

# Mechanical Style Pressure Switch

## Series IS1000

Long service life:  
5 million cycles



IS1000-01 IS1000-01-X202

### Specifications

Model	IS1000-01
Fluid	Air/Inert gas
Proof pressure	1.0 MPa
Max. operating pressure	0.7 MPa
Regulating pressure range (at OFF point)	0.1 to 0.4 MPa
Hysteresis	0.08 MPa or less
Error of scale	±0.05 MPa
Repeatability	±0.05 MPa
Contacts	1a
Wiring specifications	Grommet, Lead wire length 0.5 m (Standard)
Fluid	Air
Ambient and fluid temperature	-5 to 60°C (No freezing)
Port size	R 1/8
Weight	74 g

ZSE   
ISE

PSE

ZSE3

PS

ZSE1

ZSP

ISA2

IS

ZSM

PF2

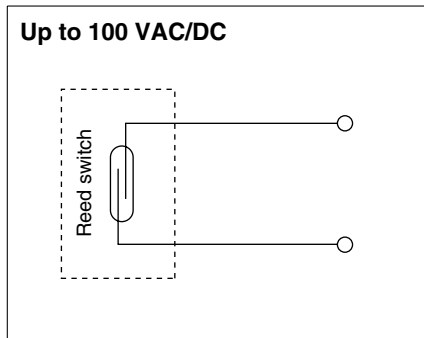
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Data

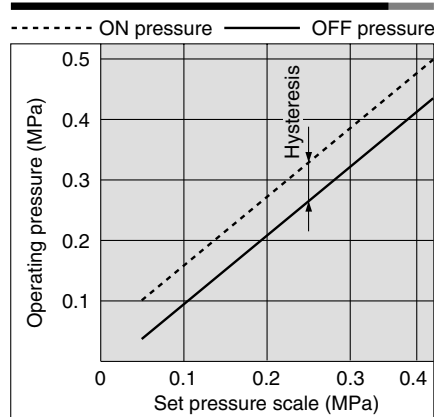
### Switch Characteristics

Max. contact capacity	AC 2 VA, 2 W DC		
Voltage	24 VAC/DC or less	48 VAC/DC	100 VAC/DC
Max. operating current	50 mA	40 mA	20 mA
Impact resistance	30 G		

### Electrical Circuit



### Operating Pressure Range



### How to Order

IS1000 — 01 S —

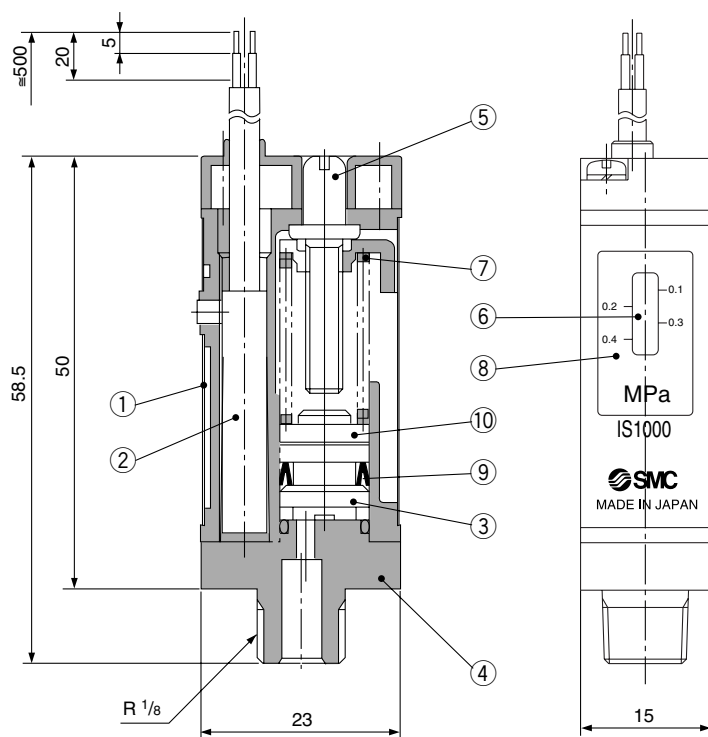
Port size	
01	R 1/8
N01	NPT 1/8

Seal	
Nil	None
S	With seal

Option	
X201	Lead wire length 3 m
X202	Regulating pressure range 0.1 to 0.6 MPa
X215	Lead wire length 3 m Regulating pressure range 0.1 to 0.6 MPa

