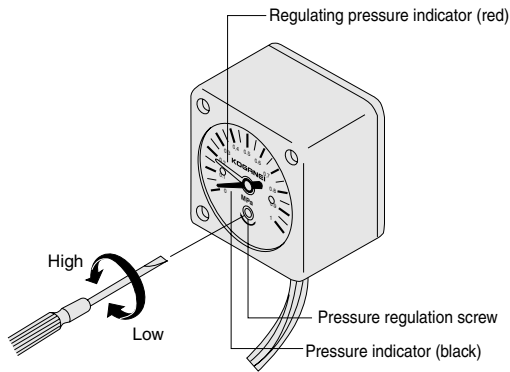
Pressure gauges with built-in switch

Mounting and piping

1. While any mounting direction is acceptable, install a throttle mechanism in cases where pressure pulsation is particularly severe, such as when mounted between a valve and an actuator. For mounting in locations subject to strong vibrations, consult us.
2. During mounting and piping operations, do not grab the pressure gauge body to tighten. For tightening, always use a hexagonal wrench on the piping connection port section.

Pressure regulation

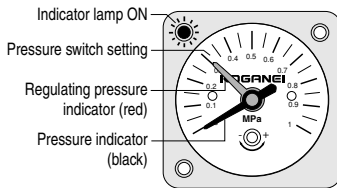
Rotate the pressure regulation screw, align the regulating pressure indicator (red) to the set pressure, and set. Rotating the pressure regulation screw to the left (counterclockwise) sets to a higher pressure, and rotating it to the right (clockwise) sets to a lower pressure. When the air pressure rises to the set pressure, the switch is activated, and when it falls to the setting pressure of 0.05MPa [7psi.], the switch is returned to the original state.



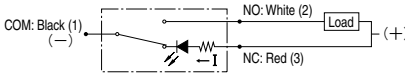
- Cautions:**
1. To regulate the pressure, do not remove the cap on the lens surface, but insert a small screwdriver into a slit in the cap instead, and directly rotate the pressure regulation screw.
 2. The pressure needle has a indication error of 0.05MPa [7psi.]. For fine-tuning adjustment, apply compressed air at the set pressure to check the switch triggering action.

Switch setting method and operations

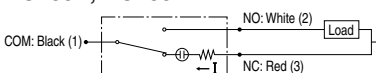
Setting example: Want the switch to activate when the pressure is at 0.3MPa or less.



●DC24V



●AC100V, AC200V



Set the regulating pressure indicator (red needle) to 0.3MPa [44psi.]. But because the regulating pressure indicator has a maximum error of 0.05MPa [7psi.], always apply compressed air regardless of the position the needle is pointing to on the indication scale, adjust the pressure, and use a multimeter, etc., to check whether the built-in switch goes to OFF when the pressure drops to 0.3MPa [44psi.] or below.

When the pressure is in the range of 0MPa~0.3MPa [0~44psi.], the built-in switch remains at NC, as shown in the circuit diagram above, and the indicator lamp lights up.

When the pressure rises, and the regulating pressure indicator (red needle) exceeds 0.3MPa [44psi.], the built-in switch flips to NO, as shown in the circuit diagram above, the load current flows, and the indicator lamp goes out.

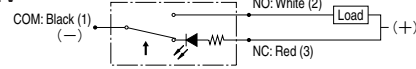
General precautions

1. Use this product to check the supply pressure. For use in precision control circuits, consult us.
2. Switch performance may be degraded in installation locations where the temperature is higher than 45°C [113°F] or where the humidity is constantly 50% or less. For use in these kinds of places, consult us.

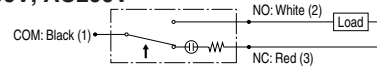
Wiring instructions

Pay attention to the NC and NO contacts and the colors of lead wire (in wires with connectors, the terminal numbers) for wiring. In the figure below, the numbers in parentheses () represent the terminal numbers, while the arrow ↑ shows the direction of rising pressure. The indicator lamp switches off when the value is at the set pressure or higher, and lights up as a warning when the value falls below the set pressure.

