How to Order

Clean series

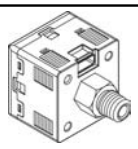
Option 1

Nil	Without lead wire 
L	Lead wire with connector (lead wire length: 2 m) 

For positive pressure **10** — **ISE30** — **01** — **25** — **M** □ □

For vacuum/low pressure **10** — **ZSE30** — **01** — **25** — **M** □ □

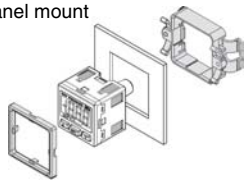
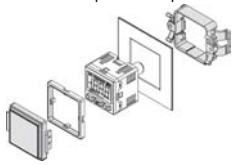
Piping specifications

01	R1/8 (with M5 female thread)	
T1	NPT1/8 (with M5 female thread)	
C4H	One-touch fitting for ø4 One-touch fitting for ø5/32"	Straight union type 
C6H	One-touch fitting for ø6	
N7H	One-touch fitting for ø1/4"	
C4L	One-touch fitting for ø4 One-touch fitting for ø5/32"	Elbow Type 
C6L	One-touch fitting for ø6	
N7L	One-touch fitting for ø1/4"	

Output specifications

25	NPN Output
65	PNP Output
26	1-5 V output
28	4 to 20 mA output

Option 2

Nil	None
A	Brackets 
B	Panel mount 
D	Panel mount adapter + front protective cover 

Unit specifications

Nil	With unit switching function Note 1)
M	Fixed SI unit Note 2)

Note 1) A new scale and measurement act does not allow use of a product with unit display switching function in Japan.

Note 2) Fixed units For vacuum pressure or compound pressure: kPa
For positive pressure: MPa

Optional Part No.

When only optional parts are required, order with the part numbers listed below.

Options	Part no.	Note
Lead wire with connector	**10-ZS-27-A**	Lead wire length: 2 m
Brackets	**10-ZS-27-B**	With mounting screws (M3 x 5L: 2 pcs)
Panel mount adapter	**10-ZS-27-C**	With mounting screws (M3 x 8L: 2 pcs)
Panel mount adapter + front protective cover	**10-ZS-27-D**	With mounting screws (M3 x 8L: 2 pcs)

⚠ Caution

This product is 10-ZSE30/ISE30 series blown with air and double packed in a Class M3.5 (ISO Class 5) clean room.

