

GK__ Small Pressure Gauge

Overview

This small pressure gauge is mainly used for pneumatic pressure measurement contributes for the miniaturization of installing device. Eccentric pressure gauge with vibration resistance, glycerin filled pressure gauge and corrosion resistive SUS-made pressure gauge are available depending upon applications.

Features

- Small and lightweight pressure gauge can be installed into limited space.
- Small and lightweight but easy pressure reading.



*To maximize performance, select full scale pressure range to indicate normal operating pressure which comes to conditions below.

For constant pressure : The maximum operating pressure should not exceed three-quarters of the full-scale range.

For fluctuating pressure: The maximum operating pressure should not exceed two-thirds of the full-scale range.

Select appropriate wetted parts compatible with process fluid (gas and liquid) which the gauge will be subjected.

Please refer to JIS B 7505-1 for details.

Specifications

Media:

Gases and liquids (Non-corrosive)

Operating environment:

Install in location where no corrosive gases or liquids may exist under normal operating condition

Class:

Class A or Class B

Class A features better accuracy used in application mainly for pneumatic pressure measurement.

Class B is widely used for pneumatic pressure measurement.

Size:

φ 40, φ 50

Mounting:

Stem ...  Type A

Panel ...  Type D

Connection:

φ 40 R1/8

φ 50 R1/4

※Consult us for nonstandard connection.

Wetted parts:

Bourdon tube C6872T

Socket C3604BD

Window:

Class A Inorganic

Class B Organic

Pressure range:

0 to 0.1MPa→0 to 3.5MPa (Depending on range)

Accuracy:

±1.5%F.S., ±2.0%F.S., ±3.0%F.S.
(Depending on range)

Operating temperature range:

-5 to 45°C (Non-freezing or condensing)

Dial scale angle:

Class A φ 40 180°

Class A φ 50, Class B φ 40, φ 50 270°

Case finish:

Class A Cr-plated

Class B Non-polished SUS304

Weight:

