

# General Purpose Pressure Switch

## ISG Series



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



Open type      Open and hysteresis scale plate type



Dripproof

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	0.015 to 0.2	1.0	±0.006	Brass, Phosphor bronze	None	(Open type)
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	(Grommet)
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	(Capcone ø11 to 13)
ISG130-031	ISG230-031		0.03 to 0.6			Brass, Phosphor bronze	Yes	
ISG131-030	ISG231-030		0.03 to 0.4			Stainless steel 316	None	
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 (Option), Port size: 3/8, Weight: 1.2 kg (Open type), 1.3 kg (Dripproof)

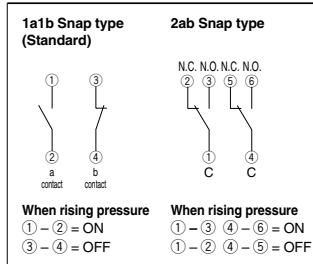
### Fluid

Type of operating fluid is limited by the material of wetted parts. Select the model taking into consideration the material suitable for the operating fluid.

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



### Rated Voltage

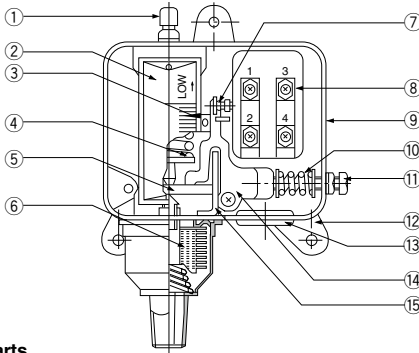
Rated voltage	Non inductive (A)		Inductive load (A)	
	Load resistance	Light load	Inductive load	Motor load
110 VAC	12	2	12	3
220 VAC	10	1	10	1.5
440 VAC	6	1	3	1
24 VDC	3	2.5	3	2.5
48 VDC	1.5	1.2	1.5	1.25
110 VDC	0.5	0.25	0.5	0.2
220 VDC	0.25	0.1	0.25	0.1

Insulation resistance: 100 MΩ or more at 500 VDC by megameter

Voltage resistance: 2000 VAC/1 min.

Note) CE/UKCA-compliant: 220 VAC, 110 VDC or less

**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 - - -**

1 2 3 4 5 6 7

\* Select one by one, item for item.  
 \* For semi-standard, indicate symbols numerically, then alphabetically.  
 Ex.) ISG110-030-PW

	Symbol	Contents	
1	1	Open type (Equivalent to IP40)	
	2	Dripproof (Equivalent to IP44)	
2	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	
	+		
3	0	Brass/phosphor bronze	
	1	Stainless steel 316	
4	03	R 3/8	
	N03	NPT 3/8	
	+		
5	0	None	
	1 (Note 1)	Hysteresis scale plate	
6	a	Nil	1a1b
		W (Note 2)	2ab
	b	+	
		P (Note 2)	MPa
7	Nil	Noncompliant	
	Q	Compliant	

Note 1) Not available for ISG19□, 29□

Note 2) Not available for CE/UKCA-compliant products. CE/UKCA-compliant products conform to 220 VAC or less, 110 VDC or less.

**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 this before handling the products. Refer to back page 50 for Safety Instructions and pages 11 and 12 for Pressure Switch Precautions.

**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. 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.

ZSE20  
ISE20

ZSE30  
ISE30

ZSE40  
ISE40

ZSE10  
ISE10

ISE70

ZSE80  
ISE80

PS

ISA3

ISA2

ISE35

PSE

IS

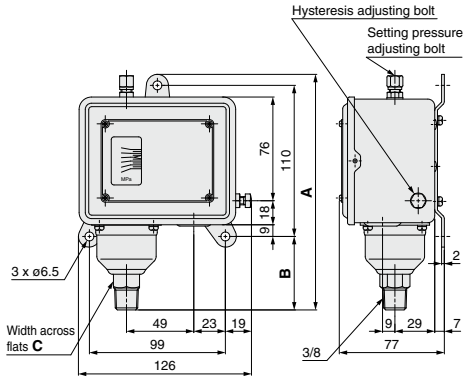
ISG

ZSM1

## Dimensions

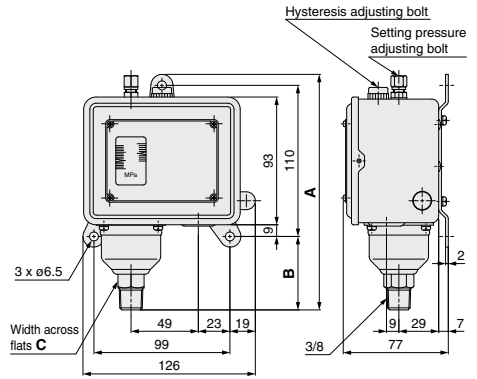
### Open type

#### ISG110 to 191-030 (Without hysteresis scale plate)



Dimensions		(mm)		
Part no.	A	B	C	
ISG110-030(-W)	172	54	19	
ISG1□0 to 1□0-030(-W)	169	51	19	
ISG1□1 to 1□1-030(-W)	177	59	23	

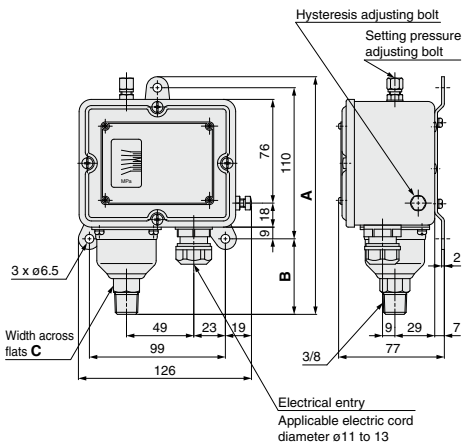
#### ISG110 to 131-031 (With hysteresis scale plate)



Dimensions		(mm)		
Part no.	(A)	(B)	C	
ISG110 to 130-031(-W)	172	54	19	
ISG111 to 131-031(-W)	177	59	23	

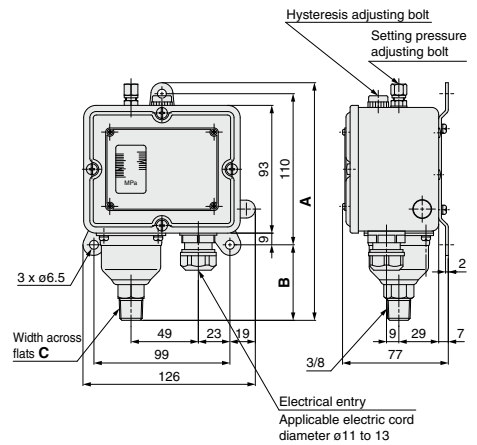
### Dripproof type

#### ISG210 to 291-030 (Without hysteresis scale plate)



Dimensions		(mm)		
Part no.	A	B	C	
ISG2□0 to 2□0-030(-W)	173	55	19	
ISG2□1 to 2□1-030(-W)	178	60	23	

#### ISG210 to 231-031 (With hysteresis scale plate)



Dimensions		(mm)		
Part no.	(A)	(B)	C	
ISG210 to 230-031(-W)	173	55	19	
ISG211 to 231-031(-W)	178	60	23	