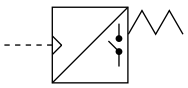
General Purpose Pressure Switch
Series ISG

ISG General Purpose Switch is widely used in machine tools, industrial machines, compressors, chemical plants, power plants, machineries for ships, and for automatic pressure control such as hydraulic, water, liquid and atmospheric pressure.

ISG190 **ISG130**

JIS Symbol



Model/Specifications

Model		Operating pressure range (MPa)	Hysteresis adjusting range (MPa)	Proof pressure (MPa)	Repeatability (MPa)	Body material in contact with fluid material	Hysteresis scale plate	Electrical entry
Open type (Non-waterproof)	Dripproof							
ISG110-030	ISG210-030	0.02 to 0.3	0.01 to 0.2	1.0	±0.006	Brass, Phosphor bronze	None	(Open type) Grommet
ISG110-031	ISG210-031					Brass, Phosphor bronze	Yes	
ISG111-030	ISG211-030					Stainless steel 316	None	
ISG111-031	ISG211-031					Stainless steel 316	Yes	
ISG120-030	ISG220-030	0.05 to 0.7	0.02 to 0.35	1.5	±0.014	Brass, Phosphor bronze	None	(Dripproof) JIS F 8801 Cable gland Type A
ISG120-031	ISG220-031		0.02 to 0.45			Brass, Phosphor bronze	Yes	
ISG121-030	ISG221-030		0.02 to 0.35			Stainless steel 316	None	
ISG121-031	ISG221-031		0.02 to 0.45			Stainless steel 316	Yes	
ISG130-030	ISG230-030	0.1 to 1.0	0.03 to 0.4	1.5	±0.02	Brass, Phosphor bronze	None	20a
ISG130-031	ISG230-031		0.03 to 0.6			Brass, Phosphor bronze	Yes	20b*
ISG131-030	ISG231-030		0.03 to 0.4			Stainless steel 316	None	20c*
ISG131-031	ISG231-031		0.03 to 0.6			Stainless steel 316	Yes	
ISG190-030	ISG290-030	–10 to –100 kPa	7 to 53 kPa	0.5	±2 kPa	Brass, Phosphor bronze	None	
ISG191-030	ISG291-030					Stainless steel 316	None	

Ambient and fluid temp.: 5 to 80°C (No freezing), Contacts: 1a1b, 2ab (Made to Order), Port size: R 3/8, Weight: 1.3 kg (Open type), 1.5 kg (Dripproof)

* Option

Fluid

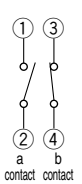
Type of operating fluid is limited by the material of wetted parts.

Fluid	Body material in contact with fluid material	
	Bellows	Fluid entering part
Non corrosive water/Air/Liquid/Inert gas	Phosphor bronze	Brass
Fluids which do not corrode stainless steel 316 e.g. steam (150°C or less)*	Stainless steel 316	Stainless steel 316

* Ambient temperature: 80°C or less.

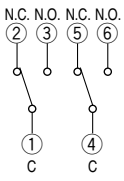
Contacts

1a1b Snap type (Standard)



When rising pressure
① – ② = **ON**
③ – ④ = **OFF**

2ab Snap type



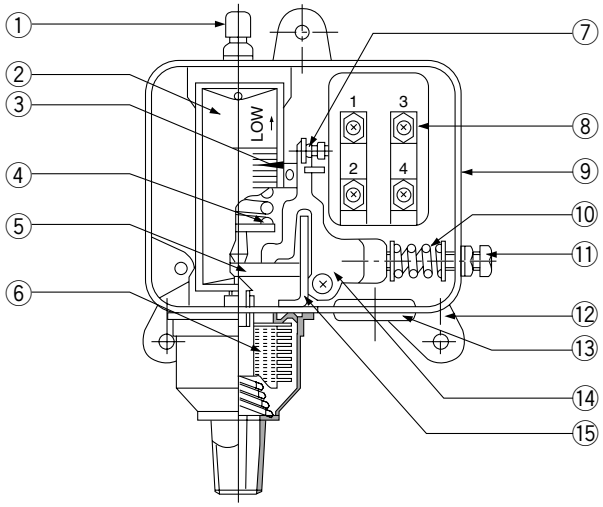
When rising pressure
① – ③ ④ – ⑥ = **ON**
① – ② ④ – ⑤ = **OFF**

