

2-Color Display High-Precision Digital Pressure Switch

ZSE40A(F)/ISE40A Series



CE cUL[®] US
RoHS IP65

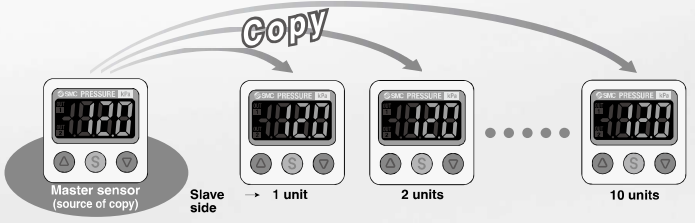
- ZSE20
- ISE20
- ZSE30
- ISE30
- ZSE40**
- ISE40**
- ZSE10
- ISE10
- ISE70
- ZSE80
- ISE80
- PS
- ISA3
- ISA2
- ISE35
- PSE
- IS
- ISG
- ZSM1

M8 connector type

Applicable fluid Air, Non-corrosive gas, Non-flammable gas

Can copy to up to **10** switches simultaneously.

The settings of the master sensor (source of copy) can be copied to the slave sensors.
 • Reducing setting labor • Minimizing risk of mistakes in setting

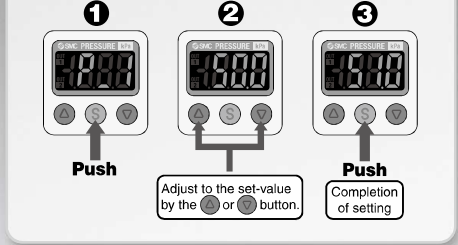


Easy handling!



Raised rubber switch buttons for easy and comfortable operation

3-step setting

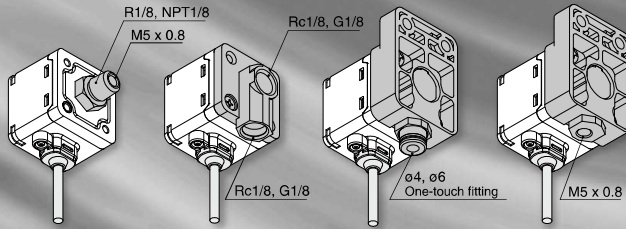


2-color display

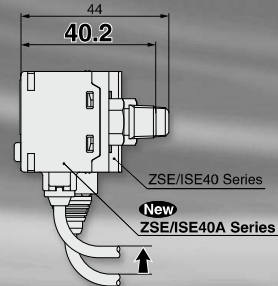
See abnormal values at a glance.



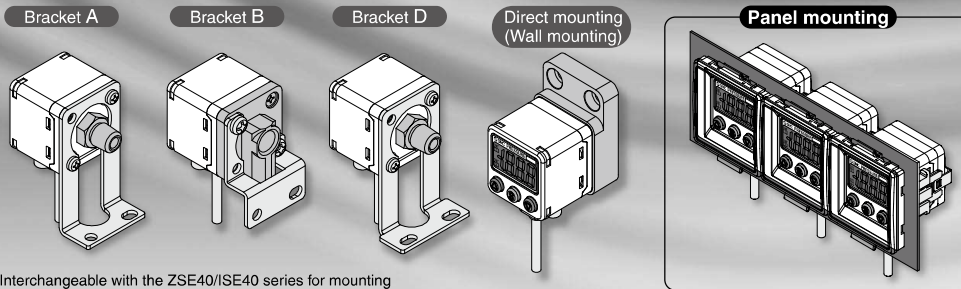
Piping Variations



Space-saving



Mounting Variations



Interchangeable with the ZSE40/ISE40 series for mounting

Series

Series	ZSE40A (vacuum pressure)	ZSE40AF (compound pressure)	ISE40A (positive pressure)
Rated pressure range	0.0 to -101.3 kPa -101 kPa	-100.0 to 100.0 kPa 100 kPa -100 kPa	-0.100 to 1.000 MPa 1 MPa -0.1 MPa (-100 kPa)
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
Min. unit setting	0.1 kPa	0.1 kPa	0.001 MPa
Output	<ul style="list-style-type: none"> • NPN or PNP open collector 2 outputs (with copy function) • NPN or PNP open collector 2 outputs + Analog output (voltage or current)/Auto-shift input 		
Piping	R1/8, NPT1/8 (With M5 female thread), Rc1/8, G1/8, M5 female thread ø4, ø6 One-touch fitting		

