

Series 10-ZSE40/ISE40 High-precision Digital Pressure Switch

How to Order

Regulating pressure range

Nil	-0.100 to 1.000 MPa	For positive pressure
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For positive pressure 10 — ISE40 — 01 — 22 — — M —

For vacuum/compound pressure 10 — ZSE40 — — 01 — 22 — — M —

Clean series

Regulating pressure range

Nil	10.0 to -101.3 kPa	For vacuum
F	-100.0 to 100.0 kPa	For compound pressure

Piping specification

01: R1/8 (With M5 female thread)
T1: NPT1/8 (With M5 female thread)

R1/8, NPT1/8
M5 x 0.8 female threads

C4*: One-touch fitting for ø4
C6*: One-touch fitting for ø6

Wall mount

ø4, ø6
One-touch fitting

W1: Rc1/8
WF1*: G1/8

Piping in 2 directions

Rc1/8, G1/8
Rc1/8, G1/8

M5*: M5 x 0.8 (female thread)

Wall mount

M5 x 0.8

* Option

Piping specifications / Combination of options available

Description	Symbol	Piping specification							
		01	T1	W1	WF1	C4	C6	M5	
Bracket A	A	○	○	○	○	×	×	×	
Bracket B	B	×	×	○	○	×	×	×	
Bracket D	D	○	○	○	○	×	×	×	
Panel mount	E	○	○	○	○	○	○	○	
Panel mount + Front protective cover	F	○	○	○	○	○	○	○	

○: Combination available ×: Combination not available

Input / Output specifications

22	NPN open collector 2 outputs + analog output
30	NPN open collector 2 outputs + auto shift input
62*	PNP open collector 2 outputs + analog output
70*	PNP open collector 2 outputs + auto shift input

* Option

Note
With auto shift function, allowable setting range is as follows:

Set pressure range	Regulating pressure range
-100.0 to 100.0kPa	-100.0 to 100.0 kPa
10.0 to -101.3 kPa	-101.3 to 101.3 kPa
-0.1 to 1.000 MPa	-1.000 to 1.000 MPa

Options

Nil	None
A	Bracket A (10-ZS-24-A)
B	Bracket B (10-ZS-24-B)
D	Bracket D (10-ZS-24-D) Please confirm the dimensions.
E	Panel mount (10-ZS-22-A)
F	Panel mount + Front protective cover (10-ZS-24-C)

* When optional parts are required, please place an order with the part number in parentheses.

Unit specification

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

Note 1) The new Weight and Measure Act does not allow use of a product with the unit display switching function in Japan.

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

Lead wire length

Nil	0.6m
L	3m

⚠ Caution

This product is Series 10-ZSE40/ISE40 blown with air and double packed in a Class M3.5 (ISO Class 5) clean room.

