

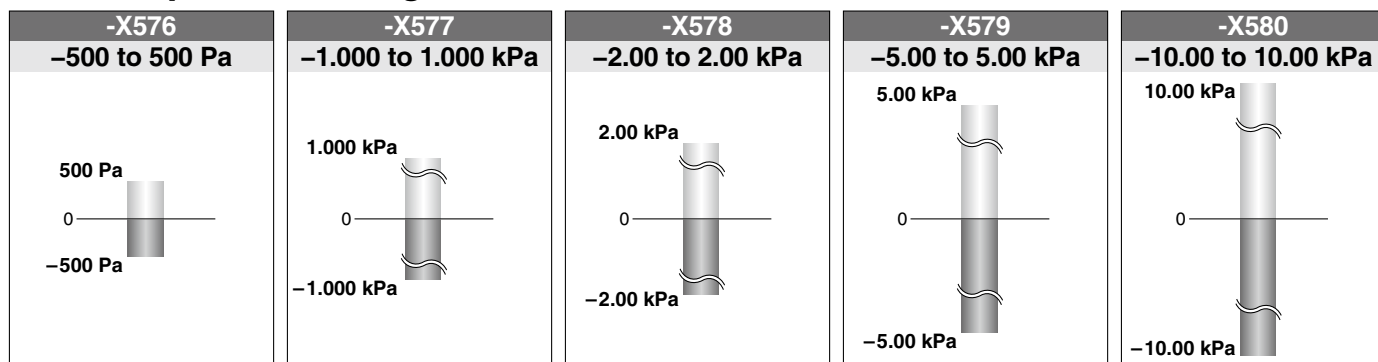
# 2-Color Display High-Precision Digital Pressure Switch (for Low Pressure)



Able to detect and display pressures of 10 kPa or less



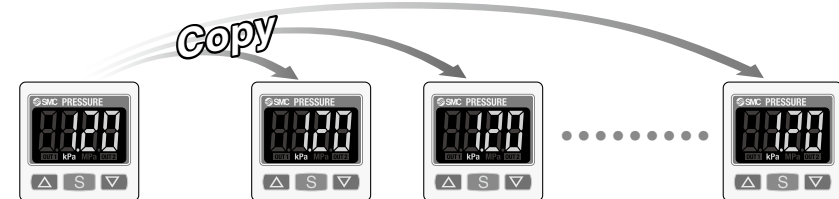
## ● Rated pressure range



## ● Can copy to up to 10 switches simultaneously

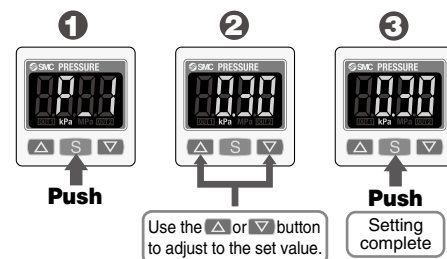
The set values of the sensor can be copied.

- Reduced setting time
- Minimized risk of setting mistakes



Copy source Copy destination → 1 unit 2 units 10 units  
The sensors can be connected by a dedicated lead wire (ZS-38-5L (for 1:1 copy) or ZS-38-U (for 1:10 copy)).

## ● 3-step setting



## ● With display low-cut function (zero-cut function)

"0" is displayed within the effective range.

Low-cut function "ON": 0 → 0 → 4 → ..... → 500 Pa

Low-cut function "OFF": 0 → 1 → 2 → 3 → 4 → ..... → 500 Pa

Model	Effective range
-X576	-3 Pa to 3 Pa
-X577	-0.005 kPa to 0.005 kPa
-X578	-0.01 kPa to 0.01 kPa
-X579	-0.03 kPa to 0.03 kPa
-X580	-0.05 kPa to 0.05 kPa

### Application Examples

Flow control

Can control air flow by monitoring the flow rate inside the duct

Liquid level detection

Can detect the liquid level through changes in the purge pressure

### Liquid Level Detection Range (for water)

Pressure range	Liquid level detection range	Minimum set value
±500 Pa	50 mm	0.1 mm
±1 kPa	100 mm	0.1 mm
±2 kPa	200 mm	1 mm
±5 kPa	500 mm	1 mm
±10 kPa	1000 mm	1 mm

# ZSE30AF-X576 to X580

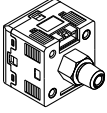


# ZSE30AF-X576 to X580

## How to Order

ZSE30AF - 01 - A - M - [ ] - [ ] - [ ] - [ ]