Specifications

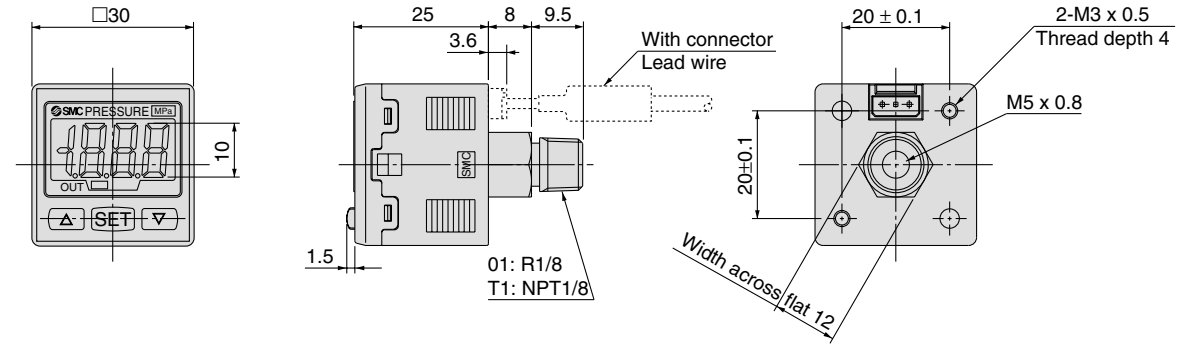
		10-ZSE30 (for vacuum/low pressure)	**10-ISE30** (positive pressure)
Rated pressure range		–100.0 to 100.0 kPa	0.000 to 1.000 MPa
Regulating pressure range		–101.0 to 101.0 kPa	–0.100 to 1.000 MPa
Proof pressure		500 kPa	1.5 MPa
Minimum setting unit		0.2 kPa	0.001 MPa
Applicable fluids		Air, non-corrosive gas, and nonflammable gas	
Power supply voltage		12 to 24 V DC, Ripple (p-p) 10% or less (with power supply polarity protection)	
Current consumption		45mA or less (at no load)	
Switch output Note 1)		NPN or PNP open collector output: 1 output	
	Max. load pressure	80mA	
	Max. applied voltage	30V (with NPN output)	
	Residual voltage	1 V or less (with load current of 80 mA)	
	Response time	2.5 ms or less (Response time selections with anti-chattering function: 20 ms, 160ms, 640ms, 1280 ms)	
	Short circuit protection	With short circuit protection	
Repeatability		±0.2% F.S. ±2 digits or less	±0.2% F.S. ±1 digit or less
Analog output	**Voltage output** Note 2)	Output voltage: 1 to 5 V ±2.5% F.S. or less (with rated pressure range) Linearity: ±1%F.S. or less, Output impedance: Approx. 1kΩ	
	Current output Note 3)	Output current: 4 to 20 mA ±2.5% F.S. or less (with rated pressure range) Linearity: ±1%F.S. or less Maximum load impedance: 300 Ω with power supply voltage of 12 V; 600 Ω with power supply voltage of 24 V Minimum load impedance: 50 Ω	
Hysteresis	**Hysteresis mode**	Variable (can be set from 0)	
	Window comparator mode		
Display		3 1/2-digit, 7-segment indicator, 2-color display (red and green) Sampling cycle: 5 times/s	
Display accuracy		±2% F.S. ±2 digit (at operating temperature of 25°C)	±2% F.S. ±1 digit (at operating temperature of 25°C)
Indicator light		ON when power supply is ON (green)	
Temperature characteristics		±2%F.S. or less (based on 25°C)	
Environmental resistance	**Enclosure**	IP40	
	Operating temperature range	Operating: 0 to 50°C, Stored: 10 to 60°C (with no condensation or freezing)	
	Operating humidity range	Operating and stored: 35 to 85% RH (with no condensation)	
	Withstand voltage	1000 V AC for 1 min between lead wires and body	
	Insulation resistance	50 MΩ or more between live parts and enclosure (at 500 V DC)	
	Vibration resistance	10 to 150 Hz, 1.5 mm or 20 m/s^2 amplitude in X, Y, Z directions for 2 hrs. each	
	Shock resistance	100 m/s^2 in X, Y, Z directions, 3 times each	
Standard		CE marking and UL (CSA) compatible	
Particle generation grade (Refer to pages 13 to 22 of of Front Matter for details.)		Grade 2	

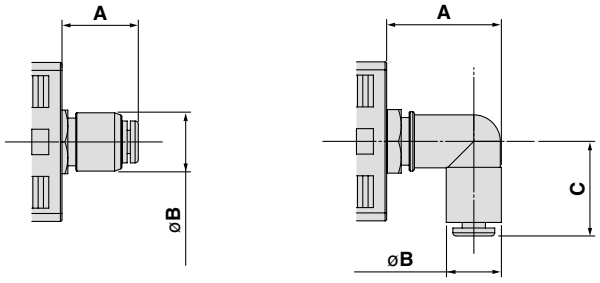
Note 1) When switch output is selected, analog output is not available.
Note 2) When voltage output is selected, a simultaneous selection of switch output and current output is not available.
Note 3) When current output is selected, a simultaneous selection of switch output and voltage output is not available.

