

2-Color Display High-Precision Digital Pressure Switch

Series **ZSE30A(F)/ISE30A**

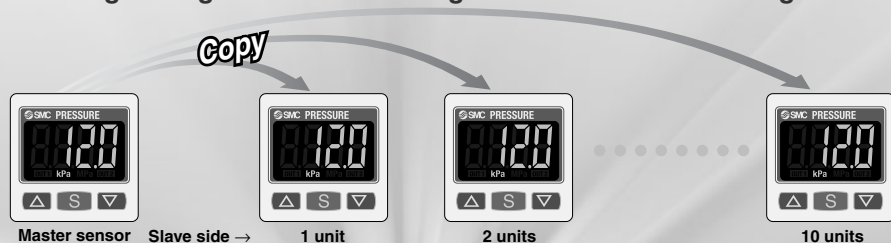


RoHS compliant

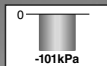
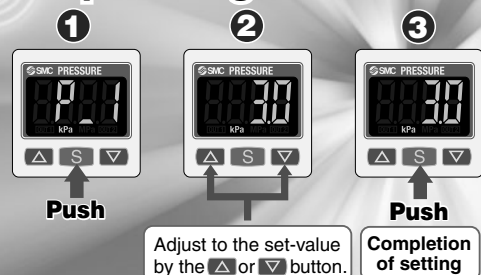
Can copy to up to 10 switches simultaneously.

The settings of the master sensor can be copied to the slave sensors.

- Reducing setting labor
- Minimizing risk of mistakes in setting

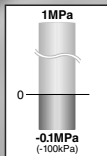


3-step setting



Added vacuum range.

- Rated pressure range: 0.0 to -101.0 kPa



Expanded pressure range for positive-pressure type to the vacuum range.

- Rated pressure range: -0.100 to 1.000 MPa

2 added outputs

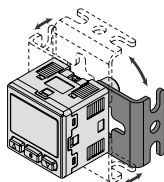
- NPN or PNP open collector 2 outputs
- NPN or PNP open collector 1 output + Analog output (1 to 5 V or 4 to 20 mA)



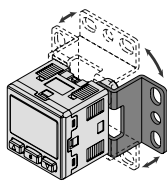
● Mounting

Bracket configuration allows mounting in four orientations.

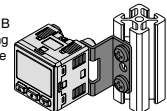
Bracket A



Bracket B/C



Bracket B
Mounting
example

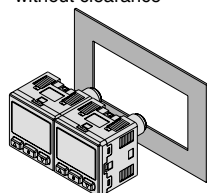


Mounting
example

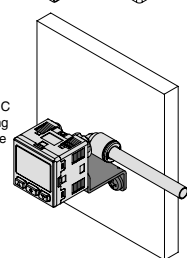


Panel mount

Mountable side by side
without clearance



Bracket C
Mounting
example



One opening!

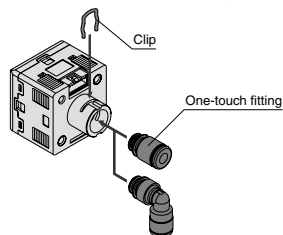
- Reduced panel fitting labor
- Space-saving

● Series

Series	ZSE30A (vacuum)	ZSE30AF (compound)	ISE30A (positive)
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
Output	NPN or PNP open collector 1 output NPN or PNP open collector 2 outputs NPN or PNP open collector 1 output + Analog output (voltage or current)		
Piping	R1/8, NPT1/8 (M5 female threaded) ø4, ø6, ø5/32, ø1/4 One-touch fittings		

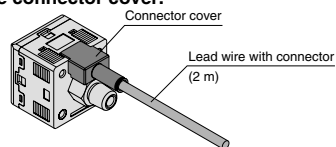
● Replaceable One-touch fittings

The clip type allows easy removal of fittings.
Fitting's type and size can be changed.



● Lead wire

Added the connector cover.



● 4-digit display

4-digit display allows easy reading of displayed values.

Example: 0.5 MPa



Series 30A
(New)



Series 30
(Conventional)

● Possible to check set-value during key locking

● Additional functions

◆ Secret code setting function

The key locking function keeps unauthorized persons from tampering with buttons.

◆ Power-saving function

Power consumption is reduced by turning off the monitor. (Reduce power consumption by up to 20%.)

◆ Resolution-switch function

It reduces the monitor to flicker.



1/1000



1/100

(Accuracy is not changed, only the displayed values.)

◆ MPa/kPa switch function

Vacuum, compound and/or positive pressure can be displayed in MPa or kPa.



