



Digital Pressure Switch For General Purpose Fluid

Series ZSE5/ISE5

(For vacuum)

(For positive pressure)



Stainless Steel Diaphragm

SUS630 is used for sections in contact with liquid or gas and SUS304 for fitting section.

Leakage Rate: 1×10^{-4} atm cc/s

The sensor section and joint section are welded by electronic beams for measuring pressure of various kinds of fluid, such as water-containing fluid and gas that should not leak, which cannot be handled by existing models.

For use in fluid applications

- Hydraulic fluid
- Silicon oil
- Lubricating oil

- For absorption check of wet LCD glass.
- Measurement of liquid pressure.

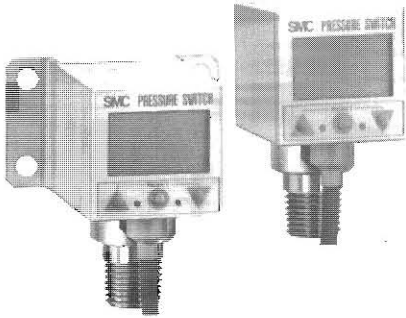
- Dry air
- Carbon dioxide
- Argon
- Drain-containing air
- Ammonia
- Nitrogen gas
- Freon

- For measurement of low quality air with drain before dehumidification.
- Tank leakage test by measurement of nitrogen.

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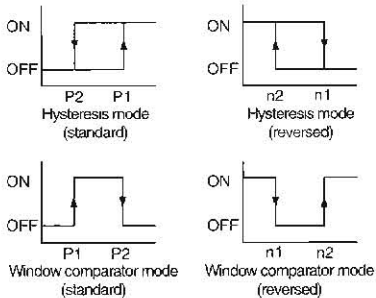


With unit change function for use all over the world.

Free selection of display units and easy unit conversion make these models effective during the SI unit transition period. (MPa, kPa, kgf/cm², mmHg, bar, PSI)

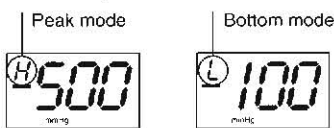
A variety of switch output modes

Applicable to a hysteresis mode, window comparator mode, and reversed output of respective modes.



Peak/Bottom hold function

Press the▲or▼button while pressure is being displayed, and the peak pressure (upper limit) or bottom pressure (lower limit) will be held and displayed. This function is available during pressure setting.



Complete self-diagnosis function

An error is displayed when pressure is applied during overcurrent, excessive pressure, data error, or 0-clear, in order to prevent possible trouble.

Exact detection of atmospheric pressure

The atmospheric pressure, that returns after vacuum break pressure is applied, can be exactly detected.

The dual output applies to NPN, PNP, and analog output.

Model

Model	Switch specifications	Output specifications
ZSE5B-□-26L	None (Analog output)	1~5V(5%F.S.)
ZSE5B-□-27L	2 output	NPN open collector 30V,80mA
ZSE5B-□-67L		PNP open collector 80mA
ISE5B-□-26L	None (Analog output)	1~5V(5%F.S.)
ISE5B-□-27L	2 output	NPN open collector 30V,80mA
ISE5B-□-67L		PNP open collector 80mA

Standard Specifications

Item	ZSE5B-□-26L	ZSE5B-□-27L	ZSE5B-□-67L	ISE5B-□-26L	ISE5B-□-27L	ISE5B-□-67L
Pressure setting	-100kPa~100kPa {1.02kgf/cm ² }			-0.1MPa~1MPa {10.2kgf/cm ² }		
Unit setting	mmHg, kPa, PSI kgf/cm ² , bar			MPa, PSI kgf/cm ² , bar		
Min. setting range	mmHg:10, kPa:2, PSI:0.2 kgf/cm ² :0.02, bar:0.02			MPa:0.01, PSI:1 kgf/cm ² :0.1, bar:0.1		
Note1) Hysteresis	Window comparator mode		Adjustable (2digit or more) Fixed (2digit)	Window comparator mode		Adjustable (3digit or more) Fixed (3digit)
Display light	ON:Turn on light Output1:Green Output2:Red			ON:Turn on light Output1:Green Output2:Red		
Response frequency	200Hz			200Hz		
Max. operating pressure	200kPa {2.04kgf/cm ² }			1.5MPa {15.3kgf/cm ² }		

Common Specifications

Fluid	Fluid that will not corrode SUS304 and SUS630
Temp. characteristics	±3%F.S.max.
Repetition accuracy	±1%max.
Power supply	12~24VDC(Ripple10%max.)
Consumption current	45mA max.
Emergency display	Display : Red/display the error code on LCD
Pressure display	3 1/2 Digit LCD
Self diagnosis function	Excess pressure/Data error/ Note2) Excess current/Pressure during 0-clear
Operating temp.range	0~50°C
Noise resistance	500Vp~p pulse width 1μS standing 1nS
Insulation resistance	Between whole wires and case 2MΩ (50VDC by megameter)
Vibration resistance	10~500Hz width=1.5mm or acceleration10G (chose the smaller vibration) to X, Y, Z direction (2 hours)
Shock resistance	100G to X, Y, Z direction (3 times for each direction)
Weight	126g (Incl. 3m-long lead wire)

Note1) Hysteresis mode

ZSE When the values of P1 and P2 are the same or when P1 > P2 within 2 digits, the hysteresis will be automatically 2 digits for the set value of P1.

