

# 2-colour Display High Precision Digital Pressure Switch

## Series **ZSE30A/ISE30A**



### Features

- ➔ Adjustable vacuum, positive and compound pressure switch with display
- ➔ Large, easy to read, 2 colour (green/red), 4 digit display.
- ➔ Easy operation: 3-step setting and copy display.
- ➔ Analogue output: 4-20mA or 1-5V.
- ➔ Switch output: 2 pnp/npn or 1 pnp/npn.
- ➔ Replaceable one touch fittings.
- ➔ Can be panel mounted.
- ➔ Choice of mounting brackets also available.
- ➔ Additional functions: Secret code setting function, power-saving function, resolution-switch function.



### Specifications

Model	ZSE30A (Vacuum pressure)	ZSE30AF (Compound pressure)	ISE30A (Positive pressure)
Rated pressure range	0.0 to -101.0 kPa	-100.0 to 100.0 kPa	-0.100 to 1.000 MPa
Regulating pressure range	10.0 to -105.0 kPa	-105.0 to 105.0 kPa	-0.105 to 1.050 MPa
Proof pressure	500 kPa	500 kPa	1.5 MPa
Setting/display resolution	0.1 kPa	0.1 kPa	0.001 MPa
Applicable fluid	Air, non-corrosive gas, non-flammable gas		
Power supply voltage	12 to 24 VDC $\pm 10\%$ , Ripple (p-p) 10% or less (with power supply polarity protection)		
Current consumption	40 mA or less		
Switch output	NPN or PNP open collector 1 output, NPN or PNP open collector 2 outputs (selectable)		
Switch output	Maximum load current	80 mA	
	Maximum applied voltage	28 V (with NPN output)	
	Residual voltage	1 V or less (with load current of 80 mA)	
	Response time	2.5 ms or less (with anti-chattering function: 20, 100, 500, 1000, 2000 ms)	
	Short circuit protection	With short circuit protection	
Repeatability	$\pm 0.2\%$ F.S. $\pm 1$ digit		
Hysteresis	Hysteresis mode	Variable (0 or above) <sup>Note 1)</sup>	
	Window comparator mode		
Analogue output	<sup>Note 2)</sup> Voltage output	Output voltage	1 to 5V $\pm 2.5\%$ F.S. or less (with rated pressure range)   0.6 to 5 V $\pm 2.5\%$ F.S. or less (with rated pressure range)
		Linearity	$\pm 1\%$ F.S. or less
		Output impedance	Approx. 1 k $\Omega$
	<sup>Note 3)</sup> Current output	Output current	4 to 20 mA $\pm 2.5\%$ F.S. or less (with rated pressure range)   2.4 to 20 mA $\pm 2.5\%$ F.S. or less (with rated pressure range)
		Linearity	$\pm 1\%$ F.S. or less
Load impedance	Maximum load impedance: 300 $\Omega$ with power supply voltage of 12 V; 600 $\Omega$ with power supply voltage of 24 V Minimum load impedance: 50 $\Omega$		
Display	4-digit, 7-segment, 2-colour LCD (Red and Green)		
Display accuracy	$\pm 2\%$ F.S. $\pm 1$ digit (ambient temperature of 25 $\pm 3^\circ\text{C}$ )		
Indicator light	Lights up when switch output is ON. OUT1: Green, OUT2: Red		
Environment resistance	Enclosure	IP40	
	Operating temperature range	Operating: 0 to 50 $^\circ\text{C}$ , Stored: -10 to 60 $^\circ\text{C}$ (no freezing or condensation)	
	Operating humidity range	Operating/Stored: 35 to 85% RH (no condensation)	
	Withstand voltage	1000 VAC for 1 minute between live parts and enclosure	
	Insulation resistance	50 M $\Omega$ or more between live parts and enclosure (at 500 VDC Mega)	
	Vibration resistance	10 to 150 Hz, 1.5 mm amplitude (or 20 m/s <sup>2</sup> acceleration), in X, Y, Z directions, for 2 hours each (Non-energized)	
Impact resistance	100 m/s <sup>2</sup> in X, Y, Z directions, 3 times each (non-energised)		
Temperature characteristics	$\pm 2\%$ F.S. (based on 25 $^\circ\text{C}$ )		
Lead wire	Oilproof heavy-duty vinyl cable, 3 cores $\varnothing 3.5$ , 2 m 4 cores Conductor area: 0.15 mm <sup>2</sup> (AWG26), Insulator O.D.: 1.0 mm		
Standards	CE Marking, UL/CSA, RoHS compliance		

Note 1) If applied pressure fluctuates near the set value, set the hysteresis above the fluctuation range to prevent chattering.