Specifications

		10-ZSE40F (Compound pressure)	10-ZSE40 (Vacuum pressure)	10-ISE40 (Positive pressure)
Rated pressure range		−100.0 to 100.0kPa	0.0 to −101.3kPa	0.000 to 1.000MPa
Set pressure range		−100.0 to 100.0kPa	10.0 to −101.3kPa	−0.100 to 1.000MPa
Proof pressure		500kPa		1.5MPa
Set pressure resolution	kPa	0.1		—
	MPa	—		0.001
Applicable fluid		Air, Non-corrosive / Non-flammable gas		
Power supply voltage		12 to 24 VDC, Ripple (p-p) 10% or less (with reverse connection protection)		
Current consumption		55 mA or less		
Switch output		NPN or PNP open collector output: 2 outputs		
	Maximum load current	80mA		
	Maximum applied voltage	30V (with NPN output)		
	Residual voltage	1 V or less (with 80 mA load current)		
	Response time	2.5 ms or less (with anti-chattering function: 24 ms, 192 ms and 768 ms selections)		
	Short circuit protection	With short circuit protection		
Repeatability		±0.2% F.S. ±1digit or less		
Hysteresis	Hysteresis mode	Variable (can be set from 0)		
	Window comparator mode	Fixed (3 digits)		
Display		3 1/2- digit, 7-segment indicator (Sampling cycle: 5 times/s)		
Display accuracy		±2% F.S. ±1 digit or less (at operating temperature of 25°C)		
Indicator light		OUT1: Lights up when ON (Green), OUT2: Lights when ON (Red)		
Analog output ^{Note 1)}		Output voltage: 1 to 5 V ±5% F.S. or less (with rated pressure range) Linearity: ±1%F.S. or less Output impedance: Approx. 1kΩ	Output voltage: 1 to 5 V ±2.5% F.S. or less (in rated pressure range) Linearity: ±1%F.S. or less Output impedance: Approx. 1 kΩ	
Auto shift input ^{Note 2)}		No-voltage input (reed or solid state), input 5 ms or more		
Environmental resistance	Enclosure	IP65		
	Ambient temperature	Operating: 0 to 50°C, Stored: -10 to 60°C (no condensation or freezing)		
	Ambient humidity	Operating/Stored: 35 to 85%RH (no condensation)		
	Withstand voltage	1000 VAC for 1 min between lead wires and body		
	Insulation resistance	50 MΩ or more (measured by 500 VDC mega meter) between lead wires and body		
	Vibration resistance	10 to 500 Hz at the smaller of amplitude 1.5 mm or acceleration 98 m/s ² in X, Y, Z directions for 2 hours each (de-energized)		
Impact resistance		980 m/s ² in X, Y, Z directions 3 times each (de-energized)		
Temperature characteristics		±2% F.S. or less (based at 25°C)		
Port size		O1: R1/8,M5 x 0.8 T1: NPT1/8,M5 x 0.8 W1: Rc1/8 C4: with ø4 one-touch fitting C6: with ø6 one-touch fitting M5: M5 female thread		
Lead wire		5-wire oil resistant vinyl cabtire cable (0.15 mm ²)		
Weight		O1/T1 types: Approx. 60 g, W1 type: Approx. 80 g, C4/C6/M5 types: Approx. 92 g (each including 0.6 m lead wires)		
Particle generation grade (Please refer to front matters 13 to 22 for details.)		Grade 2		

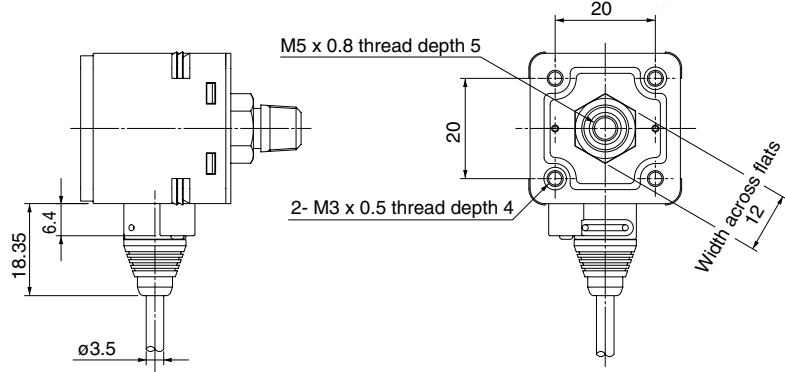
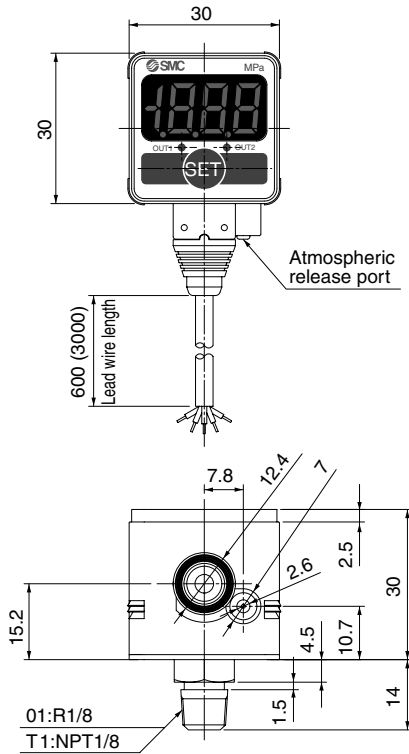
Note 1) For 10-ZSE40F/ZSE40/ISE40-□-²²/₆₂
Note 2) For 10-ZSE40F/ZSE40/ISE40-□-³⁰/₇₀

Note
When equipped with auto shift function, the following ranges can be set.