Rated Voltage

Rated voltage (V)	Non inductive (A)		Inductive load (A)	
	Load resistance	Light load	Inductive load	Motor load
AC 110	12	2	12	3
220	10	1	10	1.5
440	6	1	3	1
550	5	0.8	2	0.5
DC 24	3	2.5	3	2.5
48	1.5	1.2	1.5	1.25
110	0.5	0.25	0.5	0.2
220	0.25	0.1	0.25	0.1

Insulation resistance: 100 MΩ or more at 500 VDC by megameter
Voltage resistance: 2000 VAC/1 min.

Construction



Component Parts

No.	Description
①	Setting pressure adjusting bolt
②	Scale plate
③	Pointer
④	Setting pressure adjusting spring
⑤	Main lever
⑥	Bellows assembly
⑦	Adjusting bolt
⑧	Snap switch (1a + 1b type)

No.	Description
⑨	Body
⑩	Hysteresis adjusting spring
⑪	Hysteresis adjusting bolt
⑫	Bracket
⑬	Grommet
⑭	Connection lever for switch operation
⑮	Stopper for operation lever

How to Order

ISG 1 1 0 – 03 0 – W

Multi-purpose pressure switch

Enclosure

1	Open type (Non-waterproof)
2	Dripproof (Equivalent to IP44)

Operating pressure range

1	0.02 to 0.3 MPa
2	0.05 to 0.7 MPa
3	0.1 to 1.0 MPa
9	–10 to –100 kPa

Material

0	Copper alloy
1	Stainless steel 316

Contacts/Bulb gland

Contact	**Nil**	1a1b (Standard)
	W	2ab
Bulb gland	**Nil**	Type A 20a (Standard)
	B	Type A 20b
	C	Type A 20c

Note) Symbol must be ordered alphabetically like "-BW".

Hysteresis scale plate

0	None
1	Hysteresis scale plate

Note) Not available for ISG 19/29□ type

Port size

03	R 3/8
N03	NPT 3/8

Other

⚠ Caution

1. Bellows assembly is available for maintenance. When replacing other parts, please contact SMC, since it cannot be repaired by user.
Order Bellows assembly with the part number as follows:
Bellows assembly for ISG□□□-□□□
(No other part numbers exist.)
Ex.) Bellows assembly for ISG 110-030

Operating Environment

1. Never use in an environment, where flammable fluids or gases are used. Since this product is not explosion-proof and may trigger an explosive disaster.

⚠ Precautions

Be sure to read before handling. Refer to pages 16-14-3 to 16-14-4 for Safety Instructions and Common Precautions on the products mentioned in this catalog, and refer to pages 16-1-11 to 16-1-13 for Precautions on every series.

Selection

⚠ Caution

1. Select the model taking into consideration the material suitable for the operating fluid. Type of operating fluid is limited by the material of wetted parts. Please contact SMC for materials not specified.

Wiring

⚠ Warning

1. Do not have the internal wiring attached to the connection lever for switch operation. It may malfunction.

⚠ Caution

1. The grommet size of open type switch is ø17. It is possible to connect the electric piping 1/2B without grommet.

2. Max. diameter of an electric cord usable for bulb gland is shown as below.

Cable gland	Max. diameter of an electric cord
20a	ø 12
20b	ø 13
20c	ø 15

3. Terminal thread type is M4.

Mounting/Piping

⚠ Caution

1. Mounting is possible in either horizontal or vertical orientations.

Pressure Source

⚠ Warning

1. In the case of using switch in any liquid, install a water hammer or surge reducer to prevent the damage to switch caused by surges or pulsation pressure.

Pressure Setting

⚠ Caution

1. Set the pressure by adjusting the setting pressure adjusting bolt to the right to increase and to the left to decrease.

2. Adjust the hysteresis with hysteresis adjusting bolt. In case of switch with scale plate, adjust the hysteresis with a flat head screwdriver tightening the adjusting bolt in the thread cap. Turn to the right to increase and to the left to decrease.

