



# Modular Type Regulators *Series AR*

Regulator Series AR	Model	Port size	Options
 <p data-bbox="165 958 448 987">Page 47 through to 56</p>	AR10	M5	Bracket Square embedded type pressure gauge (except the AR10) Round type pressure gauge
	AR20	1/8, 1/4	
	AR25	1/4, 3/8	
	AR30	1/4, 3/8	
	AR40	1/4, 3/8, 1/2	
	AR40-06	3/4	
	AR50	3/4, 1	
	AR60	1	
 <p data-bbox="165 1379 448 1408">Page 47 through to 56</p>	AR20K	1/8, 1/4	Digital pressure switch (except the AR10) Panel mount
	AR25K	1/4, 3/8	
	AR30K	1/4, 3/8	
	AR40K	1/4, 3/8, 1/2	
	AR40K-06	3/4	
	AR50K	3/4, 1	
	AR60K	1	

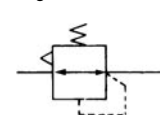
# Regulator

# AR10 to AR60

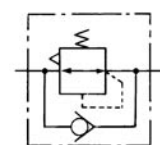
## Regulator with Backflow Function

# AR20K to AR60K

JIS Symbol  
Regulator



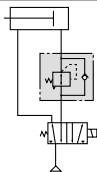
Regulator with  
Backflow Function



- With the backflow function it incorporates a mechanism to exhaust the air pressure in the outlet side reliably and quickly.

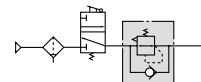
Example 1)

When the pressure in the rear and the front of the cylinder differs:



Example 2)

When the air supply is cut off and releasing the inlet pressure to the atmosphere, the residual pressure release of the outlet side can be ensured for a safety purpose.



## How to Order

AR **30** **K** - **03** **BE** - **1** **NR**

① ② ③ ④ ⑤ ⑥

Made to Order  
(Refer to pages 55 and 56 for details.)

- Option/Semi-standard: Select one each for a to g.
  - Option/Semi-standard symbol: When more than one specification is required, indicate in ascending alphanumeric order.
- Example) AR30K-03BE-1NR

	Symbol	Description	① Body size							
			10	20	25	30	40	50	60	
② With backflow function	—	Without backflow function	●	●	●	●	●	●	●	●
	K <small>Note 1)</small>	With backflow function	—	●	●	●	●	●	●	●
+										
③ Thread type	—	Metric thread (M5)	●	—	—	—	—	—	—	—
	N	Rc	—	●	●	●	●	●	●	●
	F	NPT	—	●	●	●	●	●	●	●
		G	—	●	●	●	●	●	●	●
+										
④ Port size	M5	M5	●	—	—	—	—	—	—	—
	01	1/8	—	●	—	—	—	—	—	—
	02	1/4	—	●	●	●	●	—	—	—
	03	3/8	—	—	●	●	●	—	—	—
	04	1/2	—	—	—	—	●	—	—	—
	06	3/4	—	—	—	—	●	●	—	—
	10	1	—	—	—	—	—	●	●	—
+										
a	—	Without mounting option	●	●	●	●	●	●	●	●
	B <small>Note 3)</small>	With bracket	●	●	●	●	●	●	●	●
	H	With set nut (for panel fitting)	●	●	●	●	●	—	—	—
+										
b	—	Without pressure gauge	●	●	●	●	●	●	●	●
	E	Square embedded type pressure gauge (with limit indicator)	—	●	●	●	●	●	●	●
	G	Round type pressure gauge (without limit indicator)	●	—	—	—	—	—	—	—
		Round type pressure gauge (with limit indicator)	—	●	●	●	●	●	●	●
	M	Round type pressure gauge (with colour zone)	—	●	●	●	●	●	●	●
Digital pressure switch	E1 <small>Note 4)</small>	Output: NPN output / Electrical entry: Wiring bottom entry	—	●	●	●	●	●	●	●
	E2 <small>Note 4)</small>	Output: NPN output / Electrical entry: Wiring top entry	—	●	●	●	●	●	●	●
	E3 <small>Note 4)</small>	Output: PNP output / Electrical entry: Wiring bottom entry	—	●	●	●	●	●	●	●
	E4 <small>Note 4)</small>	Output: PNP output / Electrical entry: Wiring top entry	—	●	●	●	●	●	●	●