Piping specifications

Part no.		01	T1	C4H	C6H	N7H	C4L	C6L	N7L
		R1/8 M5 x 0.8	NPT1/8 M5 x 0.8	—	—	—	—	—	—
Port size	One-touch Fittings Straight type	—	—	ø4mm ø5/32inch	ø6mm	ø1/4inch	—	—	—
	One-touch fitting Elbow Type	—	—	—	—	—	ø4mm ø5/32inch	ø6mm	ø1/4inch
Wetted part material		Sensor pressure: Silicon, piping port: C3602 (electroless nickel plated), O-ring: FKM							
				O-ring: FKM			O-ring: FKM, fitting: PBT		
Weight	With lead wire with connector (2 m)	81g		76g			78g		
	Without lead wire with connector	43g		38g			40g		

Dimensions





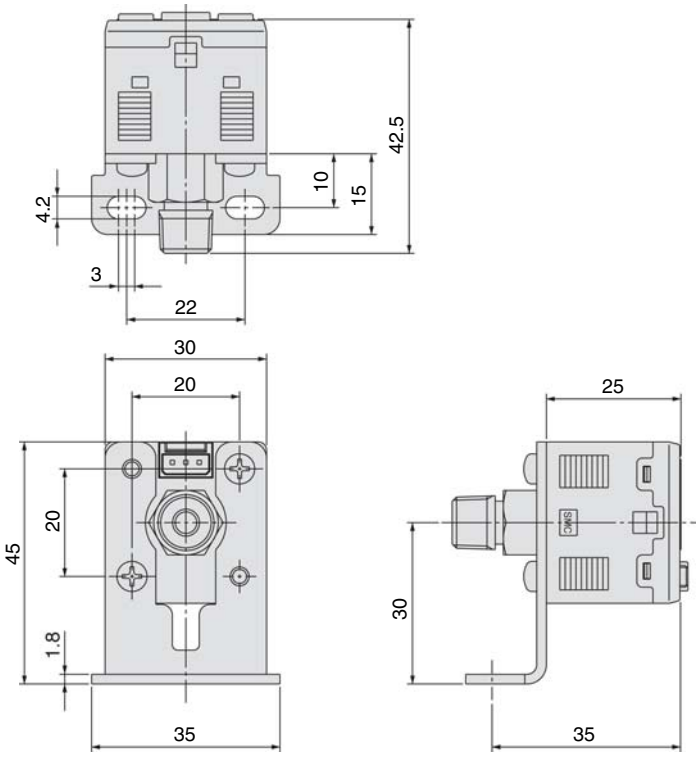
Straight **Elbow**

With One-touch Fitting

(mm)