# Series IS1000

## Construction



### Component Parts

No.	Description	Material
①	Shield plate	Rolled steel plate
②	Switch assembly	—
③	Piston	Polyacetal
④	PT fittings	Zinc die-casted
⑤	Adjusting screw	Brass
⑥	Pointer	Brass
⑦	Spring	Stainless steel 304-WPB
⑧	Scale plate	Rigid vinyl chloride
⑨	Miniseal Y type	NBR
⑩	Magnet	Rare earth magnet

## ⚠ Precautions

Be sure to read before handling. Refer to pages 16-14-3 and 16-14-4 for Safety Instructions and Common Precautions on the products mentioned in this catalog, and refer to pages 16-1-11 to 16-1-13 for Precautions on every series.

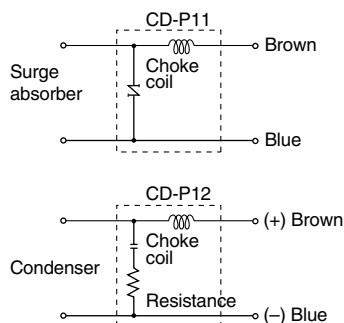
### Wiring

#### ⚠ Warning

1. Connect load before connecting with power source.
2. In the case of induction load or lead wire exceeding 5 m long, the following contact protection box should be used. It may lead to damage to a switch.

Part no.	Voltage	Lead wire length
CD-P11	100 VAC	Switch side: 0.5 m
CD-P12	24 VDC	Load side: 0.5 m

#### 3. Internal circuit of contact protection box

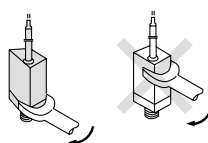


4. **How to connect contact protection box**  
Connect the lead wires from the body and the contact protective box side indicated "SWITCH". Lead wire should be as short as possible, within 1 m.
5. **Dimensions of lead wire**  
Enclosure:  $\phi$  3.4  
Insulator:  $\phi$  1.1  
Conductor:  $\phi$  0.64

### Mounting/Piping

#### ⚠ Warning

1. **When changing piping by hand, hold body.**  
Electrical wire must not be subjected to excessive force. It may cause a malfunction or damage.
2. **Do not drop nor apply excessive force.**  
It may cause a malfunction or damage.
3. **Tighten IS1000-01 applying the spanner on the PT fitting part.**



4. **Mounting direction is available in either horizontal or perpendicular.**

### Pressure Source

#### ⚠ Warning

1. Do not use with corrosive gases or fluids.
2. Never use in an environment where flammable fluid or gas is used. Since this is not an explosion-proof construction, it may lead to an explosive disaster.
3. Avoid use in vacuum applications.  
Switch may be imploded.

### Pressure Setting

#### ⚠ Warning

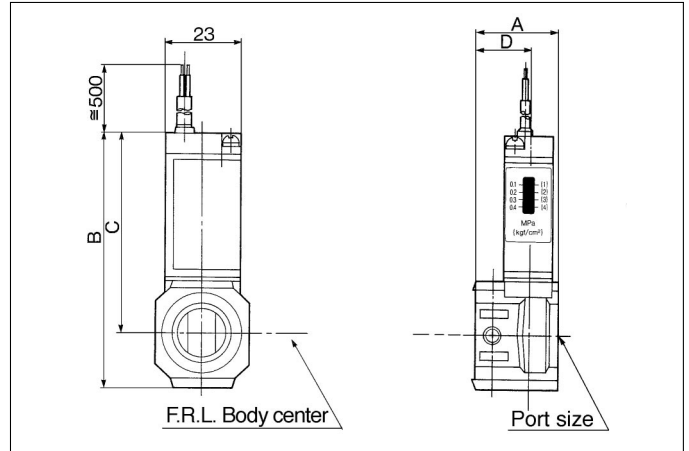
1. Scale of switching set display is the set value at the pressure drop.
2. When detecting ON-pressure signal, note that set pressure on scale plate plus ON-OFF differential (Hysteresis) will be ON-pressure signal.
3. Pressure display on the scale plate is just as a reference guide. For an accurate setting, measure it by pressure gauge.