# Regulator *Series AR10 to AR60*

## Regulator with Backflow Function *Series AR20K to AR60K*



AR20, AR20K    AR40, AR40K

	Symbol	Description	①								
			Body size								
			10	20	25	30	40	50	60		
6 Semi-standard	c	— <sup>Note 5)</sup>	0.05 to 0.85 MPa setting	●	●	●	●	●	●	●	
		1 <sup>Note 6)</sup>	0.02 to 0.2 MPa setting	●	●	●	●	●	●	●	
			+								
	d	Exhaust mechanism	—	Relieving type	●	●	●	●	●	●	●
			N	Non-relieving type	●	●	●	●	●	●	●
			+								
	e	Flow direction	—	Flow direction: Left to right	●	●	●	●	●	●	●
			R	Flow direction: Right to left	●	●	●	●	●	●	●
			+								
	f	Knob	—	Downward	●	●	●	●	●	●	●
Y			Upward	●	●	●	●	●	●	●	
		+									
g	Pressure unit	—	Name plate and pressure gauge in imperial units: MPa	●	●	●	●	●	●	●	
		Z <sup>Note 7)</sup>	Name plate and pressure gauge in imperial units: psi	○ <sup>Note 9)</sup>	○ <sup>Note 9)</sup>	○ <sup>Note 9)</sup>	○ <sup>Note 9)</sup>	○ <sup>Note 9)</sup>	○ <sup>Note 9)</sup>	○ <sup>Note 9)</sup>	
		ZA <sup>Note 8)</sup>	Digital pressure switch: With unit conversion function	—	△ <sup>Note 10)</sup>	△ <sup>Note 10)</sup>	△ <sup>Note 10)</sup>	△ <sup>Note 10)</sup>	△ <sup>Note 10)</sup>	△ <sup>Note 10)</sup>	

Note 1) The AR10 type comes with a backflow function as a standard feature. (K is not available.) When using the AR10 type as w/ backflow function, backflow may not occur with the set pressure 0.15 MPa or less. Please set the inlet pressure to at least 0.05 MPa higher than the set pressure.

Note 2) Option B, G, H and M are not assembled and supplied loose at the time of shipment.

Note 3) Assembly of a bracket and set nuts (AR10, AR20(K) to AR40(K))  
Including 2 mounting screws for the AR50(K) and AR60(K)

Note 4) When choosing with H (panel mount), the installation space for lead wires will be limited. In this case, select "wiring top entry" for the electrical entry. (Select "wiring bottom entry" when the semi-standard Y is chosen simultaneously.)

Note 5) Only the AR10 has a pressure setting of 0.05 to 0.7 MPa.

Note 6) The only difference from the standard specifications is the adjusting spring for the regulator. It does not restrict the setting of 0.2 MPa or more. When the pressure gauge is attached, a 0.2 MPa pressure gauge will be fitted.

Note 7) For thread type: M5 and NPT. This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.)  
The digital pressure switch will be equipped with the unit conversion function, setting to psi initially.

Note 8) For options: E1, E2, E3, E4. This product is for overseas use only according to the new Measurement Law. (The SI unit is provided for use in Japan.)

Note 9) ○: For thread type: M5 and NPT only

Note 10) △: Select with options: E1, E2, E3, E4.

### Standard Specifications

Model	AR10	AR20(K)	AR25(K)	AR30(K)	AR40(K)	AR40(K)-06	AR50(K)	AR60(K)
<b>Port size</b>	M5 x 0.8	1/8, 1/4	1/4, 3/8	1/4, 3/8	1/4, 3/8, 1/2	3/4	3/4, 1	1
<b>Pressure gauge port size</b> <sup>Note 1)</sup>	1/16 <sup>Note 2)</sup>	1/8		1/4				
<b>Fluid</b>	Air							
<b>Ambient and fluid temperature</b> <sup>Note 3)</sup>	-5 to 60°C (with no freezing)							
<b>Proof pressure</b>	1.5 MPa							
<b>Maximum operating pressure</b>	1.0 MPa							
<b>Set pressure range</b>	0.05 to 0.7 MPa	0.05 to 0.85 MPa						
<b>Relief pressure</b> <sup>Note 4)</sup>	Set pressure + 0.05 MPa [at relief flow rate of 0.1 ℓ/min (ANR)]							
<b>Construction</b>	Relieving type							
<b>Mass (kg)</b>	0.06	0.26	0.21	0.29	0.44	0.47	1.17	1.22

Note 1) Pressure gauge connection threads are not available for F.R.L. unit with a square embedded type pressure gauge (AR20(K) to AR60(K)).

Note 2) Use a bushing (part no:131368) when connecting the R1/8 pressure gauge to the Rc1/16.

Note 3) -5 to 50°C for the products with the digital pressure switch.

Note 4) Not applicable to the AR10.