MPa



kPa

2-Color Display High-Precision Digital Pressure Switch Series ZSE30A(F)/ISE30A



RoHS



How to Order

For positive pressure

For vacuum/
compound pressure

Rated pressure range	
ZSE30A	0 to -101 kPa
ZSE30AF	-100 to 100 kPa

Rated pressure range
ISE30A -0.1 to 1 MPa

ISE30A

01

N

M




ZSE30A

01

N

M

Piping specifications

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



Unit specifications

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

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 specifications

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

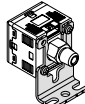


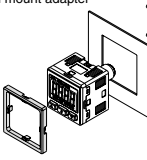
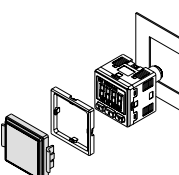
Made to Order (P.16)

X510 For M12 4-pin pre-wired connector
Available only for output "A" or "B".

Option 3

Symbol	Operation manual	Calibration certificate
Nil	<input type="radio"/>	<input type="radio"/>
Y	<input type="radio"/>	<input type="radio"/>
K	<input type="radio"/>	<input type="radio"/>
T	<input type="radio"/>	<input type="radio"/>

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
Display/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
Display/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) <small>Note 1)</small>		
	Window comparator mode			
Analog output	<small>Note 2)</small> 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.		
	Output impedance	Approx. 1 kΩ		
	<small>Note 3)</small> Output current (Rated pressure range)	4 to 20 mA ±2.5% F.S.		2.4 to 20 mA ±2.5% F.S.
	Current output	Linearity	±1% F.S.	
	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	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 terminals and housing		
	Insulation resistance	50 MΩ or more (500 VDC measured via megohmmeter) between terminals and housing		
	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. (25°C reference)		
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 C3602 (electroless nickel plating) O-ring: HNBR		Sensor pressure receiving area: Silicon PBT, POM, Stainless steel 304, C3604 (electroless nickel plating) O-ring: NBR					
Piping port			81 g	70 g	71 g	73 g	75 g	75 g
Weight	Including lead wire with connector (3 cores, 2 m)	85 g	74 g	75 g	77 g	79 g	77 g	79 g
	Including lead wire with connector (4 cores, 2 m)	43 g	32 g	33 g	35 g	37 g	35 g	37 g
	Excluding lead wire with connector							

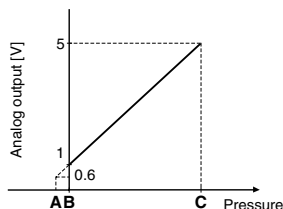
Option/Part No.

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

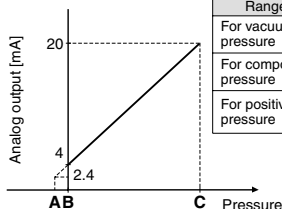
Part no.	Option	Note	Part no.	Option	Note
ZS-38-A1	Bracket A	Mounting screw (with 2 pcs. of M3 x 8L)	ZS-38-4G	Lead wire with connector (with connector cover)	4 cores, for 2 outputs, 2 m
ZS-38-A2	Bracket B	Mounting screw (with 2 pcs. of M3 x 5L)	ZS-38-5L	Lead wire with a connector for copying	3 cores, 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-O1	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

Analog Output

Voltage output



Current output



Range	Rated pressure range	A	B	C
For vacuum pressure	0.0 to -101.0 kPa	—	0	-101 kPa
For compound pressure	-100.0 to 100.0 kPa	—	-100 kPa	100 kPa
For positive pressure	-0.100 to 1.000 MPa	-0.1 MPa	0	1 MPa

Descriptions

Unit display

Displays present unit (only for units of kPa and MPa).

Output (OUT1) display (Green)

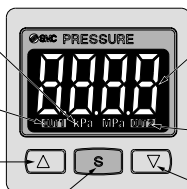
Lights up when switch output (OUT1) is turned ON.

△ button (UP)

Use this button to select the mode or increase the ON/OFF set-value.
It is also used for switching to the peak display mode.

S button (SET)

Use this button to change the mode or confirm the set-value.



LCD

Displays the current pressure, set mode, and error code. Always use red or green display; or switch between green and red according to the output. Four different display settings are available.

Output (OUT2) display (Red)

Lights up when switch output (OUT2) is turned ON.

▽ button (DOWN)







Use this button to select the mode or decrease the ON/OFF set-value.
It is also used for switching to the bottom display mode.

Functions (Refer to pages 14 and 15 for details.)

Copy function	Copies the settings of the master sensor to the slave sensors.
Auto-preset function	This function is to calculate a rough set-value automatically based on the on-going operation.
Display calibration function	Evens out deviations in the displayed value.
Peak display function	Can retain the maximum pressure value displayed during measurement.
Bottom display function	Can retain the minimum pressure value displayed during measurement.
Keylock function (Selectable secret code)	The key board 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.
Unit display switching function	Can convert the display value.
Power-saving mode	Reduces power consumption.
Display resolution-switch function	Converts display resolution from the normal value of 1/1000 to 1/100. It reduces the monitor to flicker.
kPa↔MPa switch function	Converts the unit between kPa and MPa.