ISE When the values of P1 and P2 are the same or when P1 > P2 within 3 digits, the hysteresis will be automatically 3 digits for the set value of P1.

Window comparator mode

ZSE The hysteresis is 2 digits, so separate P1 from P2 by 5 digits or more and set them.

ISE : The hysteresis is 3 digits, so separate P1 from P2 by 7 digits or more and set them.

※1digit is the minimum pressure display unit.(See the table above)

Note 2) Analog output has no overcurrent detection function.

Option

Description	Parts No.	Note
Bracket	ZS-22-D	With four M3 tappings

How to Order

Vacuum pressure switch

ZSE5B

Piping specifications

02	Direct piping R(PT) 1/4
T2	Direct piping NPTF 1/4

Switch specifications

26	Analog 3-wire
27	2 output (NPN) 4-wire
67	2 output (PNP) 4-wire

Wiring specifications

L	Grommet:3m
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Positive pressure switch

ISE5B

Piping specifications

02	Direct piping R(PT) 1/4
T2	Direct piping NPTF 1/4

Switch specifications

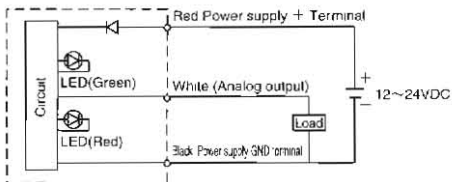
26	Analog 3-wire
27	2 output (NPN) 4-wire
67	2 output (PNP) 4-wire

Wiring specifications

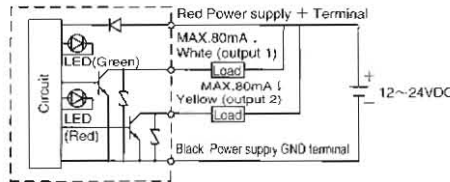
L	Grommet:3m
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Internal Circuit and Wiring

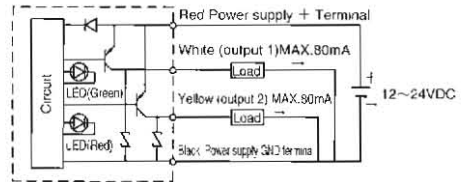
-26 analog output type



-27 type NPN open collector



-67 type PNP open collector



Precautions

Piping

- Be sure to apply a wrench to the metal section (17mm) during piping. Never apply a wrench to the resin section of the main unit.
- Clean tube fittings by air-blow to remove foreign matter from inside.

Operating conditions

This switch is not of a waterproof type. Wipe the switch splashed with water or oil.

Wiring

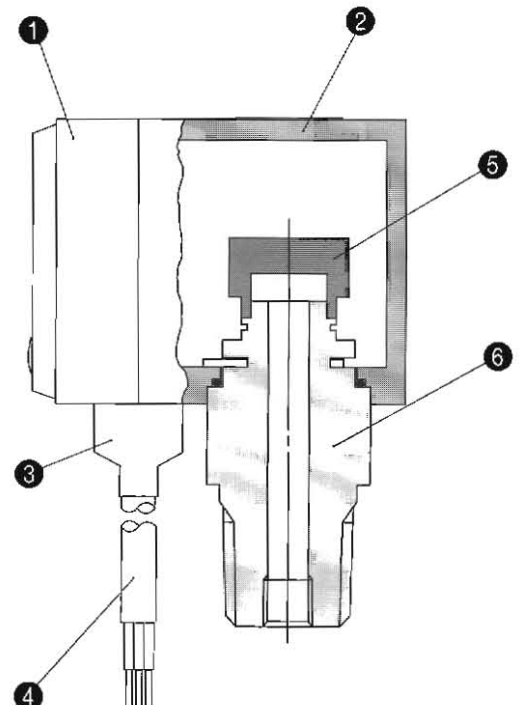
- Avoid wiring together with power cables and high-tension cables. Otherwise, noise may cause malfunction.
- When induction noise is expected to be generated from piping, ground the piping.
- The tensile strength of the cord is 49N(5kgf). Tensile strength greater than that will cause trouble. Hold the main unit when handling the switch.