Model	Set pressure range
10-ZSE40F-□- ³⁰ / ₇₀	−100.0 to 100.0kPa
10-ZSE40-□- ³⁰ / ₇₀	−101.3 to 101.3kPa
10-ISE40-□- ³⁰ / ₇₀	−1.000 to 1.000MPa

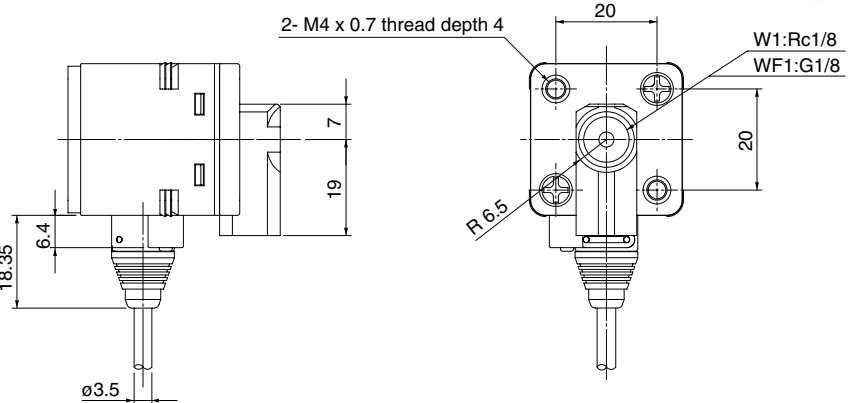
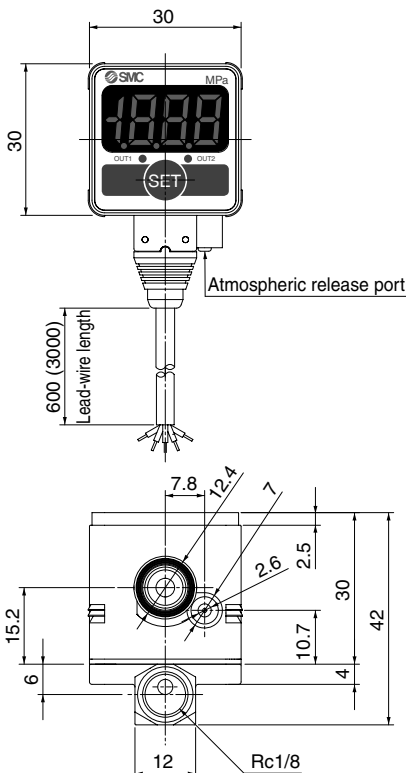
Dimensions

10-ZSE40(F)/ISE40-⁰¹_{T1}



* In waterproof (IP65) operation, insert the air tube into the atmospheric release port.
(For details, refer to Specific Product Precautions 4)

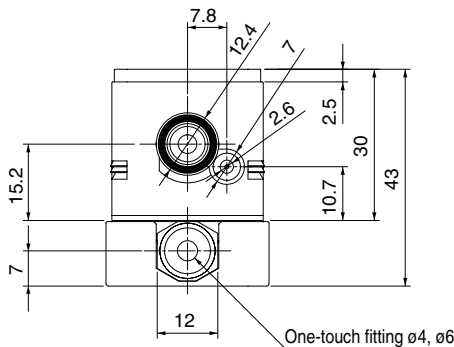
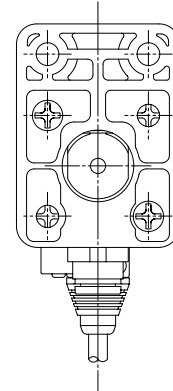
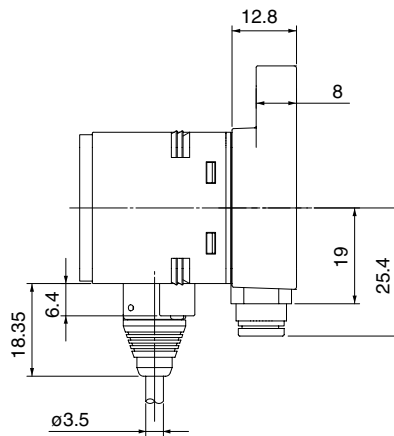
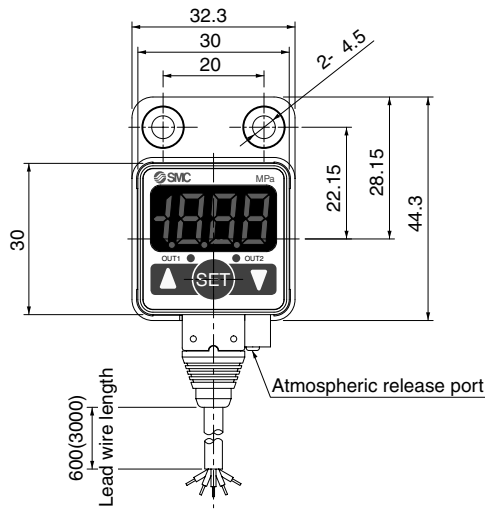
10-ZSE40(F)/ISE40-^{W1}_{WF1}