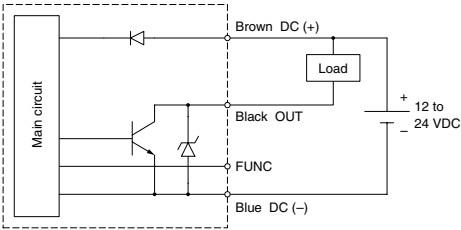
Series ZSE30A(F)/ISE30A

Internal Circuits and Wiring Examples

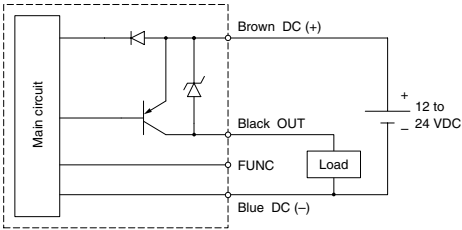
Z/ISE30A(F) -  -  -  -  -  - 

● Output specifications

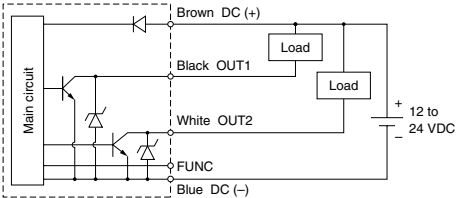
N
NPN (1 output)



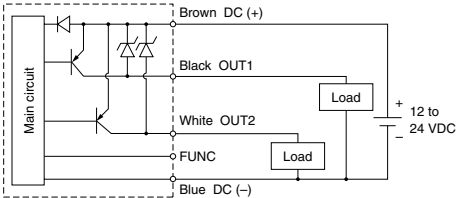
P
PNP (1 output)



A
NPN (2 outputs)



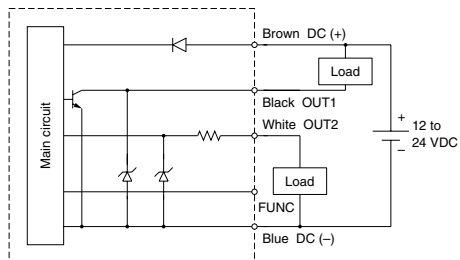
B
PNP (2 outputs)



* The FUNC terminal is connected using a dedicated lead wire (ZS-38-5L or ZS-38-U) when the copy function is used. (Refer to "Copy function" on page 14.)

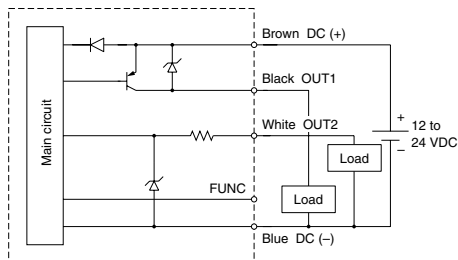
C

NPN (1 output) + Analog voltage output



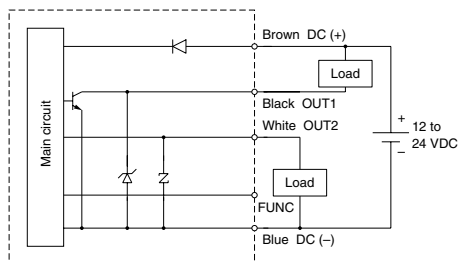
E

PNP (1 output) + Analog voltage output



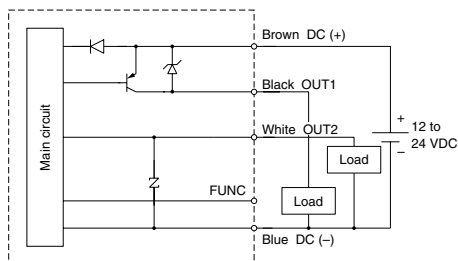
D

NPN (1 output) + Analog current output



F

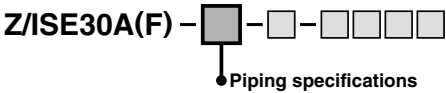
PNP (1 output) + Analog current output



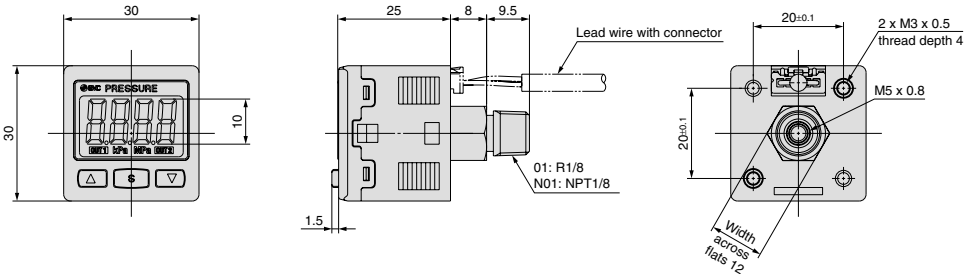
* The FUNC terminal is connected using a dedicated lead wire (ZS-38-5L or ZS-38-U) when the copy function is used. (Refer to "Copy function" on page 14.)

