

High-Precision Digital Pressure Switch: For General Fluids

ISE70G/75G/76G/77G Series

How to Order



ISE70G - 02 - L2 - M

Pressure range

Symbol	Description
ISE70G	0 to 1 MPa
ISE75G	0 to 2 MPa
ISE76G	0 to 5 MPa
ISE77G	0 to 10 MPa

Piping specification

Symbol	Description
02	Rc1/4
N02	NPT1/4
F02	G1/4*1

*1 ISO 1179-1 compliant

Orifice

Symbol	Description
Nil	None
T	Yes*1

*1 Orifice is shipped together with the product.

Output specification*1

Symbol	Description
L2	IO-Link: Switch output 1 + Switch output 2 (Switch output: NPN or PNP switching type)

*1 Refer to pages 9 and 10 for details.

Unit specification

Symbol	Description
Nil	Unit selection function*1
M	SI unit only*2

*1 Under the New Measurement Act, switches with the unit selection function are not permitted for use in Japan.

*2 Fixed unit: MPa, kPa

Option 3

Symbol	Description
Nil	Operation manual
Y	None
K	Operation manual + Calibration certificate
T	Calibration certificate

Option 2

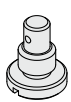
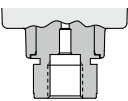
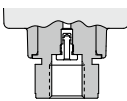
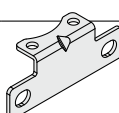
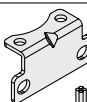

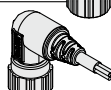
Symbol	Description
Nil	None
A	Bracket A (Interchangeable with ISE75(H))
B	Bracket B

Option 1

Symbol	Description
Nil	None
S	Lead wire with M12 connector (Straight, 5 m)
L	Lead wire with M12 connector (Right-angled, 5 m)

Options/Part Nos.

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

Description	Part no.	Note
Orifice 	ZS-48-A	 Without orifice  With orifice
Bracket A 	ZS-50-A	Interchangeable with ISE75(H) With 2 mounting screws (M4 x 6L)
Bracket B 	ZS-50-B	With 2 mounting screws (M4 x 6L)
Lead wire with M12 connector: Straight 	ZS-31-B	Lead wire length: 5 m
Lead wire with M12 connector: Right-angled 	ZS-31-C	Lead wire length: 5 m

ISE70G/75G/76G/77G Series

For pressure switch precautions and specific product precautions, refer to the "Operation Manual" on the SMC website.

Specifications

Model			ISE70G	ISE75G	ISE76G	ISE77G
Applicable fluid			Liquid or gas that will not corrode materials of parts in contact with fluid			
Pressure	Rated pressure range		0 to 1.000 MPa	0 to 2.000 MPa	0 to 5.00 MPa	0 to 10.00 MPa
	Display/Set pressure range		−0.105 to 1.050 MPa	−0.105 to 2.100 MPa	−0.25 to 5.25 MPa	−0.50 to 10.50 MPa
	Display/Smallest settable increment		0.001 MPa	0.001 MPa	0.01 MPa	0.01 MPa
	Withstand pressure		3.0 MPa	5.0 MPa	12.5 MPa	30 MPa
Power supply	Power supply voltage	When used as a switch output device	12 to 24 VDC ±10% with 10% voltage ripple or less			
		When used as an IO-Link device	18 to 30 VDC, including ripple (p-p) 10%			
	Current consumption		35 mA or less			
	Protection		Polarity protection			
Accuracy	Display accuracy		±2% F.S. ±1 digit (Ambient temperature of 25 ±3°C)			
	Repeatability		±0.5% F.S.			
	Temperature characteristics (25°C standard)		±3% F.S.	±5% F.S.		
Switch output (SIO mode)	Output type		Select from NPN or PNP open collector output.			
	Output mode		Hysteresis, Window comparator, Error output, Output OFF			
	Switch operation		Normal output, Reversed output			
	Maximum load current		80 mA			
	Maximum applied voltage		30 V (NPN output)			
	Internal voltage drop (Residual voltage)		1.5 V or less (at load current of 80 mA)			
	Delay time*1		2 ms or less, variable from 0 to 60 s/0.01 s increments			
	Hysteresis	Hysteresis mode	Variable from 0*2			
		Window comparator mode				
Short circuit protection		Yes				
Display	Unit*3		MPa, kPa, kgf/cm², bar, psi			
	Display type		LCD			
	Number of screens		3-screen display (Main screen, Sub screen x 2)			
	Display color		Main screen: Red/Green, Sub screen: Orange			
	Number of display digits		Main screen: 4 digits (7 segments), Sub screen: 4 digits (Upper 1 digit 11 segments, 7 segments for other)			
	Indicator light		Lights up when switch output is turned ON (OUT1, OUT2: Orange)			
Digital filter*4			Variable from 0 to 30 s/0.01 s increments			
Environment	Enclosure		IP67			
	Withstand voltage		500 VAC for 1 minute between terminals and housing			
	Insulation resistance		50 MΩ or more (500 VDC measured via megohmmeter) between terminals and housing			
	Operating temperature range		Operating: −5 to 50°C, Stored: −10 to 60°C (No condensation or freezing)			
	Operating humidity range		Operating/Stored: 35 to 85% RH (No condensation)			
Standards			UL/CSA (E216656), CE, RoHS			
Piping	Port size		Rc1/4, NPT1/4, G1/4			
	Materials of parts in contact with fluid		Sensor pressure receiving area: Al2O3 (Alumina 96%), Piping port: C3604 (Electroless nickel plating), O-ring: FKM + Grease (1 MPa), Square ring: FKM (2, 5, 10 MPa)			
Weight	Body	Port size Rc1/4	184 g			
		Port size NPT1/4	183 g			
		Port size G1/4	181 g			
	Option	Lead wire with connector	139 g			
		Bracket A	17.7 g			
		Bracket B	14.2 g			
		Orifice	1.2 g			
Communication (IO-Link mode)	IO-Link type		Device			
	IO-Link version		V1.1			
	Communication speed		COM2 (38.4 kbps)			
	Configuration file		IODD file*5			
	Minimum cycle time		2.3 ms			
	Process data length		Input data: 2 bytes, Output data: 0 byte			
	On request data communication		Yes			
	Data storage function		Yes			
	Event function		Yes			
	Vendor ID		131 (0 x 0083)			

*1 Value without digital filter (at 0 ms)

*2 If the applied pressure fluctuates around the set value, the hysteresis must be set to a value more than the amount of fluctuation, or chattering will occur.

*3 Setting is only possible for models with the unit selection function. For models without this function, only MPa or kPa is available for the ISE70G/ISE75G, and only MPa is available for the ISE76G/ISE77G.

*4 The response time indicates when the set value is 90% in relation to the step input.

*5 The configuration file can be downloaded from the SMC website, <http://www.smcworld.com>

* Products with tiny scratches, marks, or display color or brightness variations which do not affect the performance of the product are verified as conforming products.