

JK2_

Pressure Gauges with Optical Switch

Overview

This optical pressure gauge used for alarm system secures large-capacity switch (Open and close) action ability through relay. Pressure gauge with optical switch action utilizing incorporated photomicro sensor with one pair of light emitting element and light receiving element are positioned on the same optical axis. Operation is done by blocking and passing light (ON·OFF) between emitting element and receiving element due to object (Douser) passing through the way.

Features

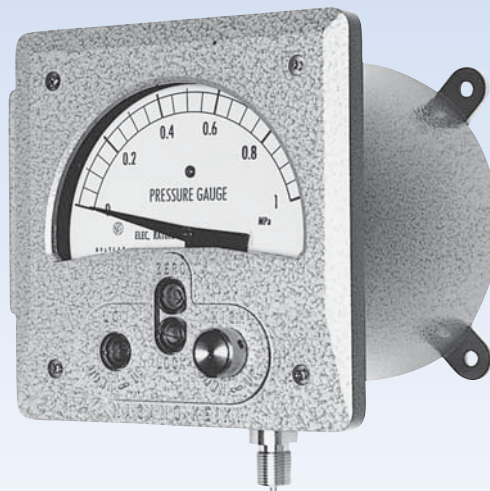
- Narrow deadband by adapting noncontact switch
- Switch operating point can be set arbitrary within full scale range. Easy setting is possible by external dial located at front side.
- Zero adjustment is possible by removing plug located at front side.

*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 1

Media:

Gases, liquids (Only with bourdon tube)

Operating environment:

Install in location where no gases or liquids may exist that have the potential to become flammable or ignitable under normal operating condition

Type:

Wall mounting, panel mounting

Pressure sensing element:

Bourdon tube, bellows (40kPa and below)

Size:

□160

Connection:

G3/8, G1/2B

*Conversion joint is attached to accommodate nonstandard connection requirement.

Wetted parts:

General type

Socket C3604BD

Bourdon tube C6872T Bellows C5212R

*Available up to 35MPa

Corrosion resistant type

Socket SUS316

Bourdon tube SUS316 Bellows SUS316L

Pressure range:

20 to 100kPa (Receiver)

0 to 3kPa → 0 to 70MPa

-0.1 to 0 → -0.1 to 2MPa

*Pressure sensing element is bellows for 0 to 40kPa and below.

Operating temperature range:

-5 to 40°C (Non-freezing)

Indication accuracy:

±1.5%F.S. (±1%F.S. for receiver range)

Setting accuracy:

±2%F.S.

Repeatability:

±0.5%F.S.

Deadband:

2%F.S.

Switch:

Photomicro Sensor

Number of contacts:

One or two contacts

Setting method:

Externally adjustable

Dial scale angle:

150°

Electrical wire outlet:

Gland JIS 20b (Terminal 8P)

Auxiliary power:

100V/110V AC or 200V/220V AC

Case material · finish:

ADC12 · Winkle paint

Enclosure rating:

Drip-proof (IP43)

Weight:

Approx. 2.5kg

Specifications 2

Electrical characteristic:

Switch rating

Description	Load	Resistance load ($\cos \phi = 1$)	Inductive load ($\cos \phi = 0.4, L/R = 7\text{ms}$)
Rated load		100V AC 1A 24V DC 1A	100V AC 0.5A 24V DC 0.5A
Minimum rated load		5V DC 1mA	

Maximum switch action voltage and current: 220V AC 3A
(Resistance load) 30V DC 2A