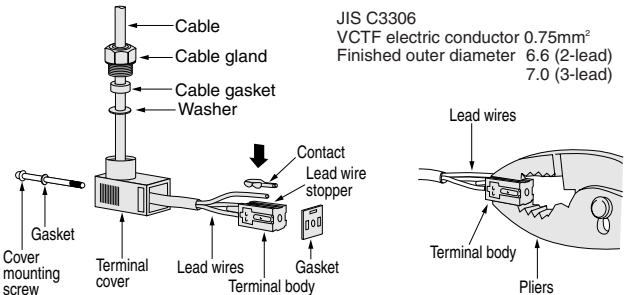
●DC24V



●AC100V, AC200V

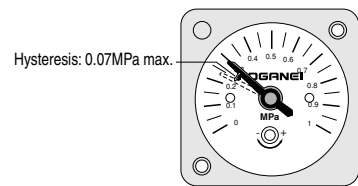


Wiring instructions with DIN connector



When peeling off the sheath (for cabtyre sheath only), pay attention to the lead wire bending direction. Setting the outer lead wires inside the terminal cover to be about 8mm longer than the inner wires can make it easier to mount the terminal body onto the terminal cover. Without peeling off their insulations, insert the lead wires into the terminal body until they bump up against the lead wire stopper, lower the contacts from above to exposed wires, and use pliers to push them into firm contact, so that the contacts are touching the exposed wires.

Caution: For the connector type, the connector wiring position at time of delivery is in the connecting thread side (back side).



When the pressure falls, and the pressure indicator (black needle) is higher than the regulating pressure indicator (red needle), the internal switch changes to NC with a maximum hysteresis of 0.07MPa [10psi.]. At this time, the repeatability is a maximum ± 0.03 MPa [± 4 psi.].

Note that NC cannot be used as a load contact. Use the switching of NO to OFF to control the relay or other B contact.

To obtain finer accuracy than the above example, we recommend using:

- Digital pressure gauge with built-in sensor
- Digital pressure switches

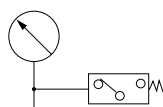
PRESSURE GAUGES WITH BUILT-IN SWITCH

GS1-50

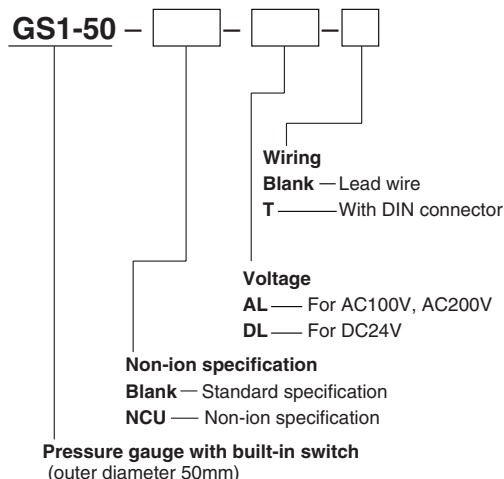


- The set pressure and operating pressure are indicated on the same pressure gauge. Panel mounting offers convenient centralized control and management built into the control panel.
- An indicator is standard equipment, to check the switch operation state. Wiring connection methods offered include a standard grommet (lead wire) type, and a DIN connector type as an option.

Symbol



Order Codes



Remark: A model with built-in contact protection circuit (external surge absorption element) is available. For details, consult us.

Specifications

Item		Model	GS1-50
Media			Air
Maximum operating pressure		MPa [psi.]	0.83 [120]
Pressure gauge specifications	Operating temperature range (atmosphere and media)	°C [°F]	5~60 [41~140]
	Pressure indicator range	MPa [psi.]	0~1.0 [0~145]
	Indicator accuracy		F.S.±3%
Switch specifications	Pressure adjusting range	MPa [psi.]	0.1~0.83 [14~120]
	Regulating pressure indication error ^{Notes 1 and 3}	MPa [psi.]	±0.05 [±7]
	Repeatability ^{Note 3}	MPa [psi.]	±0.05 [7] (5~45°C [41~113°F])
	Hysteresis	MPa [psi.]	0.07 [10] max.
	Contact type		Micro switch a contact (NO)
Wiring	Standard		Lead wire length : About 500mm [19.7in.] ^{Note 2}
	Option		DIN connector
Indicator			Standard equipment: LED for DC, neon lamp for AC
Shock resistance		m/s ² [G]	9.8 [1]
Mounting direction			Any
Mass		kg [oz.]	0.17 [6.0] (0.19 [6.7] with DIN connector)
Materials	Body		Aluminum die-casting
	Case		SPCC
	Flats of nipple section		Brass
	Bourdon tube		Brass

Notes: 1. Shows when the pressure is rising.
 2. Made to order is available at -1L: 1000, -2L: 2000, -3L: 3000mm.
 3. Regulating pressure indicator errors and repeatability errors could be accumulated. (Maximum ±0.1MPa [±14.5psi.]). Be aware of this during use.

Operating Current Range

Rated voltage		DC30V	AC125V	AC250V
Operating current range				
Inductive load	Continuous	0.05~0.1	0.01~0.1	0.01~0.05
	Inrush	0.5 MAX.	0.5 MAX.	0.2 MAX.
Non-inductive load		0.01~0.5	0.01~0.3	0.01~0.2

Dimensions (mm)

GS1-50