### Operating Environment

#### ⚠ Warning

1. Avoid using a switch in a magnetic environment. It may cause a malfunction.
2. Do not use in such an environment, where water or oil is splashed. Since it is the open type construction, if water or oil make an ingress into the internal parts, the electric circuit will be corroded and may result in a malfunction or damage.
3. Avoid vibration. Vibration may cause malfunction or may cause setting to be incorrect.

## Pressure Switch with Piping Adapter



### Specifications

Fluid	Air
Proof pressure	1.0MPa
Max. operating pressure	0.7MPa
Set pressure range (off)	0.1 to 0.4MPa
Differential	0.08MPa
Ambient and fluid temperature	5 to 60°C (No condensation)

### Switch Characteristics

Contact point structure	1a
Max. contact point capacity	2V AC/2W DC
Voltage AC, DC	12V, 24V, 48V, 100V
Max. operating current	AC, 12V to 24V DC: 50mA AC, 48V DC: 40mA AC, 100V DC: 20mA

Model (1)	Port size	A	B	C	D	Applicable model
IS1000E-2□01Y	1/8	28	73	62	18.5	AC2000, AC2010, AC2020 AC2030, AC2040 AW2000
IS1000E-2□02Y	1/4					
IS1000E-2□03Y	3/8					
IS1000E-3□02Y	1/4	26	80	63	16.5	AC2500, AC2520, AC2530 AC3000, AC3010, AC3020 AC3030, AC3040 AW3000, AW3050
IS1000E-3□03Y	3/8					
IS1000E-3□04Y	1/2	40	80	63	17.5	AC4000, AC4010, AC4020 AC4030, AC4040 AW4000, AW4050 (2)
IS1000E-4□02Y	1/4	33	87	66	17.5	
IS1000E-4□03Y	3/8					
IS1000E-4□04Y	1/2	50	87	66	17.5	
IS1000E-4□06Y	3/4					

Note1) □ in the part number indicate a connecting thread. Use nothing for Rc(PT), N for NPT and F for G(PF).

Note2) Can NOT be mounted on "AC40□0-06" and "AW40□0-06".

\*With retainer, O ring and bolt.

\*\*Consult SMC when mounting the pressure switch on "AC40□0-06" and "AW40□0-06".

\*For more information, refer to p.3.0-0.

### How to Order

IS1000E- 3 □ 03 YL □

Pressure switch with piping adapter

Body size

2	For AC2000
3	For AC2500, AC3000
4	For AC4000-02 to 04

Thread

—	Rc(PT)
N	NPT
F	G(PF)

Options

X201	Length of lead wire: 3m
X202	Setting pressure range: 0.1 to 0.6MPa
X250	Reverse mounting (Left side mounting style)

Attachment

—	Without attachment
Y	With attachment
YL	With attachment and L type bracket
YT	With attachment and T type bracket

Piping adapter port size

01	1/8
02	1/4
03	3/8
04	1/2
06	3/4

### Attachments for IS1000E

Pressure switch applicable model No.	Y type standard	YL type with L type bracket	YT type with T type bracket
IS1000E-201 to 203	Y20E	Y20LE	Y20TE
IS1000E-302 to 304	Y30E	Y30LE	Y30TE
IS1000E-402 to 406	Y40E	Y40LE	Y40TE

AC

AV

AU

AF

AR

IR

VEX

AW

AMR

AWM

AWD

ITV

VBA

VE

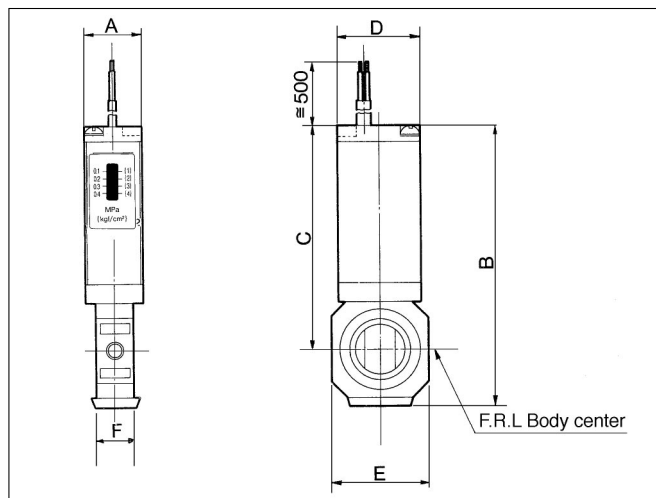
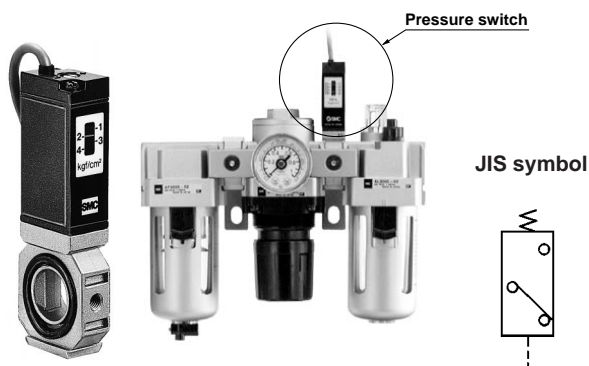
VY