### Piping specification

01	R1/8 (M5 female threaded)	
N01	NPT1/8 (M5 female threaded)	

### Output specification

A	NPN open collector 2 outputs
B	PNP open collector 2 outputs
C	NPN open collector 1 output + Analog voltage
D	NPN open collector 1 output + Analog current

### Unit specification

Nil	With unit selection function*1
M	Fixed SI unit

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

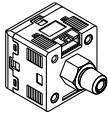
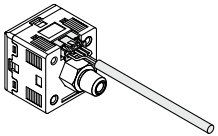
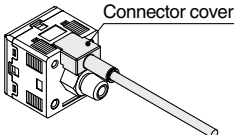
### Available Display Units \*1

Model	Rated	kPa	Pa	mbar	psi	inHg	mmHg	inH <sub>2</sub> O	mmH <sub>2</sub> O
-X576	±500 Pa	○	○*2	○	○	○	○	○	○
-X577	±1 kPa	○*2	○	○	○	○	○	○	○
-X578	±2 kPa	○*2	○	○	○	○	○	○	○
-X579	±5 kPa	○*2	×	○	○	○	○	○	○
-X580	±10 kPa	○*2	×	○	○	○	○	○	○

\*1 This setting is only available for models with the unit selection function.

\*2 Setting has been completed by the time of shipment from the factory.

### Option 1

Nil	Without lead wire	
L	Lead wire with connector (Lead wire length 2 m) *1	
G	Lead wire with connector (Lead wire length 2 m) *1 With connector cover	

\*1 4-core lead wires

### Made to order

Symbol	Rated pressure range
X576	-500 to 500 Pa
X577	-1.000 to 1.000 kPa
X578	-2.00 to 2.00 kPa
X579	-5.00 to 5.00 kPa
X580	-10.00 to 10.00 kPa

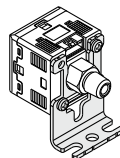
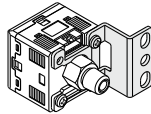
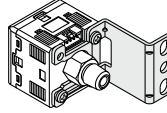
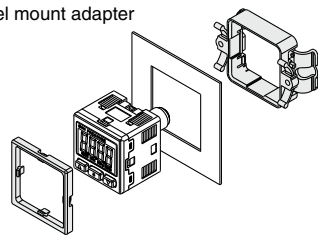
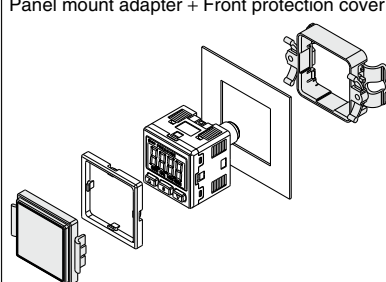
### Option 3