Class A φ 40 Approx. 75g

Class A φ 50 Approx. 165g

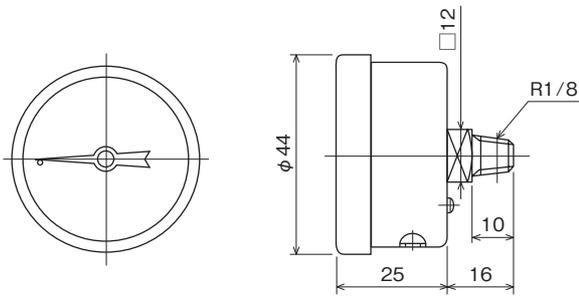
Class B φ 40 Approx. 60g

Class B φ 50 Approx. 95g

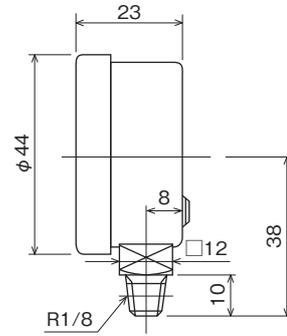
Dimensions

Unit: mm

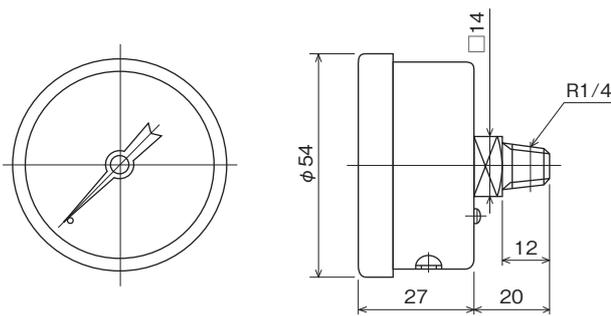
Class A



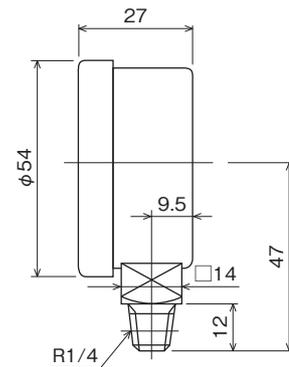
GK68-161



GK10-161

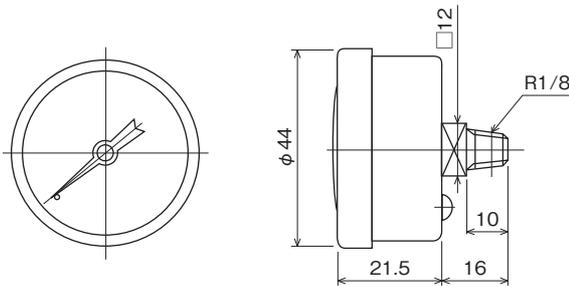


GK69-171

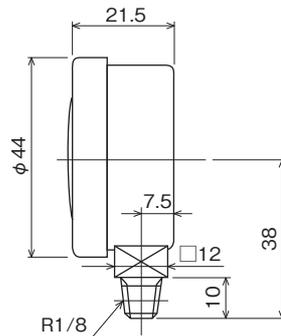


GK10-271

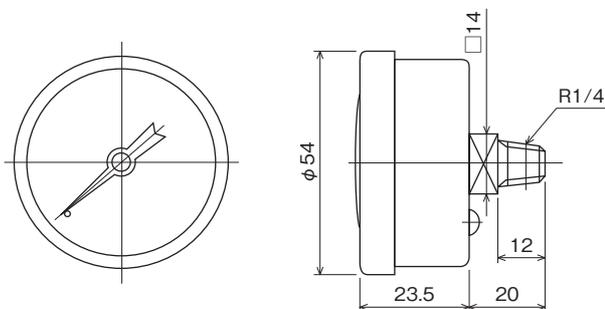
Class B



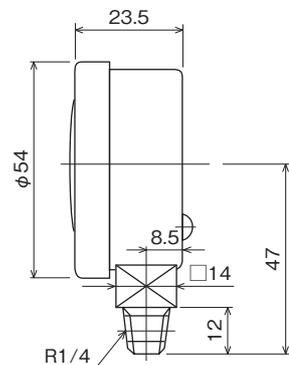
GK25-161



GK20-161



GK25-271

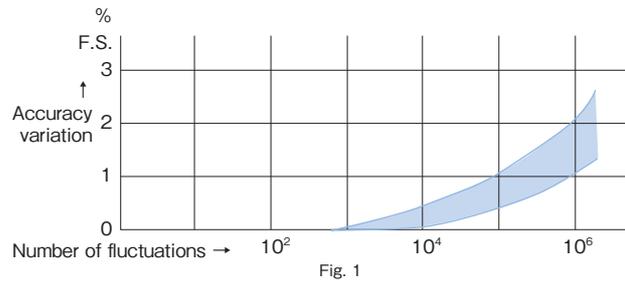


GK20-271

Characteristics

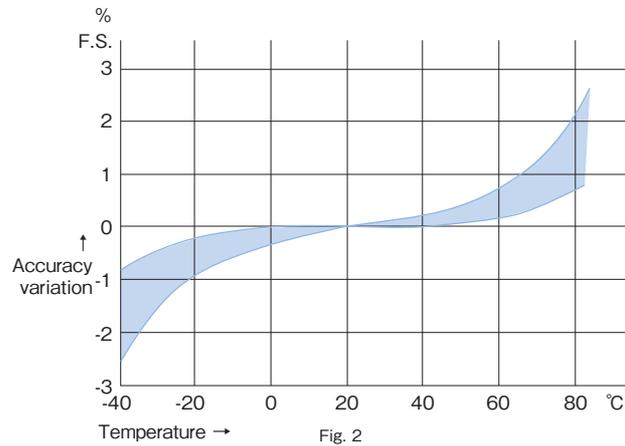
Durability

Pressure gauge life varies depending up on its operating environment the gauge would be subjected (pulsation, surge pressure, vibration, temperature and others). As an example, pressure indication becomes inaccurate as shown in right diagram where constant cycle of pulsation with sine wave within 20 to 80% of rated range is present. (Fig.1)