3. Hysteresis must be within the specified range in this catalog, operation may be unstable when activated out of the specified range.

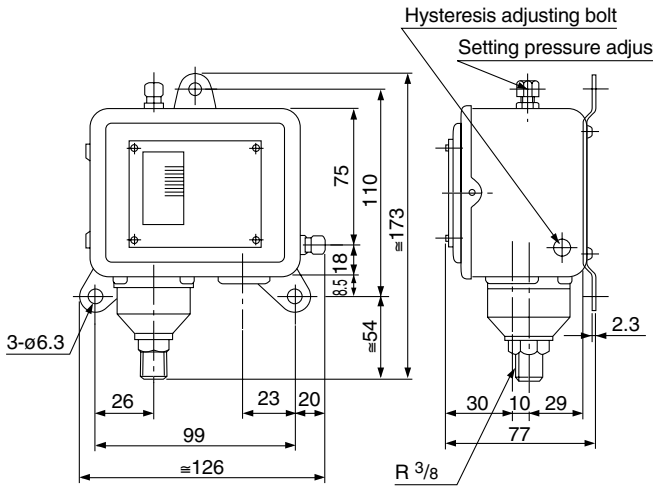
4. Scale plate is only for reference. Use the gauge to get the correct pressure value.

5. Set pressure scale at the value of the pressure increase.

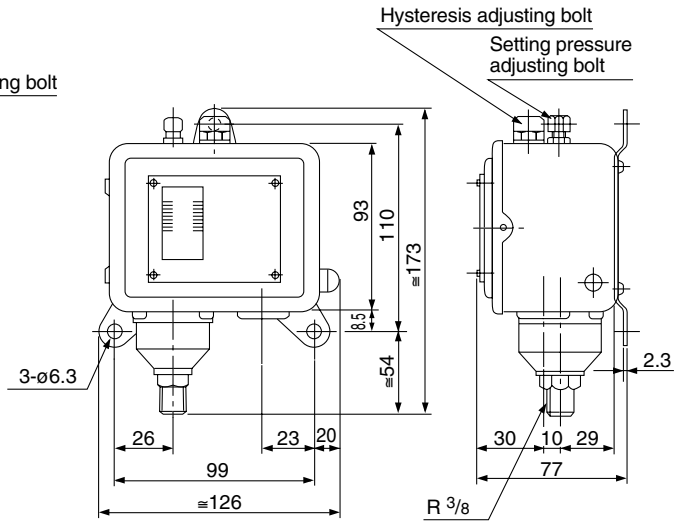
Dimensions

Open type

ISG110 to 191-030 (Without hysteresis scale plate)

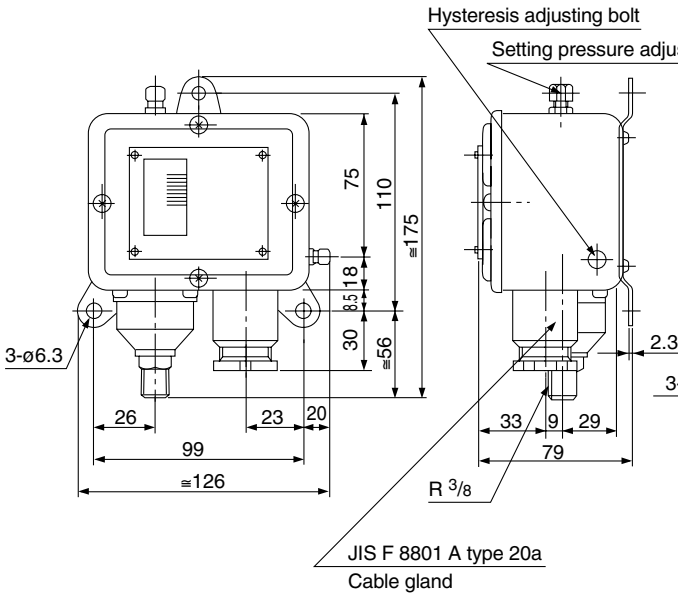


ISG110 to 131-031 (With hysteresis scale plate)



Dripproof type

ISG210 to 291-030 (Without hysteresis scale plate)



ISG210 to 231-031 (With hysteresis scale plate)