# Series AR10 to AR60

# Series AR20K to AR60K

## Options/Part No.

Option		Model	AR10	AR20(K)	AR25(K)	AR30(K)	AR40(K)	AR40(K)-06	AR50(K)	AR60(K)	
Bracket assembly <sup>Note 1)</sup>			AR10P-270AS	AR20P-270AS	AR25P-270AS	AR30P-270AS	AR40P-270AS		AR50P-270AS <sup>Note 2)</sup>		
Set nut			AR10P-260S	AR20P-260S	AR25P-260S	AR30P-260S	AR40P-260S		— <sup>Note 3)</sup>	— <sup>Note 3)</sup>	
Pressure gauge	Round type <sup>Note 4)</sup>	Standard	G27-10-R1	G36-10-□01			G46-10-□02				
		0.02 to 0.2 MPa setting	G27-10-R1 <sup>Note 5)</sup>	G36-2-□01			G46-2-□02				
	Round type (with colour zone) <sup>Note 4)</sup>	Standard	—	G36-10-□01-L			G46-10-□02-L				
		0.02 to 0.2 MPa setting	—	G36-2-□01-L			G46-2-□02-L				
	Square embedded type <sup>Note 6)</sup>	Standard	—	GC3-10AS [GC3P-010AS (Pressure gauge cover only)]							
		0.02 to 0.2 MPa setting	—	GC3-2AS [GC3P-010AS (Pressure gauge cover only)]							
Digital pressure switch	NPN output: Wiring bottom entry		—	ISE35-N-25-MLA [ISE35-N-25-M (Switch body only)] <sup>Note 7)</sup>							
	NPN output: Wiring top entry			ISE35-R-25-MLA [ISE35-R-25-M (Switch body only)] <sup>Note 7)</sup>							
	PNP output: Wiring bottom entry			ISE35-N-65-MLA [ISE35-N-65-M (Switch body only)] <sup>Note 7)</sup>							
	PNP output: Wiring top entry			ISE35-R-65-MLA [ISE35-R-65-M (Switch body only)] <sup>Note 7)</sup>							

Note 1) Assembly includes a bracket and set nuts

Note 2) Assembly includes a bracket and 2 mounting screws

Note 3) Please consult with SMC regarding the set nuts for the AR50(K) and AR60(K).

Note 4) □ in part numbers for a round pressure gauge indicates a type of connection thread. No indication is necessary for R; however, indicate N for NPT. Please contact SMC regarding the connection thread NPT and pressure gauge supply for psi unit specifications.

Note 5) Pressure gauge for general purpose

Note 6) Including one O-ring and 2 mounting screws. [ ]: Pressure gauge cover only

Note 7) Lead wire with connector (2 m), adapter, lock pin, O-ring (1 pc.), mounting screw (2 pcs.) are attached. [ ]: Switch body only

Also, regarding how to order the digital pressure switch, please refer to page 89.

## ⚠ Specific Product Precautions

Be sure to read this before handling. Refer to “Precautions for Handling Pneumatic Devices” (M-03-E3A) for Safety Instructions and F.R.L. Units Precautions.

### Selection

#### ⚠ Warning

- Residual pressure disposal (outlet pressure removal) is not possible for the AR20 to AR60 even though the inlet pressure is exhausted. When the residual pressure disposal is performed, use the regulator with a backflow function (AR20K to AR60K).

### Maintenance

#### ⚠ Warning

- When using the regulator with backflow function between a solenoid valve and an actuator, check the pressure gauge periodically. Sudden pressure fluctuations may shorten the durability of the pressure gauge. A digital pressure gauge is recommended for such situation or as deemed necessary.

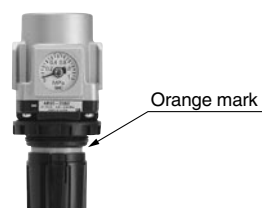
### Mounting and Adjustment

#### ⚠ Warning

- Set the regulator while verifying the displayed values of the inlet and outlet pressure gauges. Turning the regulator knob excessively can cause damage to the internal parts.
- The pressure gauge included with regulators for 0.02 to 0.2 MPa setting is for up to 0.2 MPa use only (except the AR10). Exceeding 0.2 MPa of pressure can damage the gauge.
- Do not use tools on the pressure regulator knob as this may cause damage. It must be operated manually.

#### ⚠ Caution

- Be sure to unlock the knob before adjusting the pressure and lock it after setting the pressure. Failure to follow this procedure can cause damage to the knob and the outlet pressure may fluctuate.
  - Pull the pressure regulator knob to unlock. (You can visually verify this with the “orange mark” that appears in the gap.)
  - Push the pressure regulator knob to lock. When the knob is not easily locked, turn it left and right a little and then push it (when the knob is locked, the “orange mark”, i.e., the gap will disappear).