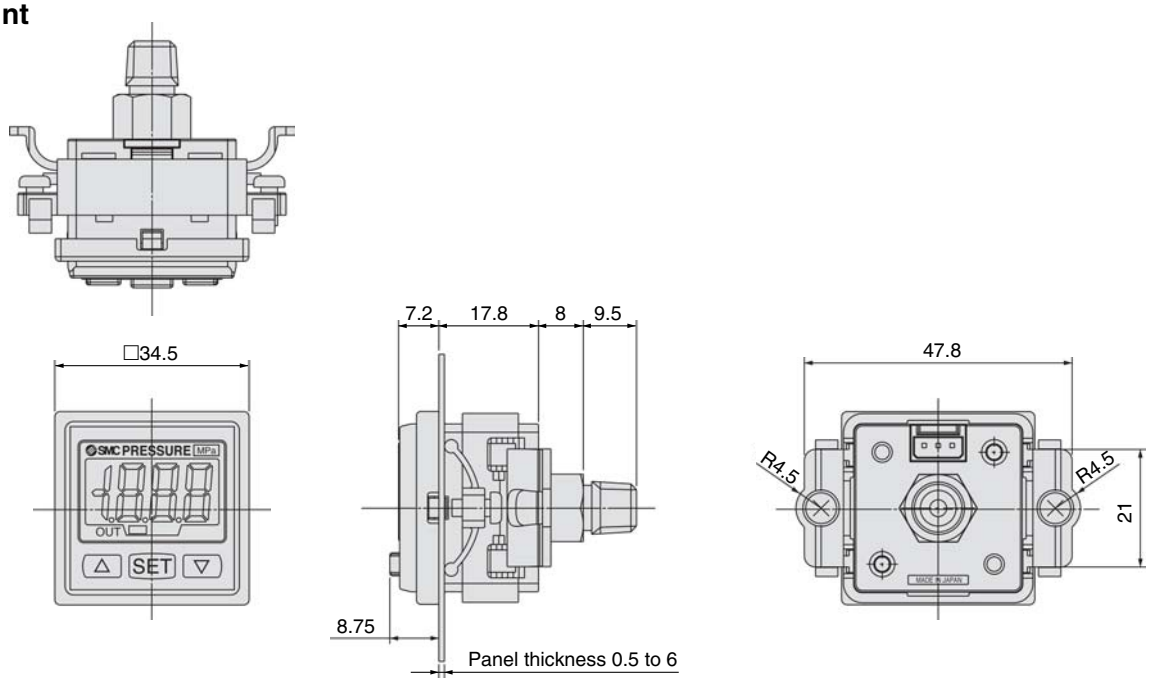
One-touch Fittings Size	Straight		Elbow		
	A	**B**	**A**	**B**	**C**
ø4, ø5/32"	14.4	11.2	20	10.4	18
ø6			22.4	12.8	20
ø1/4"			22.8	13.2	20.5

With bracket

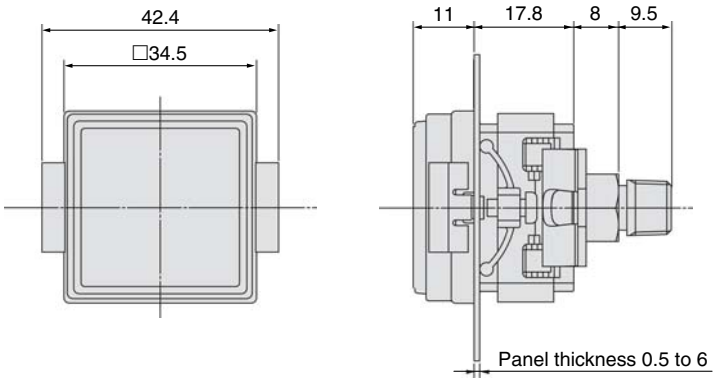


Dimensions

Panel mount



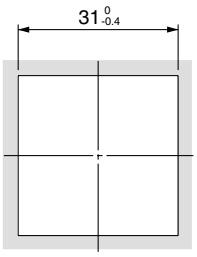
Panel mount adapter + front protective cover