Series ZSE30A(F)/ISE30A

Dimensions

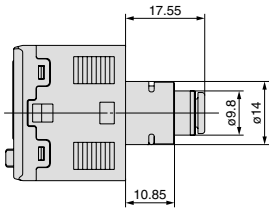


01 / N01



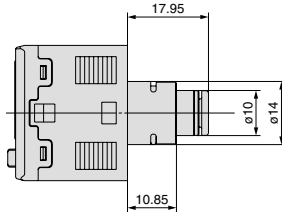
C4H

One-touch fitting $\varnothing 4$ mm
 $\varnothing 5/32$ inch straight



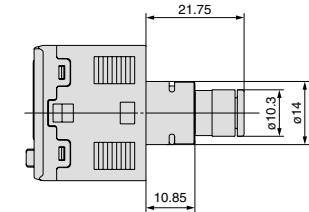
C6H

One-touch fitting $\varnothing 6$ mm
straight



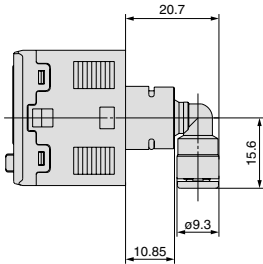
N7H

One-touch fitting $\varnothing 1/4$ inch
straight



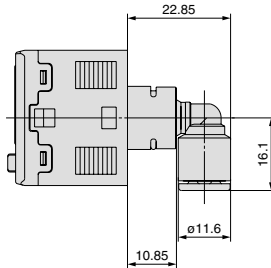
C4L

One-touch fitting $\varnothing 4$ mm
 $\varnothing 5/32$ inch elbow



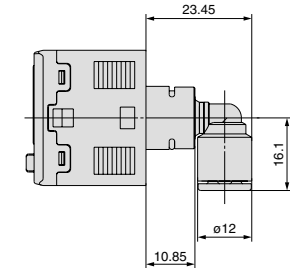
C6L

One-touch fitting $\varnothing 6$ mm
elbow



N7L

One-touch fitting $\varnothing 1/4$ inch
elbow



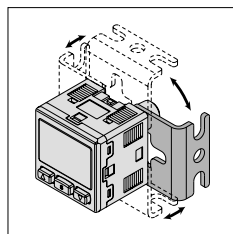
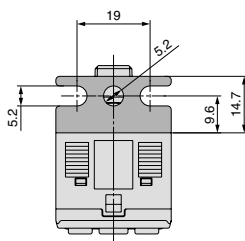
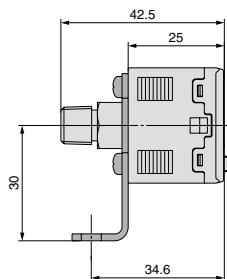
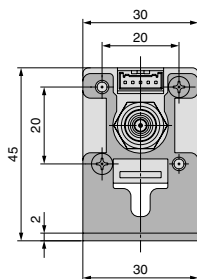
With bracket

Z/ISE30A(F) - □ - □ - □ - □ - □

Option 2

A1

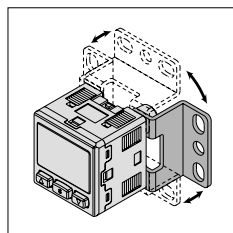
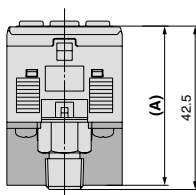
Bracket A
(Option unit part no.: ZS-38-A1)



* Bracket configuration allows mounting in four orientations.

A2

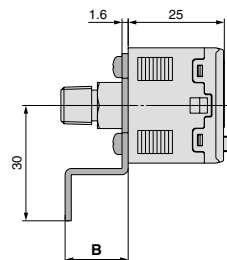
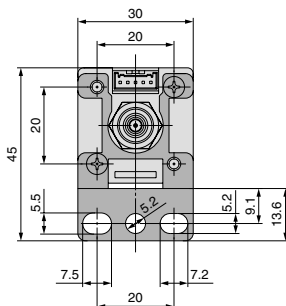
Bracket B
(Option unit part no.: ZS-38-A2)



* Bracket configuration allows mounting in four orientations.