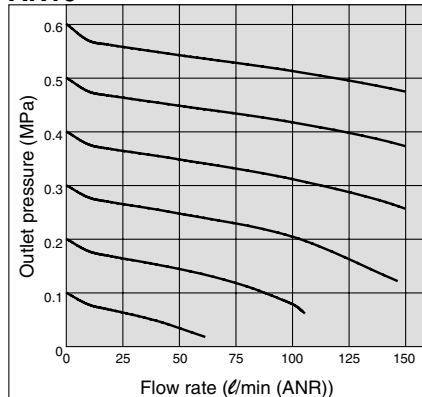


- A knob cover is available to prevent careless operation of the knob. Refer to page 90 for details.

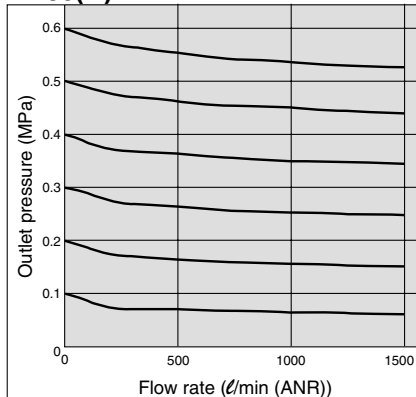
### Flow Characteristics (Representative values)