Temperature characteristic

Small pressure gauge demonstrate a precision change in accuracy from $\pm 0.5\%$ to $\pm 2.0\%$ F.S. at $20^{\circ}\text{C} \pm 60^{\circ}\text{C}$ according to the comprehensive changes including the elastic coefficient change of bourdon tube due to ambient temperature change and the expansion rate change due to part thermal expansion stemmed from ambient temperature. (Fig.2)



Vibration resistance

Although small pressure gauge has an advantage in its miniaturized components to fight against vibration, the components and element should be high-performable. To maintain allowable accuracy boundary, not only avoiding resonance of pressure gauge but use in vibration circumstance itself should be avoided as much as possible.

Note) Above data is not assured the performance of pressure gauge.

Maintenance for small pressure gauge

This JIS compliant small pressure gauge should follow the instruction for the use below

- ① Avoid applying mechanical vibration or pulsation toward pressure gauge.
- ② Install pressure gauge in location where ambient temperature range is within -5 to 45°C .
Consider the use of protective cover when used under the exposure to direct sunlight which could easily rise the temperature.
Avoid freezing of pressure media in winter.
- ③ Corrosive atmosphere or corrosive process media must be avoided.
- ④ Take shelter from the rain or dew.
- ⑤ Make sure to perform annual inspection or periodically according to important level.

Other pressure gauges

(Vibration resistant type)

Eccentric pressure gauge (GK90):

Displacement enlarging mechanism consists of gear is not used so that no wear caused by mechanical and pulsation factor are occurred.



Media: Gases and liquids (Non-corrosive)

Size: $\phi 40$, $\phi 50$

Mounting: Stem ...  type A

Connection: R1/8, R1/4

Wetted parts: Socket C3604BD
Bourdon tube C6872T

Window: Inorganic

Pressure range

(Minimum scale graduation): 0 to 1.5MPa (0.1MPa)
0 to 2MPa (0.1MPa)
0 to 3.5MPa (0.2MPa)

Accuracy: $\pm 5\%$ F.S.

Dial scale angle: 60°

Case material • finish: SUS304 • Not polished

Weight: Approx. 100g

(Corrosion resistant type)

SUS made pressure gauge (GK33 • 38):

Pressure gauge with stainless-made wetter parts and case are corrosion resistive with good environmental resistance.



Media: Gases and liquids

Size: $\phi 50$

Type: Stem  Type A
(Model: GK33)
Panel  Type D
(Model: GK38)

Connection: R1/8, R1/4

Wetted parts: Connection (Model: GK33) SUS316
(Model: GK38) SCS14
Bourdon tube SUS316

Window: Organic
(Inorganic window optionally available)

Pressure range: 0 to 0.1 → 0 to 25MPa

Accuracy: $\pm 3\%$ F.S.

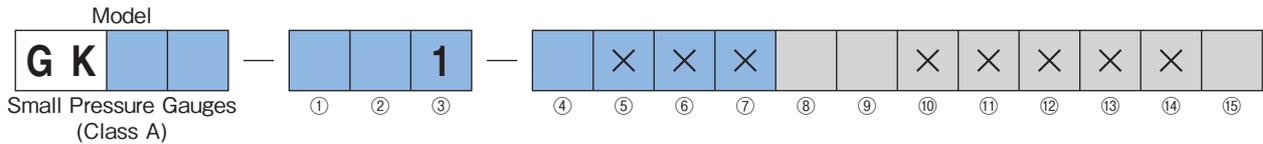
Dial scale angle: 270° (180° for 0.1MPa)

Case material • finish: SUS304 • Not polished

Weight: Approx. 100g

Model number configuration

Please specify the model number, each specs and the range for ordering.