Symbol	Operation manual*1*2	Calibration certificate*2
Nil	○	—
Y	—	—
K	○	○
T	—	○

\*1 Provided with the operation manual of the standard product

\*2 All texts in both English and Japanese

### Option 2

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

# 2-Color Display High-Precision Digital Pressure Switch (for Low Pressure) **ZSE30AF-X576 to X580**

## Specifications

Model	-X576	-X577	-X578	-X579	-X580	
Rated pressure range	-500 to 500 Pa	-1.000 to 1.000 kPa	-2.00 to 2.00 kPa	-5.00 to 5.00 kPa	-10.00 to 10.00 kPa	
Set pressure range	-525 to 525 Pa	-1.050 to 1.050 kPa	-2.10 to 2.10 kPa	-5.25 to 5.25 kPa	-10.50 to 10.50 kPa	
Withstand pressure	2.5 kPa	5 kPa	10 kPa	25 kPa	50 kPa	
Smallest settable increment	1 Pa	0.001 kPa	0.01 kPa	0.01 kPa	0.01 kPa	
Applicable fluid	Air, Non-corrosive gas, Non-flammable gas					
Power supply voltage	12 to 24 VDC $\pm 10\%$ , Ripple (p-p) 10% or less					
Current consumption	40 mA or less					
Switch output	NPN or PNP open collector 1 output, NPN or PNP open collector 2 outputs					
Maximum load current	80 mA					
Maximum applied voltage	28 V (at NPN output)					
Residual voltage	1 V or less (with a load current of 80 mA)					
Delay time	4 ms or less*1 (with anti-chattering function: 20 ms, 100 ms, 500 ms, 1000 ms, 2000 ms, 10 s, 30 s, 60 s)					
Short circuit protection	Yes					
Repeatability	$\pm 1\%$ F.S. $\pm 1$ digit					
Hysteresis	Variable (0 or above)					
Hysteresis mode						
Window comparator mode						
Analog output	Voltage output *2	Output voltage (Rated pressure range)	1 to 5 V $\pm 2.5$ F.S.			
		Linearity	$\pm 1.5\%$ F.S.	$\pm 1\%$ F.S.		
		Output impedance	Approx. 1 k $\Omega$			
	Current output *3	Output current (Rated pressure range)	4 to 20 mA $\pm 2.5\%$ F.S.			
		Linearity	$\pm 1.5\%$ F.S.	$\pm 1\%$ F.S.		
		Load impedance	Maximum load impedance: Power supply voltage 12 V: 300 $\Omega$ , Power supply voltage 24 V: 600 $\Omega$ Minimum load impedance: 50 $\Omega$			
Display	4-digit, 7-segment, 2-color LCD (Red/Green)					
Display accuracy	$\pm 2\%$ F.S. $\pm 1$ digit (Ambient temperature of 25 $\pm 3^\circ\text{C}$ )					
Indicator light	Lights up when switch output is turned ON. (OUT1: Green, OUT2: Red)					
Digital filter *4 *5	Rough adjustment mode: 0, 0.2, 0.5, 1 (Initial value), 2, 5, 10, 20 s					
	Fine adjustment mode: 200 to 1000 ms (in 5 ms increments)					
Effective range of display low-cut function *6	$\pm 3$ Pa	$\pm 0.005$ kPa	$\pm 0.01$ kPa	$\pm 0.03$ kPa	$\pm 0.05$ kPa	
Environment	Enclosure	IP 40				
	Operating temperature range	Operating: 0 to 50 $^\circ\text{C}$ (No freezing or condensation) Stored: -10 to 60 $^\circ\text{C}$ (No freezing or condensation)				
	Operating humidity range	Operating/Stored: 35 to 85% RH (No condensation)				
	Withstand voltage	1000 VAC for 1 minute between terminals and housing				
	Insulation resistance	50 M $\Omega$ or more (500 VDC measured via megohmmeter) between terminals and housing				
Temperature characteristics (25 $^\circ\text{C}$ reference)	$\pm 3\%$ F.S.					
Lead wire	Oilproof heavy-duty vinyl cable, 4-core $\phi 3.5$ , 2 m Conductor area: 0.15 mm $^2$ (AWG 26) Insulator O.D.: 1.0 mm					
Standards	CE marking (EMC directive/RoHS directive), UL/CSA(E216656)					
Main materials of parts in contact with fluid	Sensor pressure receiving area: Silicon Piping port: C3602 (Electroless nickel plating), O-ring: HNBR					
Weight	Including lead wire with connector (4-core, 2 m)	85 g				
	Excluding lead wire with connector	43 g				

\*1 Value without digital filter (at 0 ms)

\*2 Analog voltage output and, analog current output cannot be selected at the same time.

\*3 Analog current output and, analog voltage output cannot be selected at the same time.

\*4 The digital filter set value affects the pressure display, switch output (OUT1, OUT 2), and analog output response time.

\*5 For the digital filter, the response time indicates when the set value is 90% in relation to the step input.

\*6 When the display low-cut function is used, "0" is displayed in the effective range.

Other specifications are the same as the standard product. For details, refer to the **Web Catalog**. Click [here](#) for details.

## Options/Part Nos.

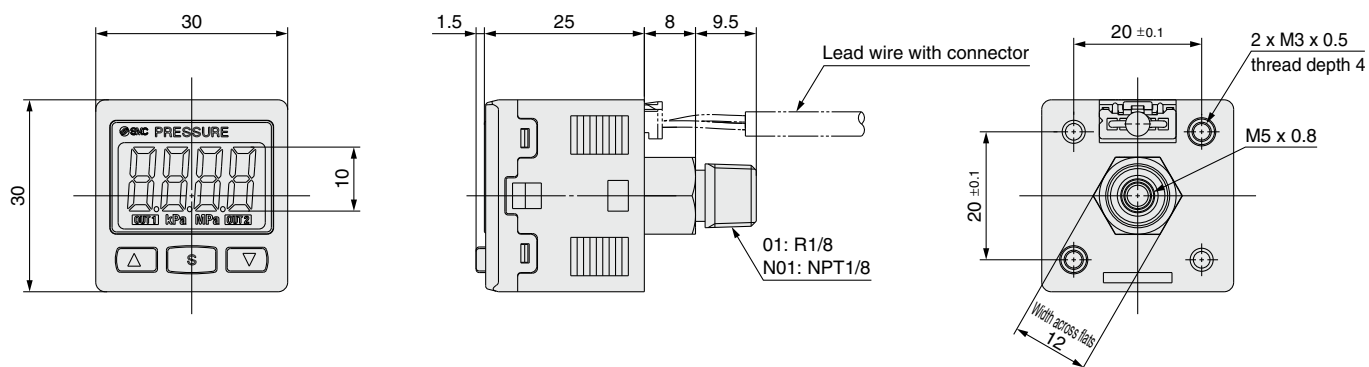
When optional parts are required separately, use the following part numbers to place an order.