Condition: Inlet pressure 0.7 MPa

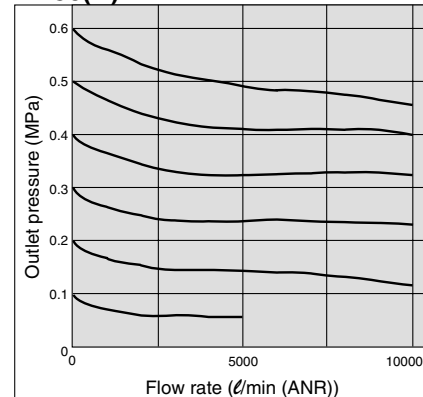
**AR10** M5



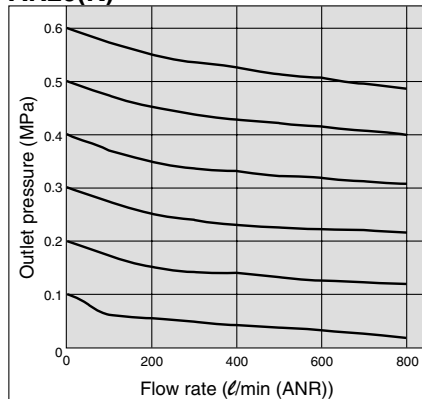
**AR30(K)** Rc3/8



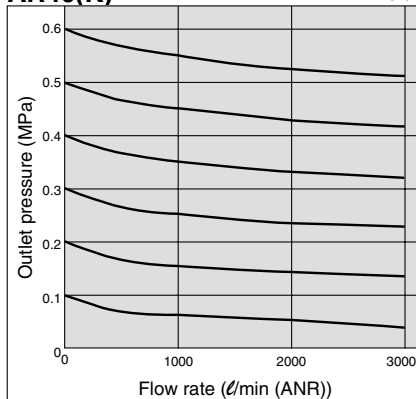
**AR50(K)** Rc1



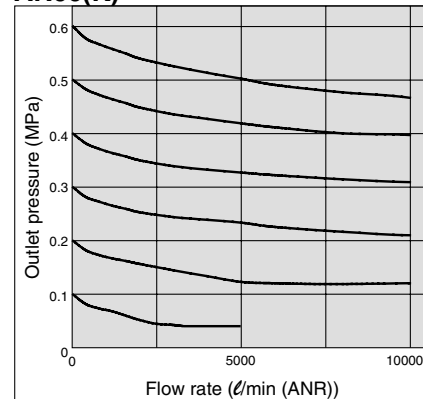
**AR20(K)** Rc1/4



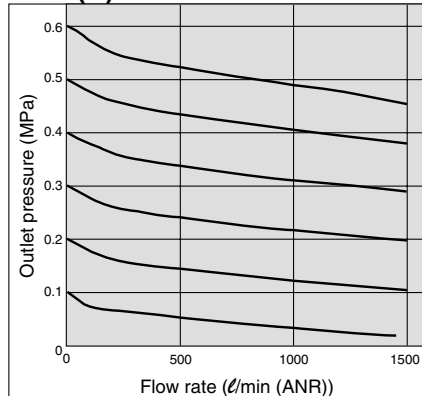
**AR40(K)** Rc1/2



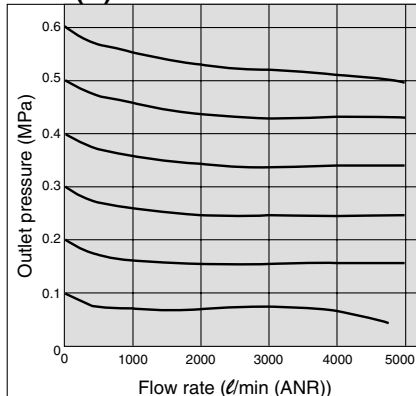
**AR60(K)** Rc1



**AR25(K)** Rc3/8



**AR40(K)-06** Rc3/4



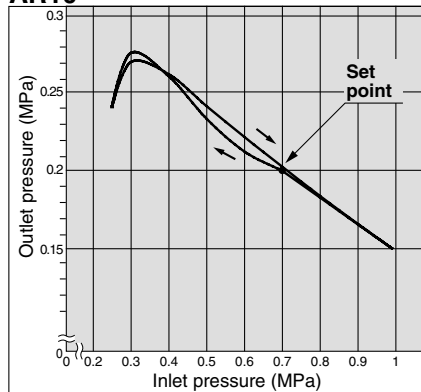
# Series AR10 to AR60

## Series AR20K to AR60K

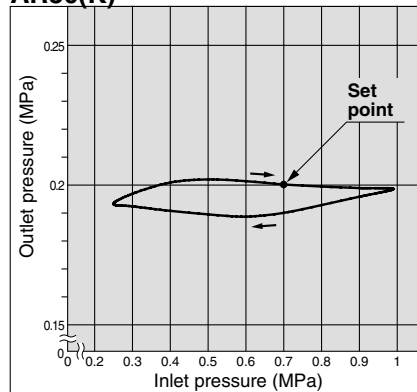
### Pressure Characteristics (Representative values)

Conditions: Inlet pressure 0.7 MPa, Outlet pressure 0.2 MPa, Flow rate 20 l/min (ANR)