Note 2) When analogue the voltage output is selected, a simultaneous selection of switch output and current output is not available.

Note 3) When analogue the current output is selected, a simultaneous selection of switch output and voltage output is not available.

# Series ZSE30A/ISE30A High Precision, 2-colour Display Digital Pressure Switch

## How to order

For positive pressure

ISE30A - 01 - N - M

For vacuum/compound pressure

ZSE30A - 01 - N - M

### Output

N	NPN open collector 1 output
P	PNP open collector 1 output
A	NPN open collector 2 outputs
B	PNP open collector 2 outputs
C <sup>Note)</sup>	NPN open collector 1 output + Analogue voltage output
D <sup>Note)</sup>	NPN open collector 1 output + Analogue current output
E <sup>Note)</sup>	PNP open collector 1 output + Analogue voltage output
F <sup>Note)</sup>	PNP open collector 1 output + Analogue current output

Note) Made to Order

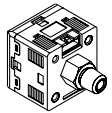
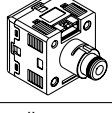
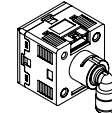
### Rated pressure range

ISE30A	-0.1 to 1 MPa
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### Rated pressure range

ZSE30A	0 to -101 kPa
ZSE30AF	-100 to 100 kPa

### Piping

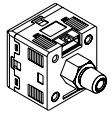
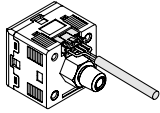
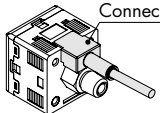
01	R1/8 (M5 female threaded)	
C4H	One-touch fitting ø4 mm, ø5/32 inch	Straight type 
C6H	One-touch fitting ø6 mm	
C4L	One-touch fitting ø4 mm, ø5/32 inch	Elbow type 
C6L	One-touch fitting ø6 mm	

### Display unit

—	With unit display switching function
M	Fixed SI unit <sup>Note 2)</sup>
<sup>Note 1)</sup> P	With unit display switching function (Initial value PSI)

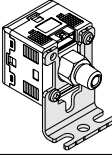
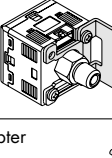
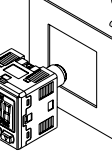
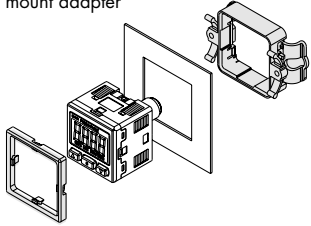
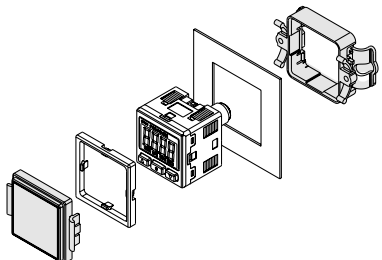
Note 1) Made to Order  
Note 2) Fixed unit kPa, MPa

### Option 1

—	Without lead wire	
L	Lead wire with connector (Lead wire length 2 m) <sup>Note)</sup>	
G	Lead wire with connector (lead wire length 2 m) <sup>Note)</sup> and with connector cover	

Note) For output types N and P, the number of core of lead wires will be 3, and for other types, it will be 4.

### Accessories for mounting

—	None	
ZS-28-A1	Bracket A	
ZS-28-A2	Bracket B	
ZS-27-C	Panel mount adapter	
ZS-27-D	Panel mount adapter + front protection cover	

## Piping Specifications

Model	01	C4H	C6H	C4L	C6L	
Port size	R1/8 M5 x 0.8	—	—	—	—	
	One-touch fitting, Straight type	—	ø4 mm ø5/32 inch	ø6 mm	—	
	One-touch fitting, Elbow type	—	—	—	ø4 mm ø5/32 inch	ø6 mm
Wetted parts material	Sensor pressure receiving area: Silicon					
	Piping port	C3602 (electroless nickel plated) O-ring: HNBR	PBT, POM, Stainless steel 304, C3604 (electroless nickel plated) O-ring: NBR			
Weight	Including lead wire with connector (3 cores, 2 m)	81 g	70 g	71 g	75 g	73 g
	Including lead wire with connector (4 cores, 2 m)	85 g	74 g	75 g	79 g	77 g
	Excluding lead wire with connector	43 g	32 g	33 g	37 g	35 g