A3

Bracket C
(Option unit part no.: ZS-38-A3)



	A	B
Bracket B	41.4	16.4
Bracket C	53	28

ZSE30A(F)/ISE30A Series

Dimensions

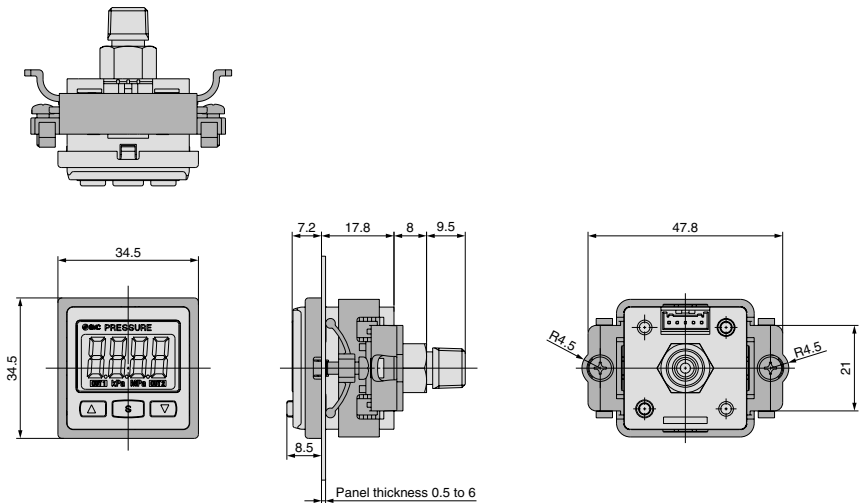
Panel mount adapter

Z/ISE30A(F) - □ - □ - □ - □ - □ - □

Option 2

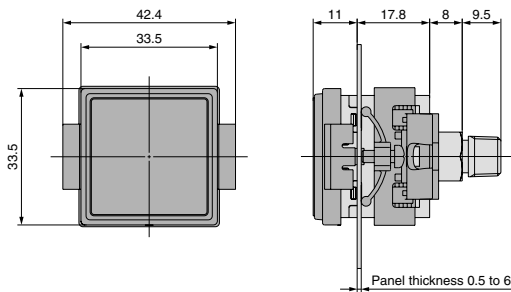
B

Panel mount adapter
(Option unit part no.: ZS-27-C)



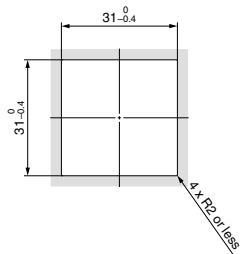
D

Panel mount adapter + Front protection cover
(Option unit part no.: ZS-27-D)