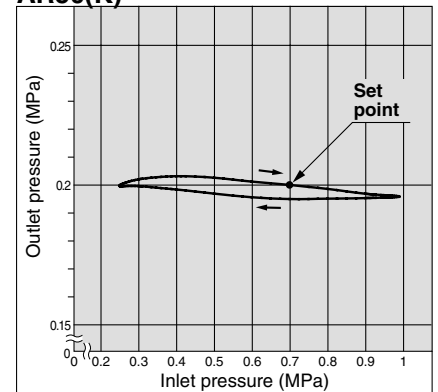
**AR10**



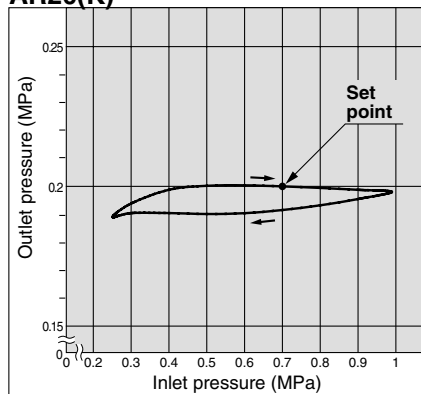
**AR30(K)**



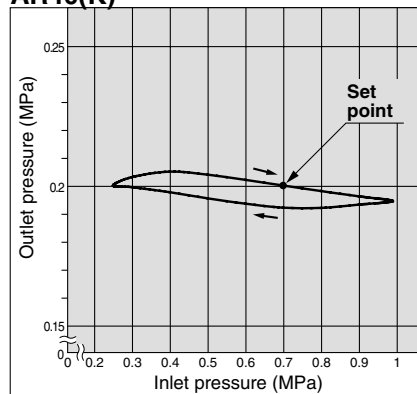
**AR50(K)**



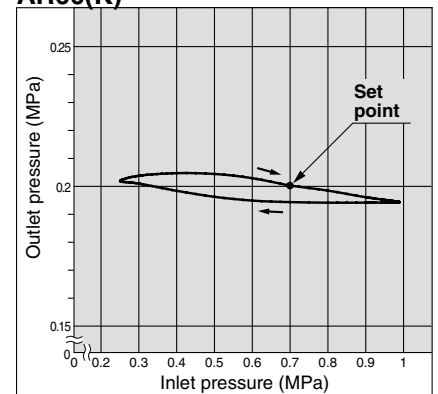
**AR20(K)**



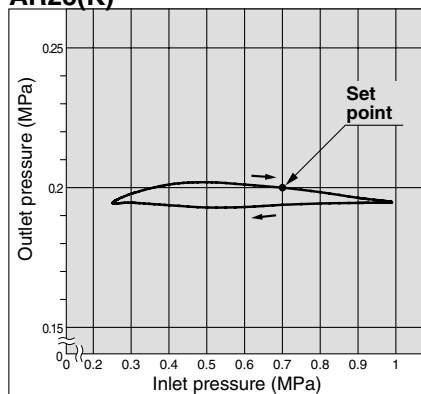
**AR40(K)**



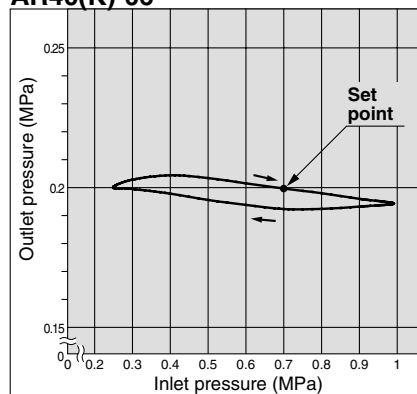
**AR60(K)**



**AR25(K)**

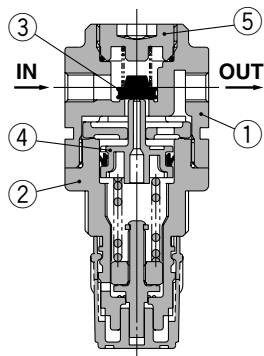


**AR40(K)-06**

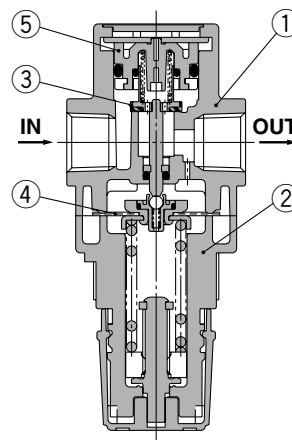


## Construction

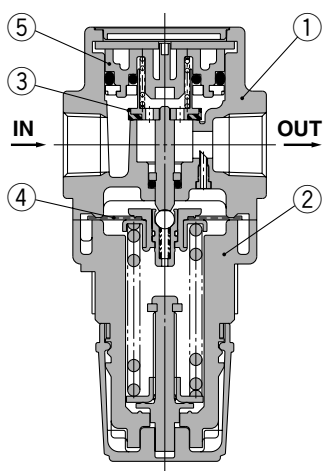
**AR10**



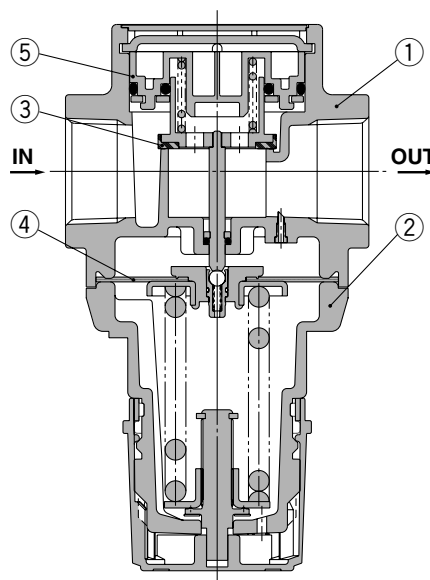
**AR20(K), AR25(K)**



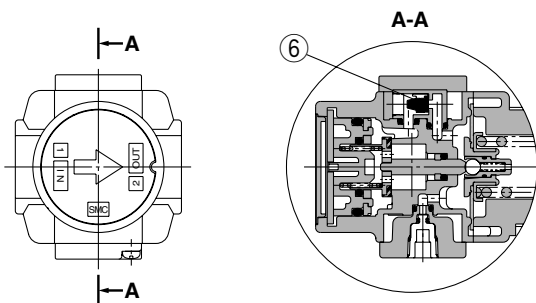
**AR30(K), AR40(K)**



**AR50(K), AR60(K)**



**AR20K to AR60K (Regulator with Backflow Function)**



## Component Parts

No.	Description	Material	Model	Color
1	Body	Zinc die-cast	AR10, AR20(K)	Platinum silver
		Aluminum die-cast	AR25(K) to AR60(K)	
2	Bonnet	Polyacetal	AR10, AR20(K) to AR40(K)-06	Black
		Aluminum die-cast	AR50(K), AR60(K)	