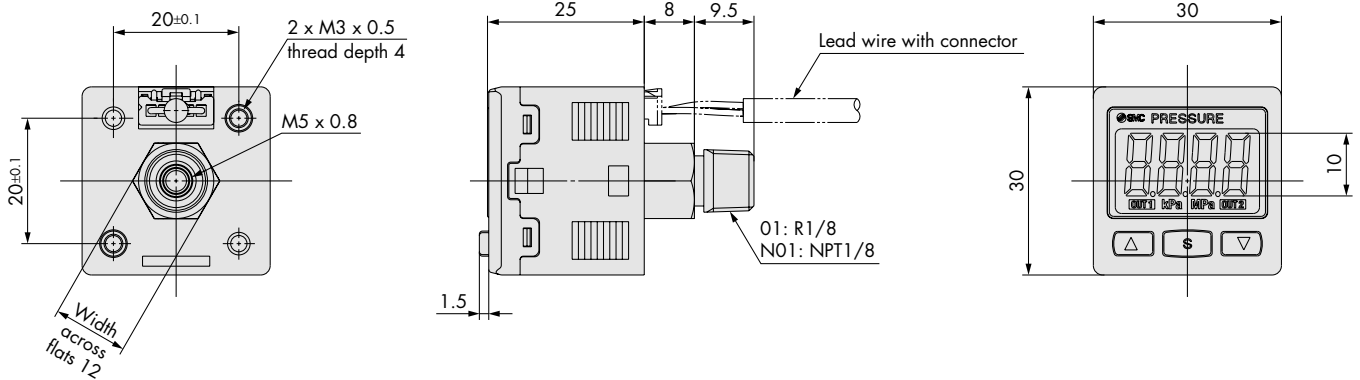
## Optional Part No.

When optional parts are required separately, use the following part numbers to place an order.

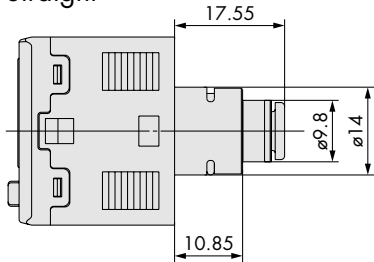
Part no.	Option	Note
ZS-27-01	Front protection cover	
ZS-38-3L	Lead wire with connector	3 cores, for 1 output, 2 m
ZS-38-4L	Lead wire with connector	4 cores, for 2 outputs, 2 m
ZS-38-3G	Lead wire with connector (with connector cover)	3 cores, for 1 output, 2 m
ZS-38-4G	Lead wire with connector (with connector cover)	4 cores, for 2 outputs, 2 m

Part no.	Option	Note
ZS-38-5L	Lead wire with a connector for copying	3 cores, copy function, 1 m
ZS-38-U	Lead wire unit with a connector for copying	Copy function (up to 10 slaves)
ZS-38-C4H	One-touch fittings $\varnothing 4$ mm straight	O-ring, one-touch clip included
ZS-38-C6H	One-touch fittings $\varnothing 6$ mm straight	O-ring, one-touch clip included
ZS-38-N7H	One-touch fittings $\varnothing 1/4$ inch straight	O-ring, one-touch clip included
ZS-38-C4L	One-touch fittings $\varnothing 4$ mm elbow	O-ring, one-touch clip included
ZS-38-C6L	One-touch fittings $\varnothing 6$ mm elbow	O-ring, one-touch clip included
ZS-38-N7L	One-touch fittings $\varnothing 1/4$ inch elbow	O-ring, one-touch clip included
ZS-38-H	Operating manual CD-ROM	