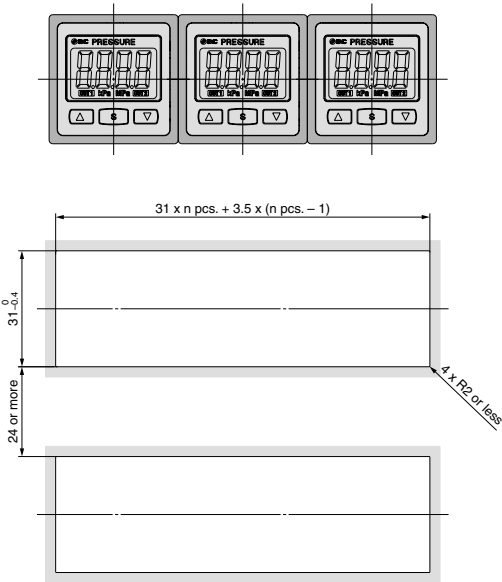


Panel fitting dimensions

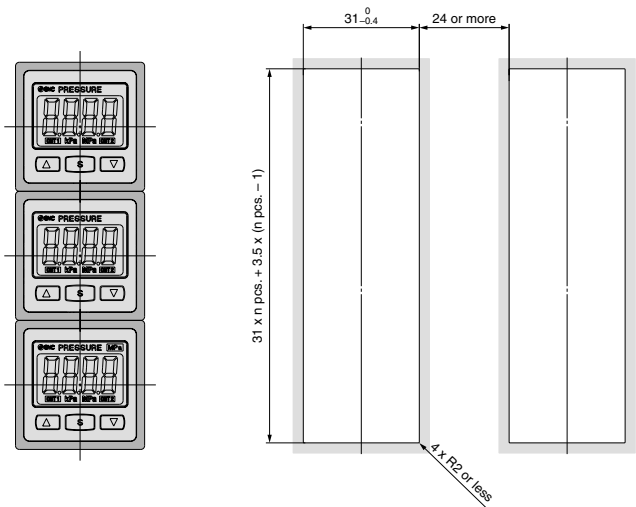
1 pc. mounting



Multiple (2 pcs. or more) horizontal mounting



Multiple (2 pcs. or more) vertical mounting

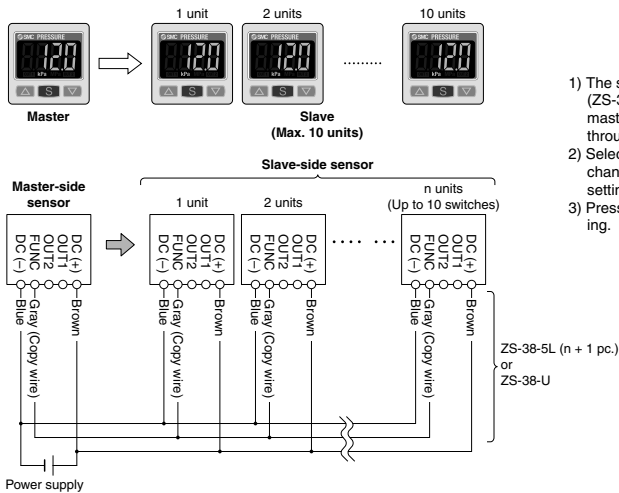


Function Details

A Copy function (F97)

The settings of the master sensor can be copied to the slave sensors, reducing setting labor and minimizing risk of mistakes in setting.

Can copy to up to 10 switches simultaneously.
(Maximum transmission distance 4 m)

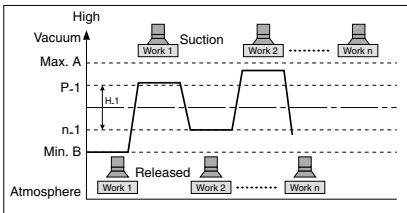


- 1) The sensors are connected by a dedicated lead wire (ZS-38-5L (for master and one slave) or ZS-38-U (for master and up to 10 slaves)). Copying is performed through a dedicated communication line.
- 2) Select the slave switch which is to be the master, and change it into a master using the buttons. (In the default setting, all switches are set as slaves.)
- 3) Press the **S** button of the master switch to start copying.

B Auto-preset function (F5)

Auto-preset function, when selected in the initial setting, calculates and stores the set-value from the measured pressure. The optimum set-value is determined automatically by repeating vacuum and break with the target workpiece several times.

Suction Verification

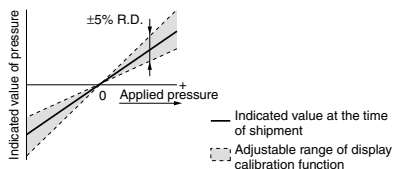


Formula for Obtaining the Set-Value

P_1 or P_2	H_1 or H_2
$P_1 (P_2) = A - (A-B)/4$	$H_1 (H_2) = (A-B)/2$
$n_1 (n_2) = B + (A-B)/4$	

C Display calibration function (F6)

Fine adjustment of the indicated value of the pressure sensor can be made within the range of $\pm 5\%$ of the read value. (The scattering of the indicated value can be eliminated.)



(Note) When the display calibration function is used, the set pressure value may change ± 1 digit.

D Peak/Bottom value indication

This function constantly detects and updates the maximum (minimum) value and allows to hold the maximum (minimum) pressure value. When the **Δ** **▽** buttons are simultaneously pressed for 1 second or longer, while "holding", the held value will be reset.

E Keylock function

Prevents operation errors such as accidentally changing setting values.

F Zero-clear function

This function clears and resets the zero value on the display of measured pressure. For the pressure switch with analog output, the analog output shifts according to the indication. The indicated value can be adjusted within $\pm 7\%$ F.S. of the pressure when ex-factory. (ZSE30AF (for compound pressure) $\pm 3.5\%$ F.S.)

The F□ in () shows the function code number. Refer to the operation manual for the details of operation procedures and function codes.

G Error indication function

Error name	Error code	Description	Action
Overcurrent error	Er1	Load current of 80 mA or more is applied to the switch output (OUT1).	Eliminate the cause of the over current by turning off the power supply, and then turn on it again.
	Er2	Load current of 80 mA or more is applied to the switch output (OUT2).	
Residual pressure error	Er3	During zero-clear operation, pressure over $\pm 7\%$ F.S. is applied. (ZSE30AF (compound) $\pm 3.5\%$ F.S.) After 1 second, the mode will reset to measurement mode. $\pm 1\%$ F.S. of the zero-clear range varies between individual products.	Perform zero-clear operation again after restoring the applied pressure to an atmospheric pressure condition.
Applied pressure error	HHH	Supply pressure exceeds the maximum set pressure.	Reset applied pressure to a level within the set pressure range.
	LLL	Supply pressure is below the minimum set pressure.	
System error	Er0	Internal data error	Turn off the power supply and then turn on it again. If the failure cannot be solved, please contact SMC for investigation.
	Er4		
	Er6		
	Er7		
	Er8		
	Er9		

If the failure cannot be solved after the above instructions are performed, please contact SMC for investigation.