## Replacement Parts

No.	Description	Material	Part no.						
			AR10	AR20(K)	AR25(K)	AR30(K)	AR40(K)	AR40(K)-06	AR50(K)
3	Valve assembly	Brass, HNBR	AR10P-090S	AR20P-410S	AR25P-410S	AR30P-410S	AR40P-410S	AR50P-410S	AR60P-410S
4	Diaphragm assembly	Weatherable NBR	AR10P-150AS <sup>Note 1)</sup>	AR20P-150AS	AR25P-150AS	AR30P-150AS	AR40P-150AS	AR50P-150AS	
5	Valve guide assembly	Polyacetal	131329	AR20P-050AS	AR25P-050AS	AR30P-050AS	AR40P-050AS	AR50P-050AS	AR60P-050AS
6	Check valve assembly <sup>Note 2)</sup>	—	—	AR20KP-020AS					

Note 1) The AR10 is a piston type. Assembly of a piston and a seal (KSYP-13).

Note 2) Check valve assembly is applicable for a regulator with backflow function (AR20K to AR60K) only.

Assembly of a check valve cover, check valve body assembly and 2 screws

# Series AR10 to AR60

## Series AR20K to AR60K

### Working Principle (Regulator with Backflow Function)

#### AR10

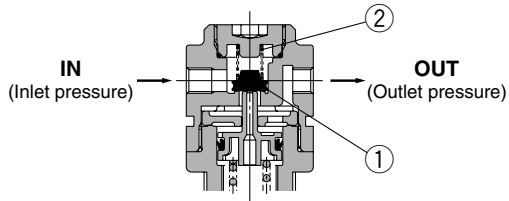


Figure 1

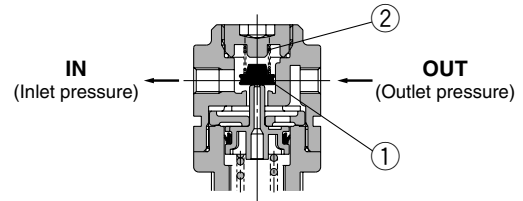


Figure 2

When the inlet pressure is higher than the regulating pressure, the check valve operates as a normal regulator (Figure 1).

When the inlet pressure is shut off and exhausted, any inlet pressure applied to the valve ① will be lost. The force for seating valve ① is the valve spring ② force only. When valve ① is opened using the outlet force, the outlet pressure will be exhausted at the inlet side. (Figure 2)

When the set pressure is 0.15 MPa or less, valve ① may not open due to the force of valve spring ②.

#### AR20K to AR60K

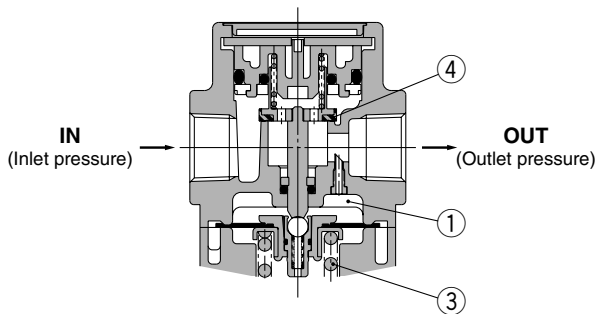
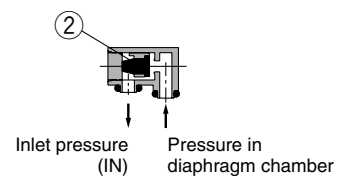
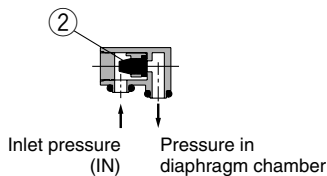
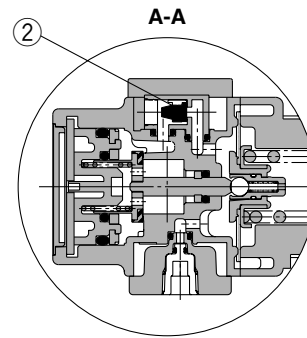
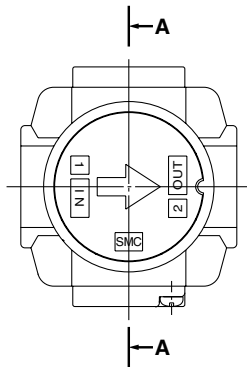


Figure 1 Normal

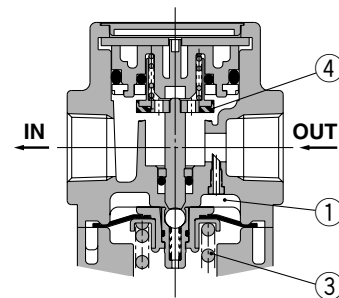


Figure 2 Backflow

When the inlet pressure is higher than the regulating pressure, check valve ② closes and operates as a normal regulator (Figure 1).