Part no.	Option	Note
ZS-38-A1	Bracket A	Mounting screw (with 2 pcs. of M3 x 5L)
ZS-38-A2	Bracket B	Mounting screw (with 2 pcs. of M3 x 5L)
ZS-38-A3	Bracket C	Mounting screw (with 2 pcs. of M3 x 5L)
ZS-27-C	Panel mount adapter	Mounting screw (with 2 pcs. of M3 x 8L)
ZS-27-D	Panel mount adapter + Front protection cover	Mounting screw (with 2 pcs. of M3 x 8L)
ZS-27-01	Front protection cover	
ZS-38-4L	Lead wire with connector	4-core, for 2 outputs, 2 m
ZS-38-4G	Lead wire with connector (with connector cover)	4-core, for 2 outputs, 2 m
ZS-38-5L	Lead wire with a connector for copying	3-core, copy function, 1 m
ZS-38-U	Lead wire unit with a connector for copying	Copy function (up to 10 units)

# ZSE30AF-X576 to X580

## Dimensions

ZSE30AF - <sup>01</sup>N01 - □ - □ □ □ □ - X576 to X580

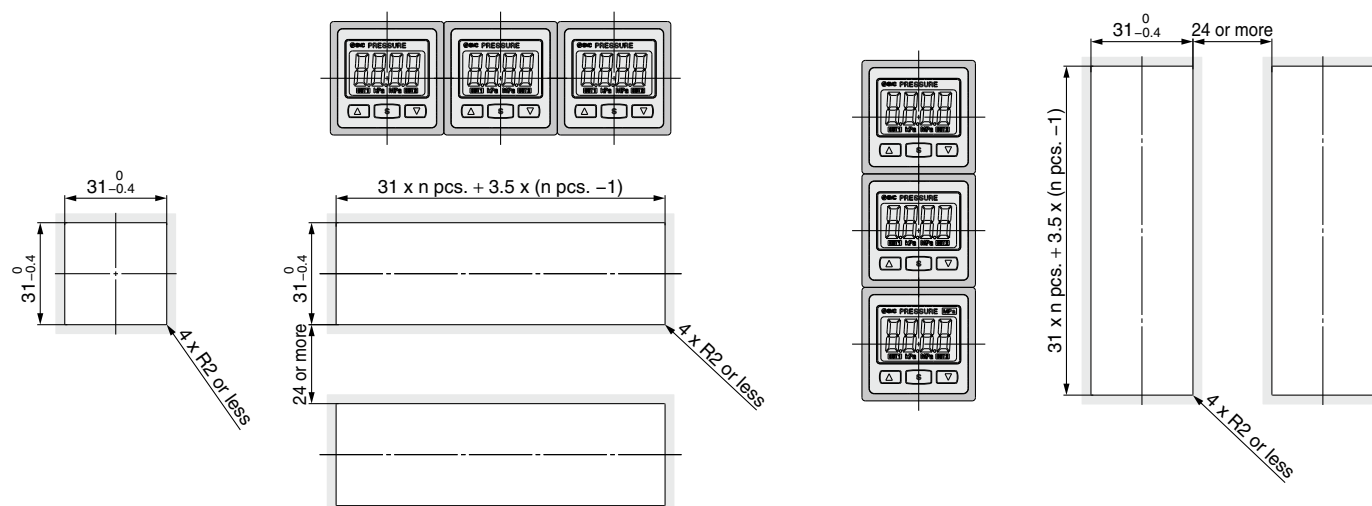


## Panel fitting dimensions

1 pc. mounting

Multiple (2 pcs. or more) horizontal mounting

Multiple (2 pcs. or more) vertical mounting



## ⚠ Precautions

Be sure to read this before handling the products. For safety instructions and pressure switch/flow switch precautions, refer to the "Handling Precautions for SMC Products" and the "Operation Manual" on the SMC website: <http://www.smcworld.com>

### Mounting

#### ⚠ Caution

1. Pressure measurements may fluctuate if the housing is exposed to air.
2. Pressure measurements may fluctuate if stress is applied to the housing or piping.

### Piping

#### ⚠ Caution

1. The pressure sensor may be damaged if excessive pressure is applied to the piping.

⚠ **Safety Instructions** Be sure to read the "Handling Precautions for SMC Products" (M-E03-3) and "Operation Manual" before use.