H Anti-chattering function (F3)

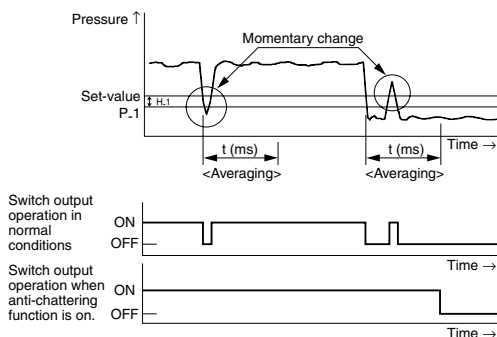
A large bore cylinder or ejector consumes a large volume of air in operation and may experience a temporary drop in the supply pressure. This function prevents detection of such temporary drops in the supply pressure as an error.

Available response time settings

20 ms, 100 ms, 500 ms, 1000 ms, 2000 ms

<Principle>

This function averages pressure values measured during the response time set by the user and then compares the average pressure value with the pressure set point value to output the result on the switch.



I Display unit switching function (F0)

Display units can be switched with this function.

Display unit	PA	GF	bAr	PSi	inH	mmHg
Min. unit setting	kPa	MPa*	kgf/cm ²	bar	psi	inHg
ZSE30A (Vacuum pressure)	0.1	0.001	0.001	0.001	0.01	0.1
ZSE30AF (Compound pressure)	0.1	0.001	0.001	0.001	0.01	0.1
ISE30A (Positive pressure)	1	0.001	0.01	0.01	0.1	

* The ZSE30A (vacuum pressure) and ZSE30AF (compound pressure) will have different setting and display resolution when the unit is set to MPa.

J Power-saving mode (F7)

Power-saving mode can be selected.

It shifts to the power-saving mode without button operation for 30 seconds. It is set to the normal mode (Power-saving mode is OFF.) when ex-factory. (Decimal points and operation indicator light (only when the switch output is turned ON.) blink in the power-saving mode.)

K Setting of secret code (F8)

Users can select whether a secret code must be entered to release key lock. At the time of shipment from the factory, it is set such that the secret code is not required.

Series ZSE30A(F)/ISE30A

Made to Order

Please contact SMC for detailed dimensions, specifications, and lead times.



1 M12 4-pin pre-wired connector (Lead wire length 100 mm)

X510

How to Order



* Refer to "How to Order" on page 5 for standard specifications.

ZSE30A(F)/ISE30A- - - G -X510

Piping specifications*

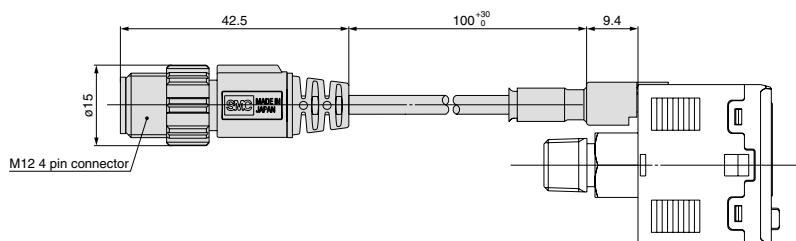
Option*

Unit specifications*

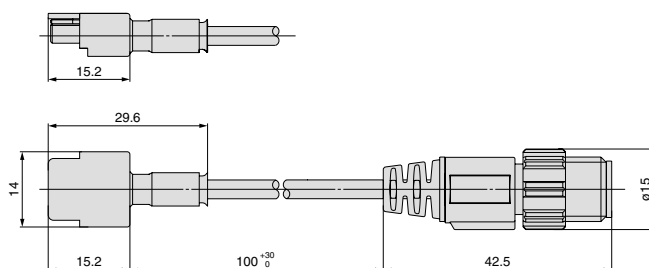
Output specifications

A: NPN open collector 2 outputs

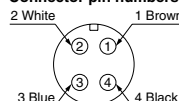
B: PNP open collector 2 outputs



Option cable ZS-38-4GM12



Connector pin numbers



Pin no.	Pin description
1	DC (+)
2	OUT (2)
3	DC (-)
4	OUT (1)



Series ZSE30A(F)/ISE30A

Specific Product Precautions 1

Be sure to read this before handling.

Refer to back page 1 for Safety Instructions, "Handling Precautions for SMC Products" (M-E03-3) for Pressure Switches Precautions.