Model number						Product specifications				Additional specifications (Optional)			
Model			①	②	③	Size	Type	Connection	Pressure range (MPa)	Accuracy	Dial scale angle	Case finish	
6	8	—	1	6	1	φ40	D	R1/8	0.2, 0.4, 0.7, 1	±2%	180°	Cr-plated	
1	0	—	1	6	1	φ40	A	R1/8	0.2, 0.4, 0.7, 1	±2%	180°		
6	9	—	1	7	1	φ50	D	R1/4	0.2, 0.4, 0.7, 1, 1.5, 2, 2.5, 3.5	±1.5%	270°		
1	0	—	2	7	1	φ50	A	R1/4	0.2, 0.4, 0.7, 1, 1.5, 2, 2.5, 3.5	±1.5%	270°		

Please specify pressure range and unit of measure along with corresponding ordering code.

④ Pressure range (MPa)	1	0 to 0.2, 0.4, 0.7, 1	φ40 only
	2	0 to 0.2, 0.4, 0.7, 1, 1.5	φ50 only
	3	0 to 2, 2.5, 3.5	φ50 only

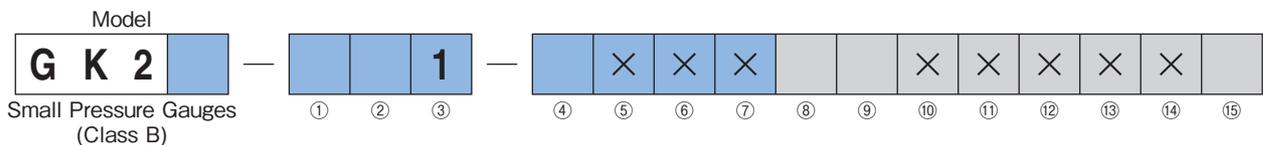
⑧ Treatment	0	Not required
	1	Use no oil
	2	Use no water
	3	Use no oil and water

⑨ Other additional spec.	0	Not required
	1	Required (Specify required additional spec below.) Ni-plated for wetted parts Case finish (Black) NPT thread Customized dial [Note 1]

⑮ Documents	0	Not required
	1	Required (Documents available upon request) Datasheet (Drawing / Specifications) Instruction manual Inspection procedure Attending inspection

[Scope of manufacturing]
[Note 1] Customized dial: Custom letters, customer's logo, red line and red painted dial.

* Specify code "X" to refer N/A



Model number						Product specifications				Additional specifications (Optional)			
Model			①	②	③	Size	Type	Connection	Pressure range (MPa)	Accuracy	Dial scale angle	Case finish	
5	—	—	1	6	1	φ40	D	R1/8	0.1, 0.2, 0.4, 0.7, 1	±3%F.S.	270°	Non-polished SUS304	
0	—	—	1	6	1	φ40	A	R1/8	0.1, 0.2, 0.4, 0.7, 1				
5	—	—	2	7	1	φ50	D	R1/4	0.1, 0.2, 0.4, 0.7, 1, 2, 2.5, 3.5				
0	—	—	2	7	1	φ50	A	R1/4	0.1, 0.2, 0.4, 0.7, 1, 2, 2.5, 3.5				

Please specify pressure range and unit of measure along with corresponding ordering code.

④ Pressure range (MPa)	1	0 to 0.1
	2	0 to 0.2, 0.4, 0.7, 1
	3	0 to 2, 2.5, 3.5

⑧ Treatment	0	Not required
	1	Use no oil
	2	Use no water
	3	Use no oil and water

⑨ Other additional spec.	0	Not required
	1	Required (Specify required additional spec below.) Ni-plated for wetted parts Case finish (Black) NPT thread Customized dial [Note 1]

⑮ Documents	0	Not required
	1	Required (Documents available upon request) Datasheet (Drawing / Specifications) Instruction manual Inspection procedure Attending inspection

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* Specify code "X" to refer N/A