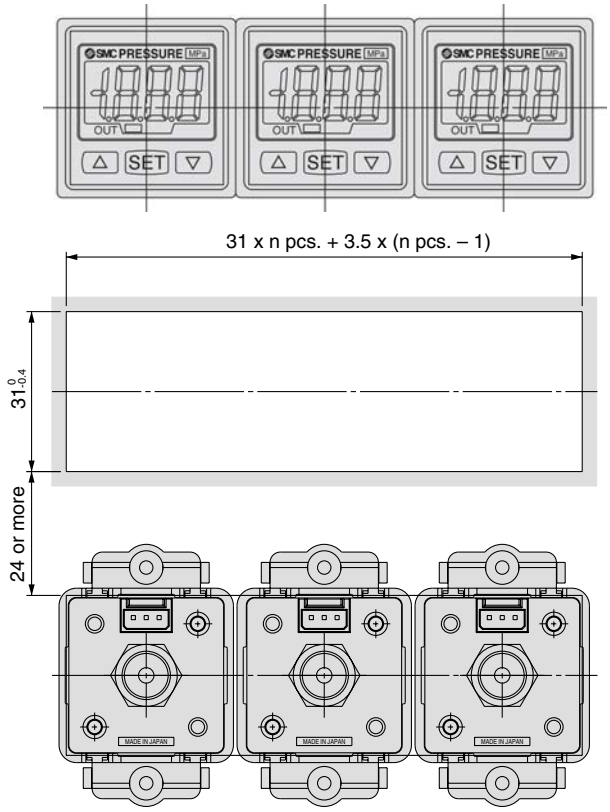
Dimensions

Panel fitting dimension

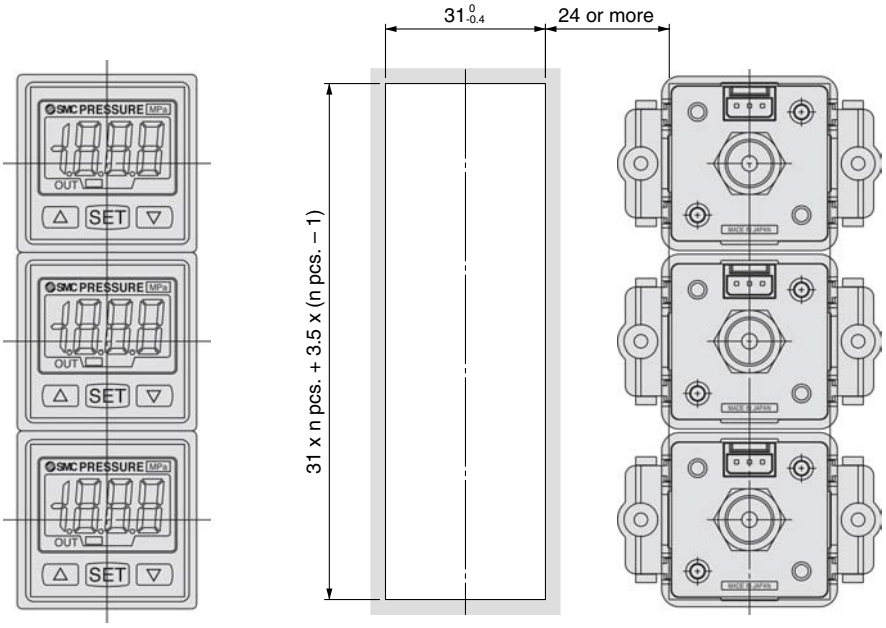
1 pc. mounting



Multiple (2 pcs. or more) horizontal mounting



Multiple (2 pcs. or more) vertical mounting



Specific Product Precautions

Be sure to read before handling.

Handling

⚠ Warning

1. **Do not drop, bump or apply excessive impacts (980m/s^2) while handling. Although the body of the sensor may not be damaged, the internal parts of the sensor could be damaged and lead to a malfunction.**
2. **The tensile strength of the cord is 35 N. Applying a greater pulling force on it can cause a malfunction. When handling, hold the body of the sensor.**
3. **Do not exceed the screw-in torque of 7 to 9 N·m when installing piping. Exceeding this value may cause malfunctioning of the sensor.**
4. **Do not use pressure sensors with corrosive and/or flammable gases or liquids.**
5. **Allow a sufficient margin of tube length in piping in order to prevent application of torsional, tensile or moment load to the tube and fittings.**
6. **When a brand of tubing other than SMC is used, make sure that the tolerance of the tube's O.D. satisfies the following specifications.**
   1) Nylon tubing : ±0.1 mm or less
   2) Soft nylon tubing : ±0.1 mm or less
   3) Polyurethane tubing : ±0.15 mm or less, –0.2 mm or less
7. **The applicable fluid is air. Please consult with SMC if the switch is to be used with other types of fluids.**

