

2-Color Display High-Precision Digital Pressure Switch

Series ZSE30A(F)/ISE30A



How to Order

For positive pressure

For vacuum/
compound pressure

Rated pressure range

ISE30A -0.1 to 1 MPa

Rated pressure range

ZSE30A 0 to -101 kPa

ZSE30AF -100 to 100 kPa

Piping

01	R1/8 (M5 female threaded)	
N01*	NPT1/8 (M5 female threaded)	
C4H	One-touch fitting ø4 mm, ø5/32 inch	
C6H	One-touch fitting ø6 mm	
N7H	One-touch fitting ø1/4 inch	
C4L	One-touch fitting ø4 mm, ø5/32 inch	
C6L	One-touch fitting ø6 mm	
N7L	One-touch fitting ø1/4 inch	

* Made to Order

Display unit

Nil	With unit display Note 1) switching function
M	Fixed SI unit Note 2)
P*	With unit display Note 1) switching function (Initial value psi)

* Made to Order

Note 1) Under the New Measurement Law, sales of switches with the unit switching function have not been allowed for use in Japan.

Note 2) Fixed unit kPa, MPa

Option 1

Nil	Without lead wire	
L	Lead wire with connector (Lead wire length 2 m) Note)	
G	Lead wire with connector (Lead wire length 2 m) Note) 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.

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*	NPN open collector 1 output + Analog voltage output
D*	NPN open collector 1 output + Analog current output
E*	PNP open collector 1 output + Analog voltage output
F*	PNP open collector 1 output + Analog current output

* Made to Order

Made to Order (P.12)

X510 For M12 4-pin pre-wired connector

Available only for output "A" or "B".

Option 3

Symbol	Operating manual Booklet	Calibration certificate
Nil	☐	☐
Y	☐	☐
K	☐	☐
T	☐	☐

Option 2

Nil	None
A1	Bracket A
A2	Bracket B
A3	Bracket C
B	Panel mount adapter
D	Panel mount adapter + Front protection cover

Series ZSE30A(F)/ISE30A

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
Set pressure range		10.0 to −105.0 kPa	−105.0 to 105.0 kPa	−0.105 to 1.050 MPa
Withstand pressure		500 kPa	500 kPa	1.5 MPa
Minimum unit setting		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 ±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)		
	Maximum load current	80 mA		
	Maximum applied voltage	28 V (at 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	Yes		
Repeatability		±0.2% F.S. ±1 digit		
Hysteresis	Hysteresis mode	Variable (0 or above) ^{Note 1)}		
	Window comparator mode			
Analog output	^{Note 2)} Voltage output	Output voltage (Rated pressure range)	1 to 5V ±2.5% F.S.	0.6 to 5 V ±2.5% F.S.
		Linearity	±1% F.S. or less	
		Output impedance	Approx. 1 kΩ	
	^{Note 3)} Current output	Output current (Rated pressure range)	4 to 20 mA ±2.5% F.S.	2.4 to 20 mA ±2.5% F.S.
		Linearity	±1% F.S. or less	
	Load impedance	Maximum load impedance: Power supply voltage 12 V: 300 Ω, Power supply voltage 24 V: 600 Ω Minimum load impedance: 50 Ω		
Display		4-digit, 7-segment, 2-color LCD (Red/Green)		
Display accuracy		±2% F.S. ±1 digit (Ambient temperature of 25 ±3°C)		
Indicator light		Lights up when switch output is turned ON. OUT1: Green, OUT2: Red		
Environment resistance	Enclosure	IP40		
	Operating temperature range	Operating: 0 to 50°C, Stored: −10 to 60°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 case		
	Insulation resistance	50 MΩ or more between live parts and case (at 500 VDC Mega)		
	Vibration resistance	10 to 150 Hz at whichever is smaller of 1.5 mm amplitude or 20 m/s ² acceleration, in X, Y, Z directions, for 2 hours each (Non-energized)		
	Impact resistance	100 m/s ² in X, Y, Z directions, 3 times each (Non-energized)		
Temperature characteristics		±2% F.S. (Based on 25°C)		
Lead wire		Oilproof heavy-duty vinyl cable, 3 cores ø3.5, 2 m 4 cores Conductor area: 0.15 mm ² (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 analog voltage output is selected, analog current output cannot be used together.

Note 3) When analog current output is selected, analog voltage output cannot be used together.

Piping Specifications

Model	01	N01	C4H	C6H	N7H	C4L	C6L	N7L
Port size	R1/8 M5 x 0.8	NPT1/8 M5 x 0.8	—	—	—	—	—	—
One-touch fitting, Straight type	—	—	$\phi 4$ mm $\phi 5/32$ inch	$\phi 6$ mm	$\phi 1/4$ inch	—	—	—
One-touch fitting, Elbow type	—	—	—	—	—	$\phi 4$ mm $\phi 5/32$ inch	$\phi 6$ mm	$\phi 1/4$ inch
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	73 g	75 g	73 g	75 g
	Including lead wire with connector (4 cores, 2 m)	85 g	74 g	75 g	77 g	79 g	77 g	79 g
	Excluding lead wire with connector	43 g	32 g	33 g	35 g	37 g	35 g	37 g

Optional Part No.

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

Part no.	Option	Note	Part no.	Option	Note
ZS-38-A1	Bracket A	Mounting screw (with 2 pcs. of M3 x 5L)	ZS-38-4G	Lead wire with connector (with connector cover)	4 cores, for 2 outputs, 2 m
ZS-38-A2	Bracket B	Mounting screw (with 2 pcs. of M3 x 5L)	ZS-38-5L	Lead wire with a connector for copying	3 cores, copy function, 1 m
ZS-38-A3	Bracket C	Mounting screw (with 2 pcs. of M3 x 5L)	ZS-38-U	Lead wire unit with a connector for copying	Copy function (up to 10 slaves)
ZS-27-C	Panel mount adapter	Mounting screw (with 2 pcs. of M3 x 8L)	ZS-38-C4H	One-touch fittings $\phi 4$ mm straight	O-ring, one-touch clip included
ZS-27-D	Panel mount adapter + Front protection cover	Mounting screw (with 2 pcs. of M3 x 8L)	ZS-38-C6H	One-touch fittings $\phi 6$ mm straight	O-ring, one-touch clip included
ZS-27-01	Front protection cover		ZS-38-N7H	One-touch fittings $\phi 1/4$ inch straight	O-ring, one-touch clip included
ZS-38-3L	Lead wire with connector	3 cores, for 1 output, 2 m	ZS-38-C4L	One-touch fittings $\phi 4$ mm elbow	O-ring, one-touch clip included
ZS-38-4L	Lead wire with connector	4 cores, for 2 outputs, 2 m	ZS-38-C6L	One-touch fittings $\phi 6$ mm elbow	O-ring, one-touch clip included
ZS-38-3G	Lead wire with connector (with connector cover)	3 cores, for 1 output, 2 m	ZS-38-N7L	One-touch fittings $\phi 1/4$ inch elbow	O-ring, one-touch clip included