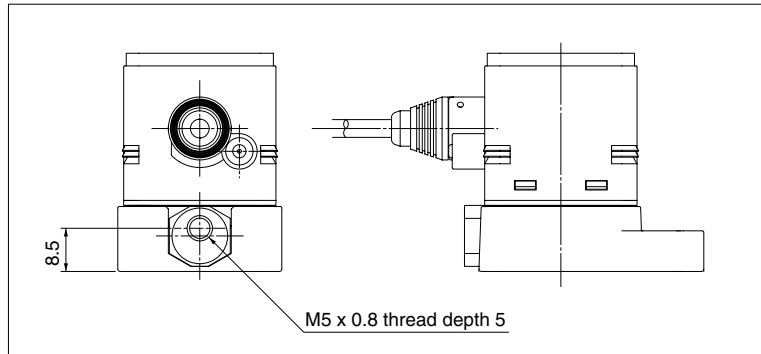
* In waterproof (IP65) operation, insert the air tube into the atmospheric release port.
(For details, refer to Specific Product Precautions 4)

Dimensions

10-ZSE40(F)/ISE40- C4
C6
M5



-With M5

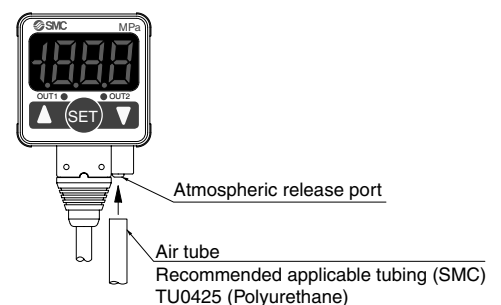


* In waterproof (IP65) operation, insert the air tube into the atmospheric release port.
(Refer to Specific Product Precautions 4, for more information)

⚠ Specific Product Precautions

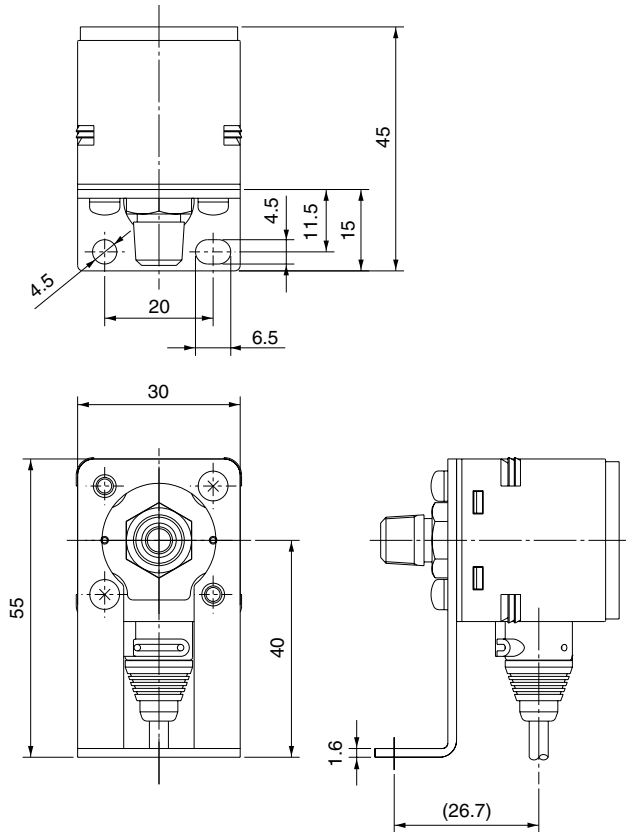
⚠ Caution

1. A drift of approx. $\pm 0.5\%$ F.S. immediately follows the initial power supply. When operating with a subtle or small pressure, take 20 to 30 minutes for a warm-up.
2. Do not use in an environment where liquid containing oil or solvents splashes onto the equipment.
3. When using a switching regulator purchased on the market, be sure to ground the FG terminal.
4. In an environment where the switch is exposed to water or dust, prevent water or dust invasion through the atmospheric release port. Insert a tube (of $\phi 2.5$ I.D.) into the atmospheric release port and connect the other end of the tube in a safe location with no water splashes or dust turbulence. To ensure accuracy in pressure measurement, do not fold or plug the tube.
5. This product is equivalent to Series ZSE40(F)/ISE40 but is blown with air and double packed in a Class 100 clean room.