G

AL

## Pressure Switch: (S)

Compact pressure switch can be mounted easily.  
Makes it easier to detect pressure in lines.



Model	A	B	C	D	E	F	Applicable model
IS1000M-2Y	15	73.5	62.6	23	28	10	AC2000, AC2020, AC2030
IS1000M-3Y	15	82	64.9	23	29	11	AC2500, AC2520, AC2530 AC3000, AC3020, AC3030
IS1000M-4Y	15	88.7	67.6	23	35	14	AC4000, AC4020, AC4030
IS1000M-5Y	15	91	68	23	44	14	AC4000-06, AC4020-06 AC4030-06
IS1000M-6Y	15	100	72.5	23	54	15	AC5000, AC5500, AC6000 AC5020, AC5520, AC6020

### Specifications

Fluid	Air
Proof pressure	1.0MPa
Max. operating pressure	0.7MPa
Set pressure range (off)	0.1 to 0.4MPa
Differential	0.08MPa
Ambient and fluid temperature	5 to 60°C(No condensation)

### Switch Characteristics

Contact point structure	1a
Max. contact point capacity	2V AC/2W DC
Voltage AC, DC	12V, 24V, 48V, 100V
Max. operating current	AC, 12V to 24V DC: 50mA AC, 48V DC: 40mA AC, 100V DC: 20mA

\*For more information, refer to SMC  
Pressure switch catalog. (Catalog No.E824)

### Caution on Assembling

Attachment for pressure switch can be installed at the IN/OUT side of AF, AR, AL, AFM and AFD. Mounting at the IN/OUT side of AW and upward handle of AR is not possible.

### How to Order

IS1000M - 4 - YT - [ ]

Pressure switch

Body size

2	For AC2000
3	For AC2500, AC3000
4	For AC4000-02 to 04
5	For AC4000-06
6	For AC5000, AC6000

Options

X201	Length of lead wire: 3m
X202	Set pressure range: 0.1 to 0.6MPa

Attachment

—	Without attachment
Y	With attachment
YL	With attachment and L type bracket
YT	With attachment and T type bracket

### Attachments for IS1000M

Pressure switch applicable model No.	Y type standard	YL type with L type bracket	YT type with T type bracket
IS1000M-2	Y20M	Y20LM	Y20TM
IS1000M-3	Y30M	Y30LM	Y30TM
IS1000M-4	Y40M	Y40LM	Y40TM
IS1000M-5	Y50M	Y50LM	Y50TM
IS1000M-6	Y60M	Y60LM	Y60TM

AC

AV

AU

AF

AR

IR

VEX

AW

AMR

AWM

AWD

ITV

VBA

VE

VY

G

AL

## Pressure Switch (S)

A compact integrated pressure switch can be easily installed and facilitates the pressure detection of the line.



### Specifications

Fluid	Air
Proof pressure	1.0MPa
Maximum operating pressure	0.7MPa
Set pressure range (off)	0.1 to 0.4MPa
Differential	0.08MPa
Ambient and fluid temperature	-5 to 60°C (with no freezing)