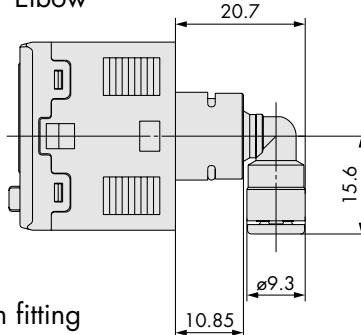
## Dimensions



### Straight



### Elbow

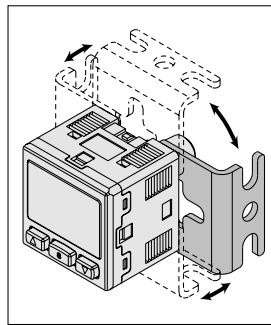
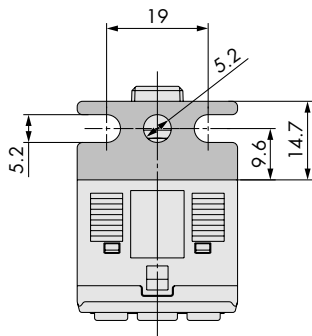
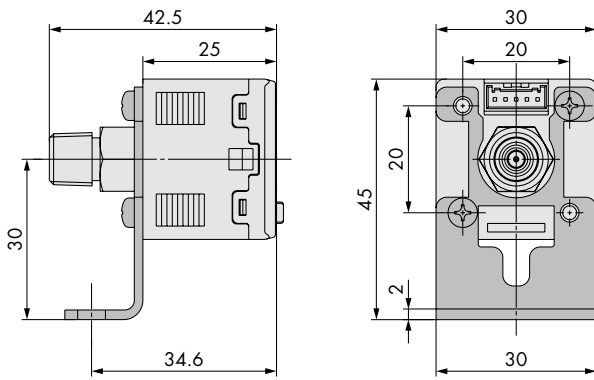


With one-touch fitting

One-touch fitting type	Straight		Elbow		
	A	B	A	B	C
$\varnothing 3$	17.55	9.8	20.07	9.3	15.6
$\varnothing 4$	17.95	10	22.85	11.6	16.1

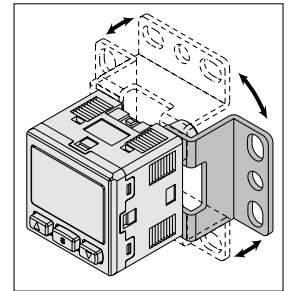
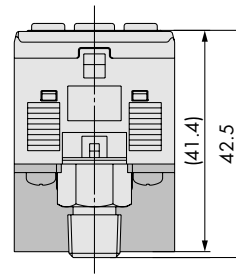
# Series ZSE30A/ISE30A High Precision, 2-colour Display Digital Pressure Switch

## With bracket

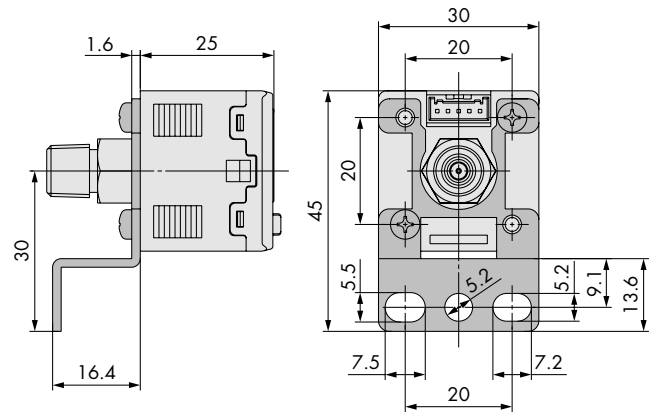


Note) Bracket configuration allows mounting in four directions.

Bracket A



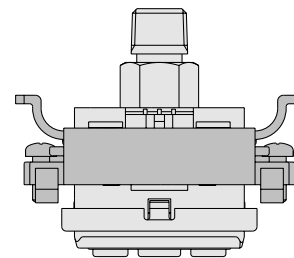
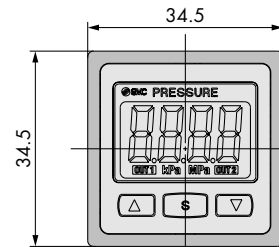
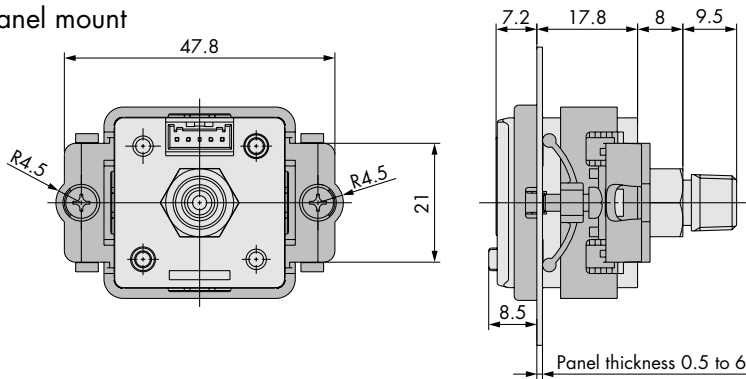
Note) Bracket configuration allows mounting in four directions.