Quality of operating fluid

Sections in contact with fluid are made of SUS630 (pressure sensor) and SUS304 (fitting). Use fluid that will not corrode these materials. The corrosion resistance of SUS630 and that of SUS304 are almost the same. For reference, fluid and gas that will not corrode SUS304 are shown below.

Dry air	○
Drain-containing air	○
Hydraulic fluid (JIS-K2213)	○
Silicon oil (JIS-K2213)	○
Lubricating oil (JIS-K6301)	○
Freon	○
Carbon dioxide	○
Ammonia	○
Argon	○
Nitrogen gas	○
Chlorine gas	×

Construction / Parts List



Parts List

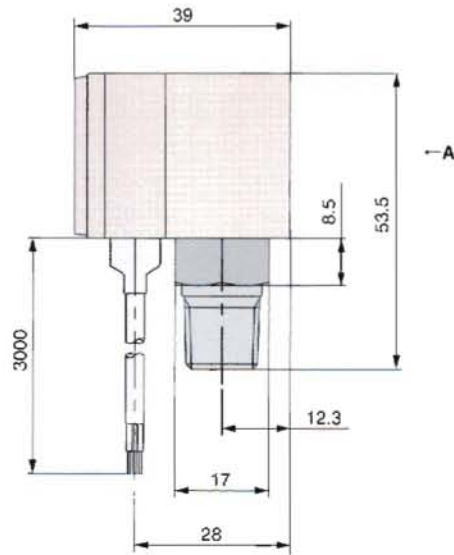
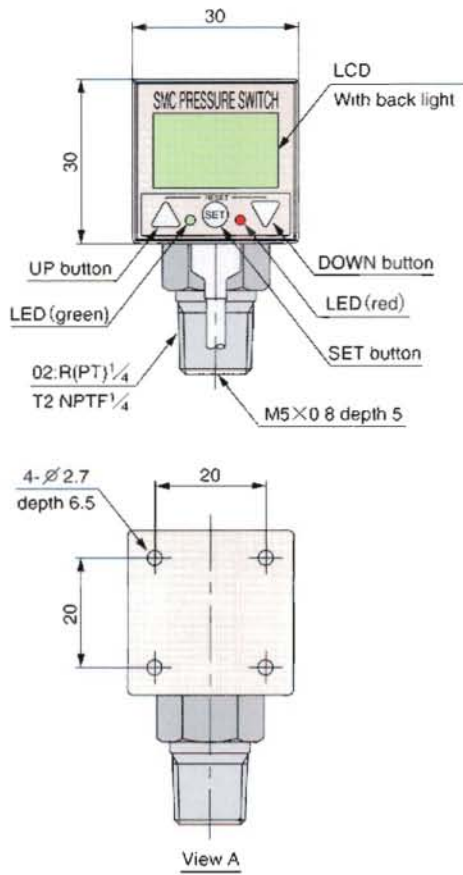
No.	Description	Material
1	Indicator panel	Denatured PPO
2	Body	PBT
3	Packing	NBR
4	Lead wire	Vinyl chloride (Vinyl sheath)
5	Pressure sensor	SUS630
6	Fittings	SUS304

Series ZSE5/ISE5

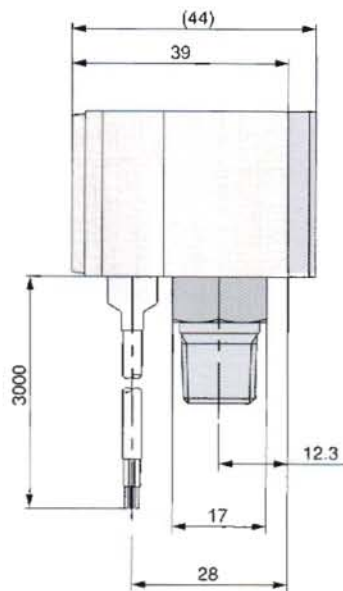
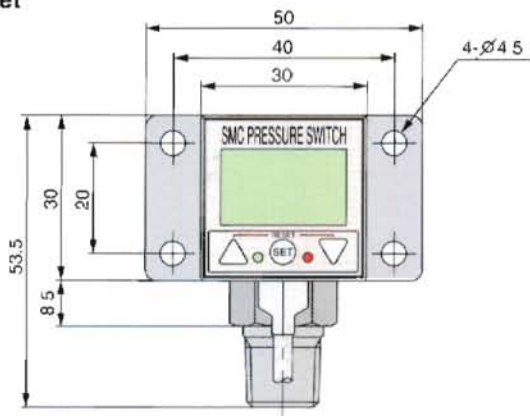
Dimensions

(mm)

Scale : 75%



With bracket



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