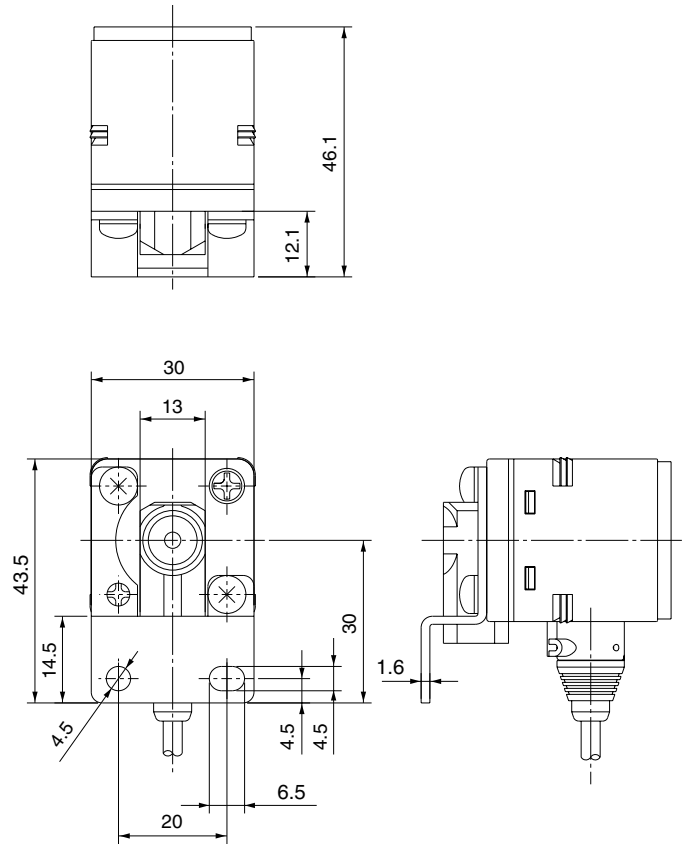


Dimensions

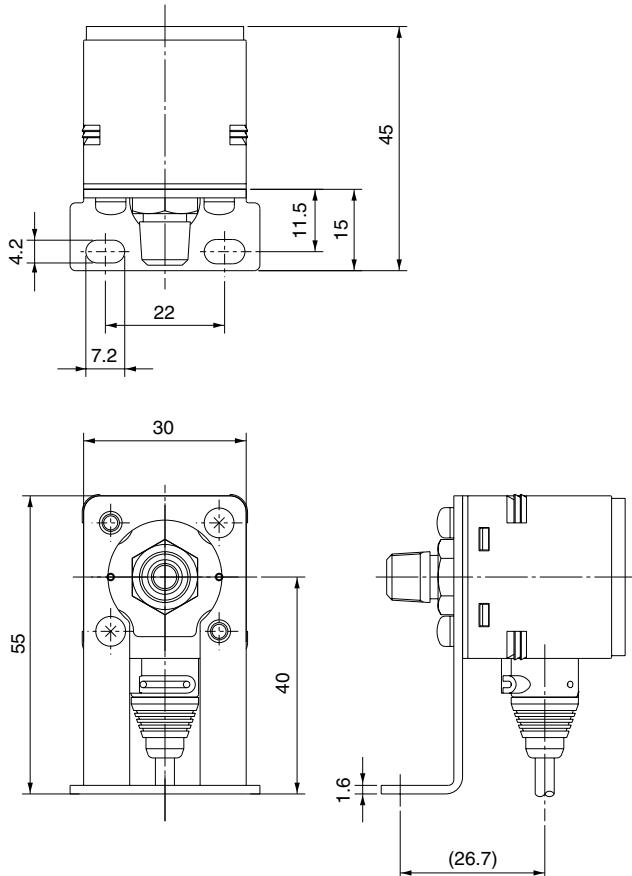
With Bracket A (10-ZS-24-A)



With Bracket B (10-ZS-24-B)



With Bracket D (10-ZS-24-D)



Air cylinder

Rotary actuator

Air gripper

Directional control valve

Flow control equipment

Filter, Pressure control equipment

Fittings & Tubing

Air preparation equipment

Pressure switch

Clean gas filter