### Switch characteristics

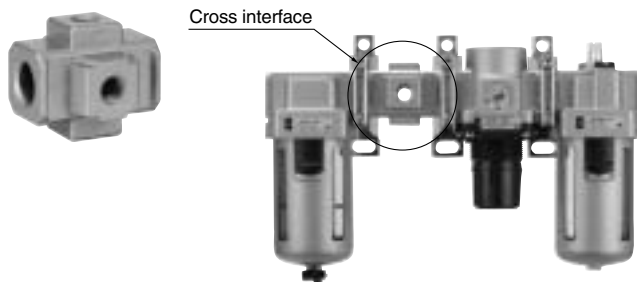
Contact point configuration	1a
Maximum contact point capacity	2VA(AC), 2W(DC)
Operating voltage: AC, DC	100V or less
Maximum operating current	AC, DC12V to 24V: 50mA AC, DC48V: 40mA AC, DC100V: 20mA

## Cross Interface (C)

M5 x 0.8, 1/8, 1/4, 3/8, 1/2

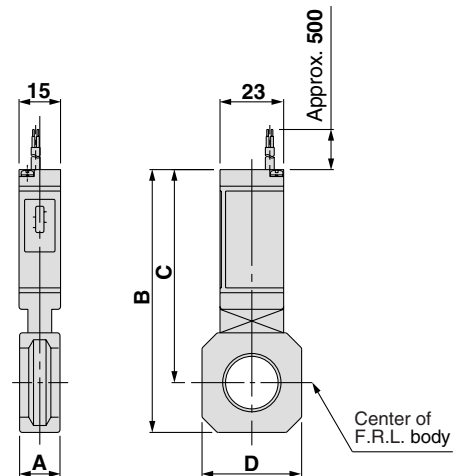
Pipings are possible in all 4 directions.

IN/OUT ports are not machined for threads. Contact SMC if threaded (machined) ports are required.



### Cautions in Mounting

- When mounting a cross interface directly on the IN side of the lubricator, be sure to use a series AKM check valve between the lubricator and cross interface.
- Factory mounting of a cross interface on the AC model is available as a special order.



Model	A	B	C	D	Applicable model
IS1000M-20	11	76	66	28	AC20□
IS1000M-30	13	86	72	30	AC25□, AC30□
IS1000M-40	15	95	77	36	AC40□
IS1000M-50	17	99	79	44	AC40□-06
IS1000M-60	22	92.5	68.5	53	AC50□, AC55□, AC60□

Note) Separate interfaces are required for modular unit.

### How to Order

IS1000M-30

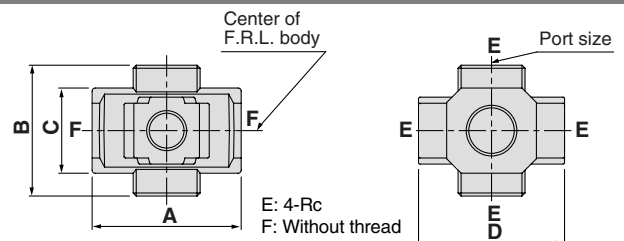
Pressure switch  
Body size

20	For AC20
30	For AC25, AC30
40	For AC40-02 to 04
50	For AC40-06
60	For AC50, AC55, AC60

### Accessories

X201	Lead wire length: 3m
X202	Regulating pressure range: 0.1 to 0.6MPa
X207	MPa/PSI Dual scale
X215	Lead wire length: 3m; Regulating pressure range: 0.1 to 0.6MPa

This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.)

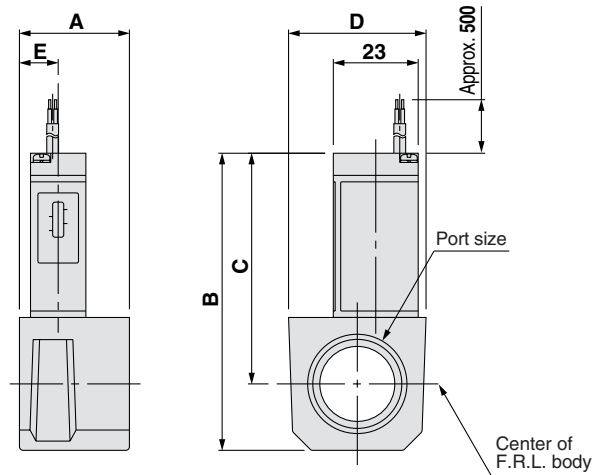
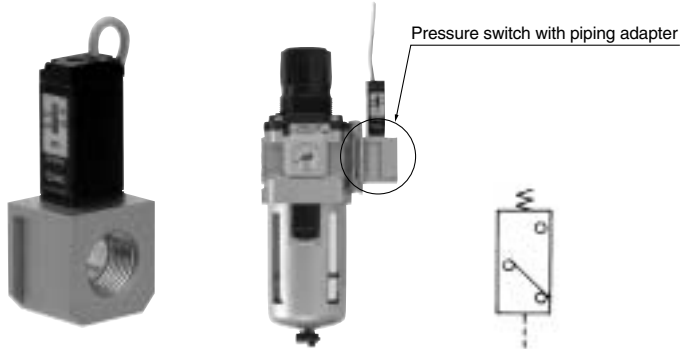