Secret code setting function-----

A function to prevent operation by anyone other than the designated operator while the keys are locked.



* The set-value can be checked while the keys are locked.

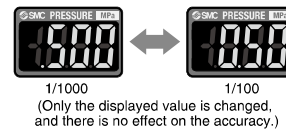
Power-saving function-----

The display can be turned off to save the power consumption. (Power consumption reduced by max. 20%)



Resolution conversion function-----

The flickering on the display can be eliminated.



MPa/kPa switching function-----

The indication unit for vacuum, compound pressure and positive pressure can be integrated into either MPa or kPa.

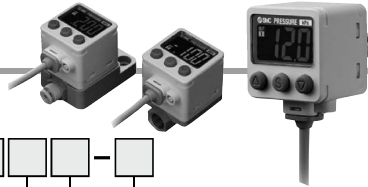


2-Color Display High-Precision Digital Pressure Switch

ZSE40A(F)/ISE40A Series



How to Order



Rated pressure range
ISE40A -0.1 to 1.000 MPa

For positive pressure

ISE40A - 01 - X - M

For vacuum/compound pressure

ZSE40A - 01 - Y - M

Rated pressure range
ZSE40A 0.0 to -101.3 kPa
ZSE40AF -100.0 to 100 kPa

Piping specifications

Option 1	Description	Symbol	Part no.	01	N01	W1	WF1	M5	C4	C6
01	R1/8 (With M5 female thread)		ZS-24-A	○	○	○	○	○	○	○
N01	NPT1/8 (With M5 female thread)		ZS-24-B	×	×	○	○	×	×	×
W1	Rc1/8		ZS-24-D	○	○	○	○	×	×	×
WF1*	G1/8*1		ZS-35-C	○	○	×	×	×	×	×
M5*	M5 x 0.8 (Female thread)		ZS-35-D	×	×	○	○	○	○	○
C4*	ø4 One-touch fitting		ZS-35-F	○	○	×	×	×	×	×
C6*	ø6 One-touch fitting		ZS-35-G	×	×	○	○	○	○	○

* Made to Order
 * Conforming to ISO228-1.
Combination of piping specifications with option 1 and part numbers of options

Description	Symbol	Part no.	01	N01	W1	WF1	M5	C4	C6
Bracket A	A	ZS-24-A	○	○	○	○	×	×	×
Bracket B	B	ZS-24-B	×	×	○	○	×	×	×
Bracket D	D	ZS-24-D	○	○	○	○	×	×	×
Panel mount adapter	E	ZS-35-C	○	○	×	×	×	×	×
Panel mount adapter + Front protective cover	F	ZS-35-F	○	○	×	×	×	×	×

Output specifications

X	NPN open collector 2 outputs (with copy function)
Y	PNP open collector 2 outputs (with copy function)
R	NPN open collector 2 outputs + Analog voltage/Auto-shift switching
T	PNP open collector 2 outputs + Analog voltage/Auto-shift switching
S	NPN open collector 2 outputs + Analog current/Auto-shift switching
V	PNP open collector 2 outputs + Analog current/Auto-shift switching