Handling

⚠ Warning

1. Do not drop, bump, or apply excessive impacts (100 m/s²) while handling. Although the body of the sensor may not be damaged, the internal parts of the sensor could be damaged and lead to a malfunction.
2. The tensile strength of the cord is 35 N. Applying a greater pulling force on it can cause a malfunction. When handling, hold the body of the sensor—do not dangle it from the cord.
3. Do not exceed the screw-in torque of 7 to 9 N·m when connecting the pipe to the switch. Exceeding these values may cause the switch to malfunction. Confirm the fitting specifications before using M5 female thread.
4. Do not use pressure sensors with corrosive and/or flammable gases or liquids.
5. Allow a sufficient margin of tube length in piping in order to prevent application of torsional, tensile or moment load to the tubes and fittings.
6. When a brand of tubing other than SMC is used, make sure that the tolerance of the tube's O.D. satisfies the following specifications.
 - 1) Nylon tubing: within ± 0.1 mm
 - 2) Soft nylon tubing: within ± 0.1 mm
 - 3) Polyurethane tubing: within $+0.15$ mm, within -0.2 mm
7. The applicable fluid is air. Consult SMC if the switch is to be used with other types of fluids.

Connection

⚠ Warning

1. Incorrect wiring can damage the switch and cause a malfunction or erroneous switch output. Connections should be done while the power is turned off.
2. Do not attempt to insert or pull the pressure sensor or its connector when the power is on. A switch output malfunction may occur.

⚠ Caution

1. Wire separately from power lines and high voltage lines, avoiding wiring in the same conduit with these lines. Malfunctions may occur due to noise from these other lines.
2. If a commercial switching regulator is used, make sure that the F.G. terminal is grounded.
3. When applicable to UL, use a power supply unit conforming to UL standards for DC power supply combinations.

Operating Environment

⚠ Warning

1. This pressure switch is CE marked; however, it is not equipped with surge protection against lightning. Lightning surge countermeasures should be applied directly to system components as necessary.

Operating Environment

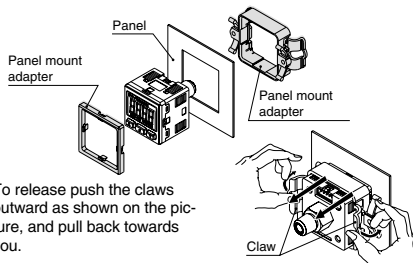
⚠ Warning

2. This pressure switch does not have an explosion proof rating. Never use in the presence of an explosive gas as this may cause a serious explosion.
3. Do not use in an environment where static electricity can cause problems, otherwise system failure or malfunction may result.

Mounting

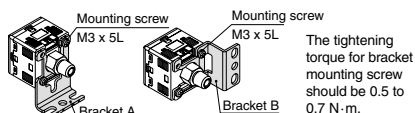
⚠ Caution

1. Mounting and removing with panel mount adapter



2. Mounting with a bracket

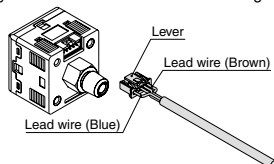
- Mount a bracket to the using two M3 x 5L mounting screws and install on piping. The switch can be installed horizontally depending on the installation location.



- When using bracket B, take piping dimensions into consideration for installation.

Connection/Removal of Connector

- To connect the connector, insert it straight while pinching the lever, and then push the lever into the jack of the housing and lock it.
- To remove the connector, pull it straight out while applying pressure with your thumb to the lever and unhooking it from the jack.



- Do not attempt to insert or pull the pressure sensor or its connector when the power is on. A switch output malfunction may occur.



Series ZSE30A(F)/ISE30A

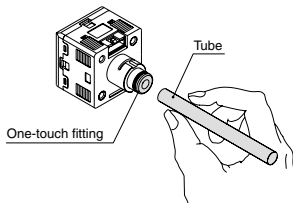
Specific Product Precautions 2

Be sure to read this before handling.

Refer to back page 1 for Safety Instructions, “Handling Precautions for SMC Products” (M-E03-3) for Pressure Switches Precautions.

Piping

- Cut the tube perpendicularly.
- Hold the tube and insert it into the One-touch fitting carefully and securely all the way to the bottom.



Set Pressure Range and Rated Pressure Range

⚠ Caution

Set the pressure within the rated pressure range.

The set pressure range is the range of pressure that is possible in setting.

The rated pressure range is the range of pressure that satisfies the specifications (accuracy, linearity, etc.) on the switch.

Although it is possible to set a value outside the rated pressure range, the specifications will not be guaranteed even if the value stays within the set pressure range.

Switch		Pressure range				
		-100 kPa	0	100 kPa	500 kPa	1 MPa
For vacuum pressure	ZSE30A	-101 kPa -105 kPa	0 10 kPa			
For compound pressure	ZSE30AF	-100 kPa -105 kPa	100 kPa 105 kPa			
For positive pressure	ISE30A	-100 kPa -105 kPa (-0.105 MPa)				1 MPa 1.05 MPa

Rated pressure range of switch
 Set pressure range of switch