Withstand voltage

1500V AC Between terminal and case 1 minute

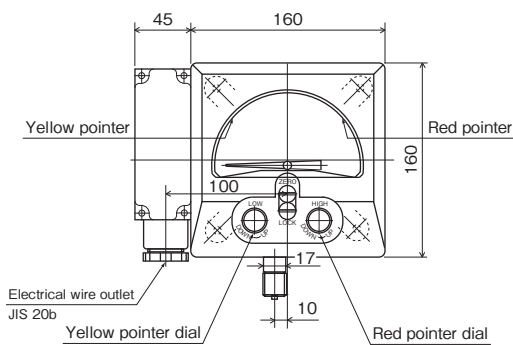
Insulation resistance

500V DC 100M Ω and below Between terminal and case

Dimensions

Unit: mm

Wall mounting

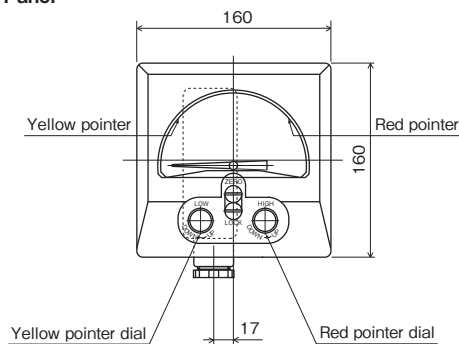


4 × $\phi 5.5$ Hole
P.C.D.165

Mounting hole
dimension

d	h	f
G $\frac{3}{8}$ B	113	18
G $\frac{1}{2}$ B	115	20

Panel



4 × $\phi 5.5$ Hole
P.C.D.165

Panel mounting
dimension

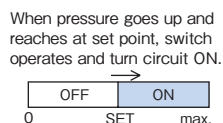
d	h	f
G $\frac{3}{8}$ B	47	18
G $\frac{1}{2}$ B	49	20

Switch action · Wiring

1. Upper limit with one contact (H)

Wire ③ to ④ Red pointer

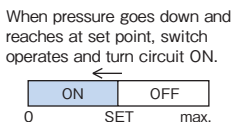
ON · OFF switch action is reversed when ③ to ⑤ is wired.



2. Lower limit with one contact (L)

Wire ③ to ④ Yellow pointer

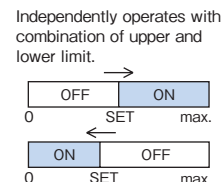
ON · OFF switch action is reversed when ⑥~⑦ is wired.



3. Upper and lower limit with two contacts (HL)

Wire ③ to ④ Red pointer

Wire ⑥ to ⑧ Yellow pointer

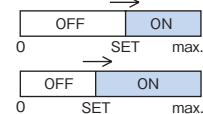


4. Upper limit with two contacts (2H)

Wire ③ to ④ Red pointer

Wire ⑥ to ⑦ Yellow pointer

Independently operates with combination of two upper limits.

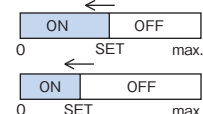


5. Lower limit with two contacts (2L)

Wire ③ to ⑤ Red pointer

Wire ⑥ to ⑧ Yellow pointer

Independently operates with combination of two lower limits.



* ① to ② is for power input terminal

Note) Yellow (Red) pointer can't be set higher (lower) than red (yellow) pointer.

Model number configuration

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

Model

J K 2 — — — — — 0 7 — — — — — × × × × ×

Pressure Gauges with Optical Switch ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮

Model number		Product specifications		Additional specifications (Optional)		
Type	0	Wall mounting				
	5	Panel mounting				
① Number of contacts	1	One contact				
	2	Two contacts				
② Connection	3	G3/8B				
	4	G1/2B				
		Others				
③ Wetted parts	1	General type				
	3	Corrosion resistant type				
④ Pressure range (MPa)	1	0 to 3, 4kPa				
	2	0 to 5, 7, 10kPa				
	3	0 to 15, 20, 30, 40kPa				
	4	20 to 100kPa (Receiver)				
	5	-0.1 to 0.1, 0.2, 0.3, 0.4, 0.6, 1, 1.5, 2 Compound range				
	6	0 to 0.05, 0.07, 0.1, 0.2, 0.3, 0.4, 0.6, 1, 1.5, 2, 2.5, 3.5, -0.1 to 0				
	7	0 to 5, 7, 10				
	8	0 to 15, 25, 35				
	9	0 to 50, 70 Corrosion resistant type only				
⑤ Switch action	A	H : Upper limit with one contact				
	B	L : Lower limit with one contact				
	C	HL : Upper and lower limit with two contacts				
⑥ Switch type	0	Standard (Photomicro sensor)				
⑦ Electrical wire outlet	7	Gland JIS 20b (Terminal 8P)				
		Others				
⑧ Auxiliary power	2	100V AC				
	3	110V AC				
	4	200V AC				
	5	220V AC				
⑨ Treatment	0	Not required				
	1	Use no oil				
	2	Use no water				
	3	Use no oil & water				
⑮ Documents	0	Not required				
	1	Required (Documents available upon request) Datasheet (Drawing / Specifications) Instruction manual Inspection procedure Mill test report Calibration test report (One-part one sheet) Inspection / Traceability certificate Attending inspection				

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

[Scope of manufacturing]

- Indication accuracy: $\pm 1.5\%$ F.S.
- Receiver : $\pm 1.0\%$ F.S.
- Setting accuracy : $\pm 2\%$ F.S.
- Dial scale angle : 150°
- Specify power supply if required
100V AC, 110V AC, 200V AC, 220V AC

○As setting scale on dial includes setting error, ensure the use of master gauge and reference pressure gauge to maintain accurate setting.

*Specify code "X" to refer N/A