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

Part no.	Option
ZS-24-A	Bracket A Mounting screw M3 x 5L, M4 x 5L (2 pcs. for each)
ZS-24-B	Bracket B Mounting screw M4 x 5L (2 pcs.)
ZS-24-D	Bracket D Mounting screw M3 x 5L, M4 x 5L (2 pcs. for each)
ZS-35-C	Panel mount adapter (Piping: For 01/N01)
ZS-35-D	Panel mount adapter (Piping: For W1/WF1/M5/C4/C6)
ZS-35-F	Panel mount adapter + Front protective cover (Piping: For 01/N01)
ZS-35-G	Panel mount adapter + Front protective cover (Piping: For W1/WF1/M5/C4/C6)

Unit specifications

NII	With unit switching function (Note 1)
M	Fixed SI unit (Note 2)
P	With unit switching function (Note 1) (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) Unit: kPa, MPa

Option 2

Symbol	Calibration certificate (Note)	Specifications/Description
X501	—	Lead wire length 3 m
X531	—	M12 4-pin pre-wired connector (Lead wire length 100 mm)

Note) All texts in both English and Japanese. Refer to page 66 for details.

Option 1*

NII	None	
A	Bracket A	
B	Bracket B	
D	Bracket D	
E	Panel mount adapter	
F	Panel mount adapter + Front protective cover	

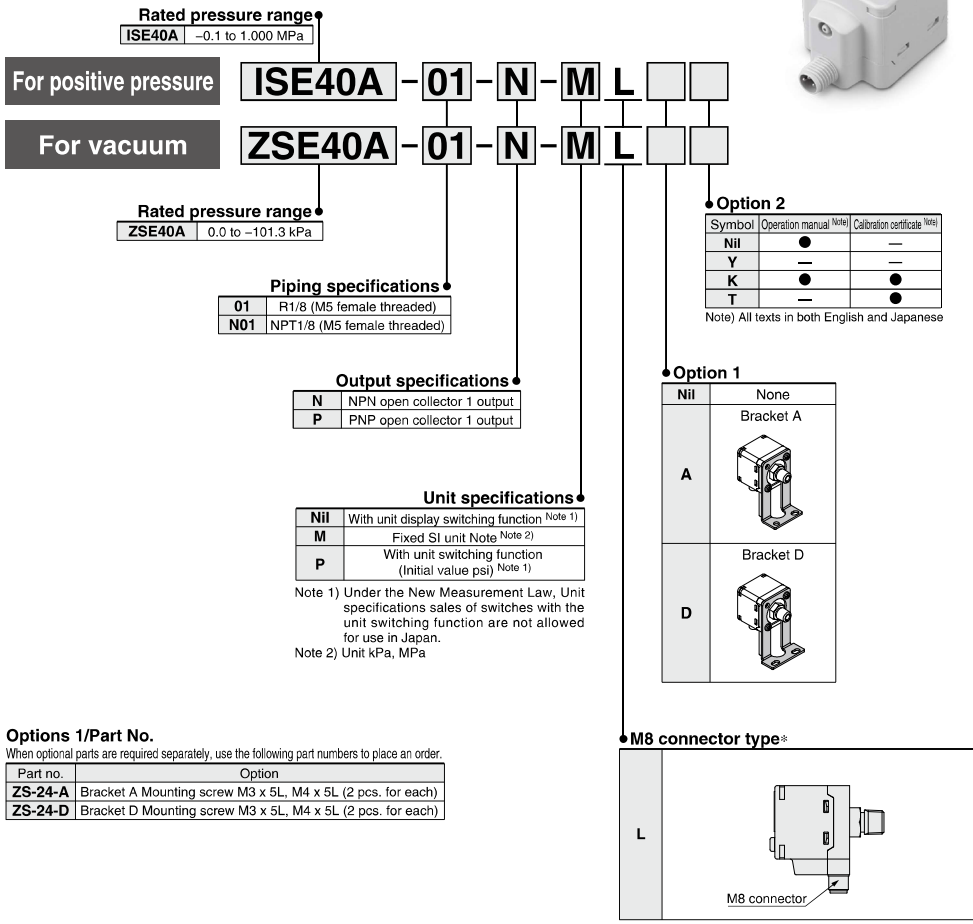
* Some options are unavailable depending on the piping specifications. Refer to "Combination of piping specifications with option 1 and part numbers of options".