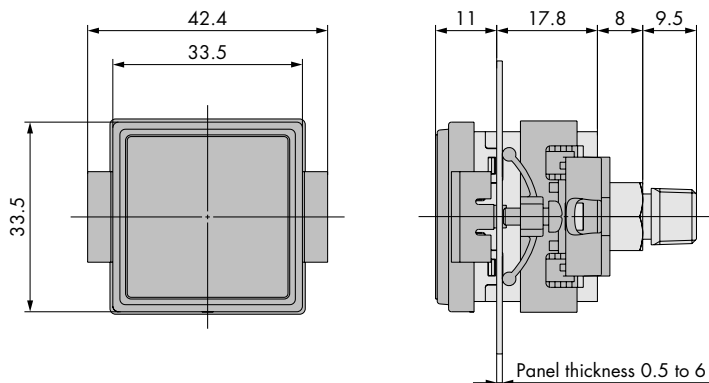
Bracket B

## Dimensions

### Panel mount



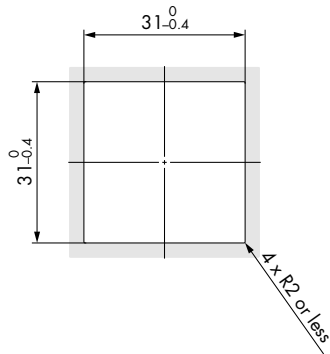
### Panel mount adapter + Front protection cover



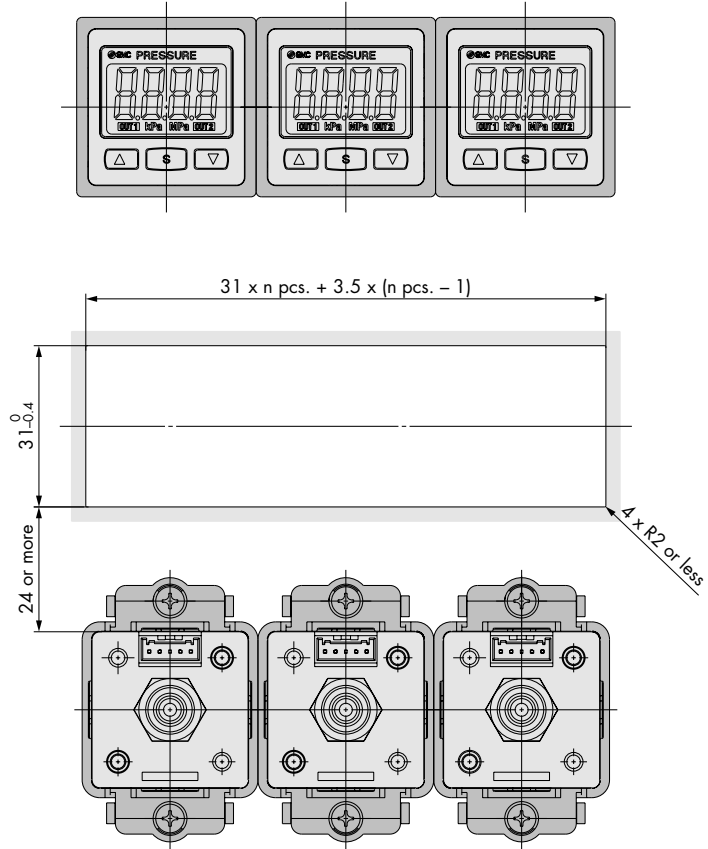
Dimensions

Panel fitting dimensions

1 pc. mounting



Multiple (2 pcs. or more) horizontal mounting



Multiple (2 pcs. or more) vertical mounting

