

2 Outputs + Analogue Output (Voltage/Current)

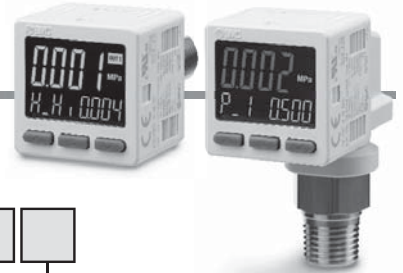


3-Screen Display High-Precision
Digital Pressure Switch For General Fluids

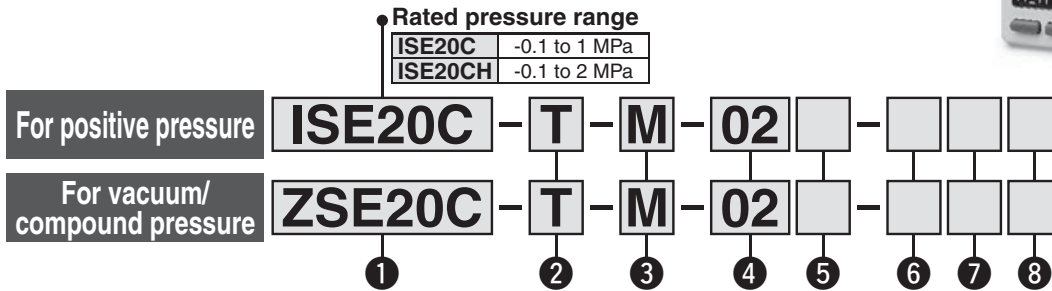
RoHS

IP65

ZSE20C(F)/ISE20C(H) Series



How to Order



1 Rated pressure range

ZSE20C	0 to -101 kPa
ZSE20CF	-100 to 100 kPa

2 Output specification

Symbol	Description
R	NPN open collector 2 outputs + Analogue voltage output*1
S	NPN open collector 2 outputs + Analogue current output*1
T	PNP open collector 2 outputs + Analogue voltage output*1
V	PNP open collector 2 outputs + Analogue current output*1
X	NPN open collector 2 outputs + Copy function
Y	PNP open collector 2 outputs + Copy function

*1 Can be switched to auto-shift or copy function

3 Unit specification

Symbol	Description
—	Unit selection function
M	SI unit only*2
P	Unit selection function (Initial value psi)*2

*2 Fixed unit: kPa, MPa

4 Piping specification

Symbol	Description
02	R1/4 (M5 female threaded)
N02	NPT1/4 (M5 female threaded)
F02	G1/4 (M5 female threaded)
C01	Rc1/8
A2	URJ1/4 (Face seal fitting)
B2	TSJ1/4 (Compression fitting)

7 Option 2

* Note that the optional parts that can be used vary depending on the piping direction.

Symbol	Description
—	None

Rear ported (5 Piping direction: —)

Symbol	Description	Symbol	Description
A1	Bracket A	B	Panel mount adapter
			ZS-46-B
D	Panel mount adapter + Front protection cover		ZS-46-D

5 Piping direction

—	Rear ported
L	Bottom ported

6 Option 1

Symbol	Description
—	Without lead wire
W	Lead wire with connector, 5-core (2 m lead wire, With waterproof cover)

Bottom ported (5 Piping direction: L)

Symbol	Description
A3	Bracket C
	ZS-46-E
E	Panel mount adapter
	ZS-35-B
F	Panel mount adapter + Front protection cover
	ZS-35-E

Options/Part Nos.

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

Description	Part no.	Note
Bracket A	ZS-46-A1	For rear ported/Tapping screw: Nominal size 3 x 8 L (2 pcs.)
Bracket C	ZS-46-E	For bottom ported/Tapping screw: Nominal size 3 x 10 L (2 pcs.)
Panel mount adapter	ZS-46-B	Rear ported
	ZS-35-B	Bottom ported
Panel mount adapter + Front protection cover	ZS-46-D	Rear ported
	ZS-35-E	Bottom ported
Lead wire with connector	ZS-46-5F	5-core, 2 m, Waterproof (With waterproof cover)
Front protection cover	ZS-27-01	Rear ported
	ZS-35-01	Bottom ported

8 Option 3

Symbol	Operation manual*4	Calibration certificate*4
—	○	—
Y	—	—
K	○	○
T	—	○

*4 All texts are in both English and Japanese.

3-Screen Display High-Precision Digital Pressure Switch For General Fluids **ZSE20C(F)/ISE20C(H) Series**

For details on the specific product precautions, refer to the "Operation Manual" on the SMC website.