- ZSE20
- ISE20
- ZSE30
- ISE30
- ZSE40
- ISE40
- ZSE10
- ISE10
- ISE70
- ZSE80
- ISE80
- PS
- ISA3
- ISA2
- ISE35
- PSE
- IS
- ISG
- ZSM1



ZSE40A(F)/ISE40A Series

How to Order [For M8 (3 pins) connector]



Options 1/Part No.

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

Part no.	Option
ZS-24-A	Bracket A Mounting screw M3 x 5L, M4 x 5L (2 pcs. for each)
ZS-24-D	Bracket D Mounting screw M3 x 5L, M4 x 5L (2 pcs. for each)

2-Color Display High-Precision Digital Pressure Switch **ZSE40A(F)/ISE40A Series**

Refer to pages 11 and 12 for Pressure Switch Precautions. For details about the Specific Product Precautions, refer to the Operation Manual on the SMC website, <http://www.smcworld.com>

Specifications

Model		ZSE40A (vacuum pressure)	ZSE40AF (compound pressure)	ISE40A (positive pressure)	
Rated pressure range		0.0 to -101.3 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 45 mA or less					
Switch output NPN or PNP open collector 1 output or 2 outputs					
Maximum load current		80 mA			
Maximum applied voltage		28 V (at NPN output)			
Residual voltage		1 V or less			
Response time		2.5 ms (with anti-chattering function: 20, 100, 500, 1000, 2000 ms)			
Short circuit protection		Yes			
Repeat accuracy ±0.2% F.S. ±1 digit					
Hysteresis		Variable (0 or above) ^{Note 1)}			
Hysteresis mode					
Window comparator mode					
Analog output	^{Note 2)} 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.		
		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.		
		Load impedance	Maximum load impedance: 300 Ω (Power supply voltage 12 V) 600 Ω (Power supply voltage 24 V) Minimum load impedance: 50 Ω		
Auto-shift input Non-voltage input (Reed or Solid state), Low level: 0.4 V or less, 5 ms or longer input					
Display 3 1/2-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 output is turned ON. OUT1, OUT2: Orange					
Environment	Enclosure		IP65		
	Operating temperature range ^{Note 4)}		Operating: -5 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		
Temperature characteristics ±2% F.S. (25°C reference)					
Lead wire Oilproof heavy-duty vinyl cable 5 cores ø3.5, 2 m Conductor area: 0.15 mm ² (AWG26) Insulator O.D.: 0.95 mm					
Standards CE, UL/CSA (E216656), RoHS					

Note 1) If the applied pressure fluctuates around the set-value, the hysteresis must be set to a value more than the fluctuating width, otherwise chattering will occur.
 Note 2) When the analog voltage output is selected, the analog current output cannot be selected.
 Note 3) When the analog current output is selected, the analog voltage output cannot be selected.
 Note 4) UL temperature rating: The maximum ambient temperature is 50°C.

Piping Specifications

Part no.		01	N01	W1	WF1	M5	C4	C6
Port size		R1/8 (With M5 female thread)	NPT1/8 (With M5 female thread)	Rc1/8	G1/8	M5 x 0.8 female thread	ø4 One-touch fitting	ø6 One-touch fitting
Material of parts in contact with fluid	Sensor pressure receiving area	Silicon						
	Piping port	C3602 (Electroless nickel plating) O-ring: HNBR			ZDC2 O-ring: HNBR		ZDC2, POM, Stainless steel 304, C3604 (Electroless nickel plating) O-ring: HNBR, NBR	
Weight		78 g	79 g	97 g	104 g	101 g		
	M8 connector	45 g	46 g	-		-		

ZSE20
ISE20
ZSE30
ISE30
ZSE40
ISE40
ZSE10
ISE10
ISE70
ZSE80
ISE80
PS
ISA3
ISA2
ISE35
PSE
IS
ISG
ZSM1