Connection

⚠ Warning

1. **Incorrect wiring can damage the switch and cause a malfunction or erroneous switch output. Connections should be done while the power is turned off.**
2. **Do not attempt to insert or pull the pressure sensor or its connector when the power is on. A switch output malfunction may occur.**
3. **Wire separately from power lines and high voltage lines, avoiding wiring in the same conduit with these lines. Malfunctions may occur due to noise from these other lines.**
4. **If a commercial switching regulator is used, make sure that the F.G.terminal is grounded.**

Operating environment

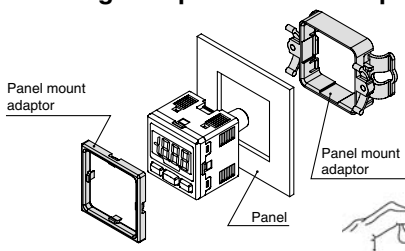
⚠ Warning

1. **Our pressure switches are CE marked; however, they are not equipped with surge protection against lightning. Lightening surge countermeasures should be applied directly to system components as necessary.**
2. **Our pressure switches do not have an explosion proof rating. Never use in the presence of a flammable gas or an explosive gas as this may cause a serious explosion.**
3. **Do not use in an environment where static electricity can cause problems, otherwise system failure or malfunction may result.**

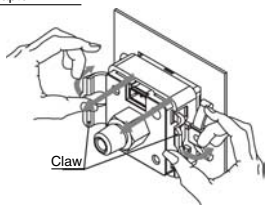
Mounting

⚠ Caution

1. Mounting with panel mount adaptor

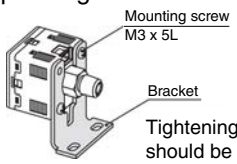


To release, push the clips outward as shown on the picture, and pull back towards you.



2. Mounting with bracket

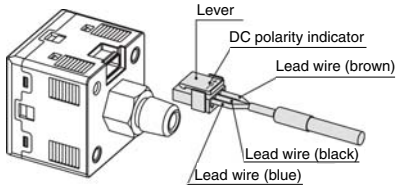
Mount a bracket to the body using two M3 x 5L mounting screws and install on piping with hexagon socket head cap screws. The switch can be installed horizontally depending on the installation location.



Tightening torque for bracket mounting screw should be 0.5 to 0.7 N·m.

Connection / Removal of connector

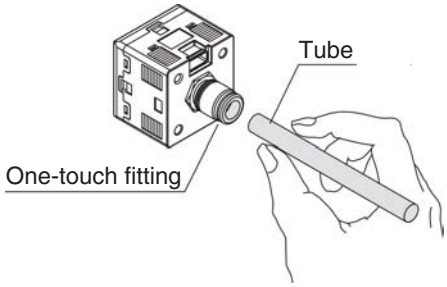
- To connect the connector, insert it straight while pinching the lever, and then push the lever into the jack of the housing and lock it.
- To remove the connector, pull it straight out while applying pressure with your thumb to the lever and unhooking it from the jack.



- Do not attempt to insert or pull the pressure sensor or its connector when the power is on. A switch output malfunction may occur.

Piping

- Cut the tube perpendicularly.
- Hold the tube and insert it into the One-touch fitting carefully and securely all the way to the bottom.



Precautions

Be sure to read before handling.

Regulating Pressure Range & Rated Pressure Range

⚠ Caution

Set the pressure within the rated pressure range.

The regulating pressure range is the range of pressure that is possible in setting.
The rated pressure range is the range of pressure that satisfies the specifications (accuracy, linearity, etc.) on the sensor.
Although it is possible to set a value outside the rated pressure range, the specifications will not be guaranteed even if the value stays within the regulating pressure range.

Switch		Pressure range
		–100kPa 0 100kPa 500kPa 1MPa
For vacuum/ low pressure	**10-ZSE30**	–100kPa 100kPa –101kPa 101kPa
For positive pressure	**10-ISE30**	0 1MPa –100kPa (–0.1MPa) 1MPa