Specifications

Model			ZSE20C (Vacuum pressure)	ZSE20CF (Compound pressure)	ISE20C (Positive pressure)	ISE20CH (Positive pressure)
Applicable fluid			Fluid that will not corrode stainless steel 630 and 304			
Pressure	Rated pressure range		0.0 to -101.0 kPa	-100.0 to 100.0 kPa	-0.100 to 1.000 MPa	-0.100 to 2.000 MPa
	Display/Set pressure range		10.0 to -105.0 kPa	-105.0 to 105.0 kPa	-0.105 to 1.050 MPa	-0.105 to 2.100 MPa
	Minimum display unit/Smallest settable increment		0.1 kPa		0.001 MPa	
	Withstand pressure		500 kPa		2 MPa	4 MPa
Power supply	Power supply voltage		12 to 24 VDC $\pm 10\%$, Ripple (p-p) 10 % or less			
	Current consumption		35 mA or less			
	Protection		Polarity protection			
Accuracy	Display accuracy		$\pm 2\%$ F.S. ± 1 digit (Ambient temperature of $25 \pm 3\text{ }^{\circ}\text{C}$)			
	Repeatability		$\pm 0.2\%$ F.S. ± 1 digit			
	Analogue output accuracy		$\pm 2.5\%$ F.S. (Ambient temperature of $25 \pm 3\text{ }^{\circ}\text{C}$)			
	Analogue output linearity		$\pm 1\%$ F.S.			
	Temperature characteristics		$\pm 3\%$ F.S. ($25\text{ }^{\circ}\text{C}$ standard)			
Switch output	Output type		NPN or PNP open collector 2 outputs			
	Output mode		Hysteresis mode, Window comparator mode, Error output, Output OFF			
	Switch operation		Normal output, Reversed output			
	Max. load current		80 mA			
	Max. applied voltage (NPN only)		28 V			
	Internal voltage drop (Residual voltage)		1 V or less (at load current of 80 mA)			
	Delay time*1		1.5 ms or less (with anti-chattering function: 20, 100, 500, 1000, 2000, 5000 ms)			
	Hysteresis	Hysteresis mode	Variable from 0*2			
		Window comparator mode				
	Short circuit protection		Yes			
Analogue output	Voltage output	Output type	Voltage output: 1 to 5 V		Voltage output: 0.6 to 5 V	Voltage output: 0.8 to 5 V
		Output impedance	Approx. 1 k Ω			
	Current output	Output type	Current output: 4 to 20 mA		Current output: 2.4 to 20 mA	Current output: 3.2 to 20 mA
		Load impedance	Maximum load impedance at power supply voltage of 12 V: 300 Ω at power supply voltage of 24 V: 600 Ω Minimum load impedance: 50 Ω			
Auto-shift input	Input type		Non-voltage input: 0.4 V or less			
	Input mode		Select from Auto-shift or Auto-shift zero.			
	Input time		5 ms or more			
Display	Unit*3		MPa, kPa, kgf/cm ² , bar, psi, InHg, mmHg		MPa, kPa, kgf/cm ² , bar, psi	
	Display type		LCD			
	Number of screens		3-screen display (Main screen, Sub screen x 2)			
	Display colour		1) Main screen: Red/Green 2) Sub screen: Orange			
	Number of display digits		1) Main screen: 4 digits (7 segments) 2) 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			0, 10, 50, 100, 500, 1000, 5000 ms			
Environment	Enclosure		IP65			
	Withstand voltage		250 VAC for 1 minute between terminals and housing			
	Insulation resistance		2 M Ω or more (50 VDC measured via megohmmeter) between terminals and housing			
	Operating temperature range		Operating: -5 to 50 $^{\circ}\text{C}$, Stored: -10 to 60 $^{\circ}\text{C}$ (No condensation or freezing)			
	Operating humidity range		Operating/Stored: 35 to 85 %RH (No condensation)			
Standards			UL/CSA (E216656), CE, RoHS			
Length of lead wire with connector			2 m			

*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. Only MPa or kPa is available for models without this function.

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

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

Piping Specifications and Weights

Model	02	N02	F02	C01	A2	B2
Port size	R1/4	NPT1/4	G1/4	Rc1/8	URJ1/4	TSJ1/4
Materials of parts in contact with fluid	Pressure sensor: Stainless steel 630, Fitting: Stainless steel 304					
Weight	Body (Rear ported)	51 g	51 g	48 g	47 g	54 g
	Body (Bottom ported)	77 g	78 g	74 g	65 g	81 g
	Lead wire with connector	+39 g				

Cable Specifications

Conductor area		0.15 mm ² (AWG26)
Insulator	O.D.	1.0 mm
	Colour	Brown, Blue, Black, White, Grey (5-core)
Sheath	Finished O.D.	$\varnothing 3.5$