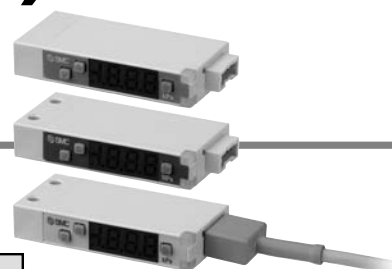


# Digital Pressure Switch

# Series ZSE10(F)/ISE10

## How to Order



For positive pressure

ISE10 - M5 - A - M

For vacuum/  
compound pressure

ZSE10 - M5 - B - M

Rated pressure range  
ISE10 -0.100 to 1.000 MPa

Rated pressure range  
ZSE10 0.0 to -101.0 kPa  
ZSE10F -100.0 to 100 kPa

### Piping specifications

M5	M5 female thread/Side ported Piping port
M5R	M5 female thread/Rear ported Piping port
01*	R1/8/Side ported R1/8 Piping adapter
N01*	NPT1/8/Side ported NPT1/8 Piping adapter

\* Made to Order

### Output specifications

A	NPN open collector 2 outputs
B	PNP open collector 2 outputs
C*	NPN open collector 1 output + Analog voltage
E*	PNP open collector 1 output + Analog voltage

\* Made to Order

### Unit specifications

Nil	With unit switching function <sup>Note 1)</sup>
M	Fixed SI unit <sup>Note 2)</sup>
P	With unit switching function <sup>Note 1)</sup> (Initial value psi)

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

Note 2) Fixed unit:  
For vacuum/compound pressure: kPa  
For positive pressure: MPa

Option 3

Symbol	Calibration certificate
Nil	—
K	○

### Option 2

Nil	None
D <sup>Note 3)</sup>	Panel mount adapter + Front protective cover
R <sup>Note 4)</sup>	DIN rail adapter <sup>Note 5)</sup>

Note 3) Not available for piping specifications of 01 and N01.  
Note 4) Not available for piping specifications of M5R, 01 and N01.  
Note 5) The DIN rail needs to be prepared by the customer.

### Option 1

Nil	Without lead wire
G	Lead wire with connector (Lead wire length: 2 m) With connector cover

## Options/Part No.

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

Part no.	Option
ZS-39-5G	Lead wire with connector (with connector cover) (5 cores, 2 m)
ZS-39-B	Panel mount adapter
ZS-39-D	Panel mount adapter + Front protective cover
ZS-39-R	DIN rail adapter

Part no.	Option
ZS-39-01	Front protective cover
ZS-39-N1*	R1/8 piping adapter
ZS-39-N2*	NPT1/8 piping adapter

\* Made to Order

# Series ZSE10(F)/ISE10

## Specifications

Model			ZSE10 (vacuum pressure)	ZSE10F (compound pressure)	ISE10 (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/Pressure display 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
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 2 outputs (Selectable)		
	Maximum load current		80 mA		
	Maximum applied voltage		28 V (With NPN output)		
	Residual voltage		2 V or less (With load current of 80 mA)		
	Response time		2.5 ms or less (Response time selections with anti-chattering function: 20, 100, 500, 1000, 2000 ms)		
	Short circuit protection		Yes		
Repeat accuracy			±0.2% F.S. ±1 digit		
Hysteresis	Hysteresis mode		Variable (0 or above) <sup>Note)</sup>		
	Window comparator mode				
Analog output	Voltage output	Output voltage (Rated pressure range)	1 to 5 V ±2.5% F.S.		0.6 to 5 V ±2.5% F.S.
		Linearity	±1% F.S. or less		
		Output impedance	Approx. 1 kΩ		
Display			3 1/2 digit, 7-segment indicator, 1-color display (Red)		
Display accuracy			±2% F.S. ±1 digit (at 25°C ±3°C ambient temperature)		
Indicator light			Lights up when output is turned ON. OUT1: Green OUT2: Red		
Environmental resistance	Enclosure		IP40		
	Operating temperature range		Operating: −5 to 50°C, Stored: −10 to 60°C (No freezing or condensation)		
	Operating humidity range		Operating and stored: 35 to 85% RH (No condensation)		
	Withstand voltage		1000 VAC for 1 min. between live parts and enclosure		
	Insulation resistance		50 MΩ or more between live parts and enclosure (at 500 VDC Mega)		
	Vibration resistance		10 to 150 Hz, at the smaller of amplitude 1.5 mm or 20 m/s <sup>2</sup> in X, Y, Z directions for 2 hours each (De-energized)		
Impact resistance			100 m/s <sup>2</sup> in X, Y, Z directions 3 times each (De-energized)		
Temperature characteristics			±2% F.S. (at 25°C in an operating range of −5 to 50°C)		
Lead wire			Oil-resistant vinyl cabtire cable 5 cores, Cross section: 0.15 mm <sup>2</sup> (AWG26) Insulator O.D.: 1.0 mm		
Standard			Compliant with CE Marking, UL (CSA) and RoHS compliant		

Note) If the applied voltage fluctuates around the set-value, the hysteresis must be set to a value more than the fluctuating width, otherwise chattering will occur.

## Piping Specifications

Model	M5	M5R	01	N01
Port size	M5 x 0.8 (Side ported)	M5 x 0.8 (Rear ported)	R1/8 (Side ported)	NPT1/8 (Side ported)
Wetted part material	Sensor pressure receiving area	Sensor pressure receiving area: Silicon		
	Piping port	C3604 (Electroless nickel plated) O-ring: HNBR		
Mass	With lead wire with connector (5 cores, 2 m)	55 g		63 g
	Without lead wire with connector	15 g		23 g

## Function (Details $\Rightarrow$ Pages 8 and 9)

Copy function	The settings of the master pressure switch can be copied to the slave pressure switches.
Auto-preset function	This function is to calculate a rough set value automatically based on the on-going operation.
Precision indicator setting function	The scattering of the indicated value can be eliminated.
Peak display function	Can retain the maximum pressure value displayed during measurement.
Bottom display function	Can retain the minimum pressure value displayed during measurement.
Key lock function (Selectable secret code)	Key operation can be locked to prevent any incorrect function of the operation switch.
Zero-clear function	The pressure display can be set at zero when the pressure is open to the atmosphere.
Anti-chattering function	Prevents possible malfunction due to sudden fluctuations in the primary pressure by adjusting the response time.
Display unit switching function	Can convert the display value.
Power-saving mode	Reduces power consumption.
Display resolution conversion function	Changes the display resolution from the default value 1000 to 100. The flickering on the display can be eliminated.
kPa $\Leftrightarrow$ MPa conversion function	The unit can be changed between kPa and MPa.