Model	Port size	A	B	C	D	Applicable model
Y14-M5	M5	23	16	14	25	AC10□
Y24-□01	1/8	40	40	22	40	AC20□
Y24-□02	1/4					
Y34-□01	1/8	49	43	28	48	AC25□, AC30□
Y34-□02	1/4					
Y44-□02	1/4	60	48	36	54	AC40□
Y44-□03	3/8					
Y54-□03	3/8	72	62	40	62	AC40□-06
Y54-□04	1/2					

Notes) □ in the model numbers indicates a thread type. No indication is necessary for Rc; however, indicate N for NPT, and F for G.

• If threaded ports are required, they are available as a special order. Contact SMC.

## Pressure Switch with Piping Adapter (P)



### Specifications

Fluid	Air
Proof pressure	1.0MPa
Maximum operating pressure	0.7MPa
Set pressure range (when OFF)	0.1 to 0.4MPa
Differential	0.08MPa
Ambient and fluid temperature	-5 to 60°C (with no freezing)

### Switch characteristics

Contact point configuration	1a
Maximum contact point capacity	2VA(AC), 2W(DC)
Operating voltage: AC, DC	100V or less
Max. operating current	12V to 24V AC, DC: 50mA
	48V AC, DC: 40mA
	100V AC, DC: 20mA

Model <small>Note 1)</small>	Port size	A	B	C	D	E	Applicable model
IS1000E-20□01	1/8	30	68	57	28	16	AC20□
IS1000E-20□02	1/4						AR20□, AW20□
IS1000E-20□03	3/8						AWM20, AWD20
IS1000E-30□02	1/4	32	74.5	60.5	30	13	AC25□, AC30□
IS1000E-30□03	3/8						AR25□, AR30□, AW30□
IS1000E-30□04	1/2						AWM30, AWD30
IS1000E-40□02	1/4	32	80.5	62.5	37	12.5	AC40□ <small>Note 2)</small>
IS1000E-40□03	3/8						AR40□, AW40□
IS1000E-40□04	1/2						AWM40, AWD40
IS1000E-40□06	3/4						

Note 1) □ in the model numbers indicates a thread type. No indication is necessary for Rc; however, indicate N for NPT, and F for G.

Note 2) A pressure switch cannot be mounted on AC40□-06 and AW40□-06.

\* Separate interfaces are required for modular unit.

\*\* The pressure switch on AC40□-06 and above and AW40□-06 can be mounted by screwing IS1000-01 into the piping adapter E500-□06-X501 or E600-□06-X501 to E600-□06 to 10-X501 (with top-face thread Rc 1/8). Products with a premounted switch are available as a special order. Please contact SMC regarding their availability.

## How to Order

IS1000E-30□03□

Pressure switch with piping adapter

Body size

20	For AC20
30	For AC25, AC30
40	For AC40-02 to 04

Thread type

Nil	Rc
N	NPT
F	G

### Option

X201	Lead wire length: 3m
X202	Regulating pressure range: 0.1 to 0.6MPa
X207	MPa/PSI Dual scale
X215	Lead wire length: 3m; Regulating pressure range: 0.1 to 0.6MPa
X250	Opposite-side mounting (Left-side mounting type)
X251	Lead wire length: 3m; Opposite-side mounting (Left-side mounting type)
X252	Set pressure range: 0.1 to 0.6MPa; Opposite-side mounting (Left-side mounting type)
X253	Lead wire length: 3m; Regulating pressure range: 0.1 to 0.6MPa; Opposite-side mounting (Left-side mounting type)

This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.)

### Piping adapter port size

Symbol	Port size	Body size		
		20	30	40
01	1/8	●	—	—
02	1/4	●	●	●
03	3/8	●	●	●
04	1/2	—	●	●
06	3/4	—	—	●