When the inlet pressure is shut off and released, check valve ② opens and the pressure in diaphragm chamber ① is released into the inlet side (Figure 2).

This lowers the pressure in diaphragm chamber ① and the force generated by pressure regulator spring ③ lifts the diaphragm. Valve ④ opens through the stem, and the outlet pressure is released to the inlet side (Figure 2).

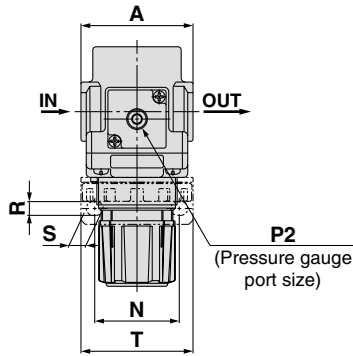
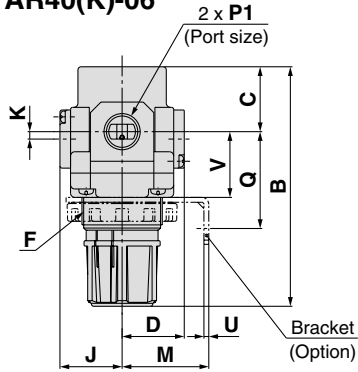


# Regulator **Series AR10 to AR60**

## Regulator with Backflow Function **Series AR20K to AR60K**

### Dimensions

#### AR10, AR20(K) to AR40(K)-06



Panel fitting dimension

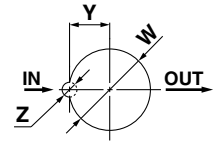
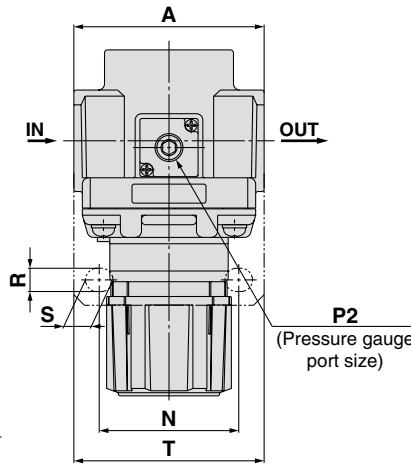
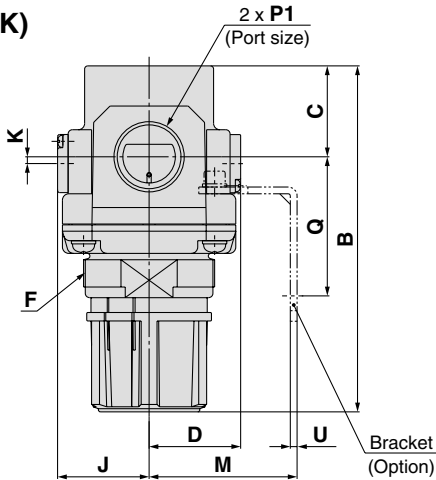


Plate thickness  
AR10, AR20(K) to AR30(K): Max. 3.5  
AR40(K): Max. 5

#### AR50(K), AR60(K)



Applicable model	AR20(K) to AR60(K)		AR10, AR20(K) to AR60(K)	AR20(K) to AR60(K)
Option	Square embedded type pressure gauge	Digital pressure switch	Round type pressure gauge	Round type pressure gauge (with colour zone)
Dimensions	Centre of piping	Centre of piping	Centre of piping	

Model	Standard specifications									Optional specifications							
	P1	P2	A	B <sup>Note 1)</sup>	C	D	F	J	K	Square type pressure gauge	Digital pressure switch	Round type pressure gauge	Round type pressure gauge (with colour zone)				
AR10	M5 x 0.8	1/16	25	58	11	12.5	M18 x 1	13	0	—	—	—	—	ø26	26	—	—
AR20(K)	1/8, 1/4	1/8	40	94	26.5	28.5	M28 x 1	28.5	2 <sup>Note 2)</sup>	□28	29.5	□27.8	40	ø37.5	65	ø37.5	65
AR25(K)	1/4, 3/8	1/8	53	101	28	27.5	M32 x 1.5	27.5	0	□28	28.5	□27.8	39	ø37.5	64	ø37.5	64
AR30(K)	1/4, 3/8	1/8	53	116	31	29.5	M38 x 1.5	29.5	3.5	□28	30.5	□27.8	41	ø37.5	66	ø37.5	66
AR40(K)	1/4, 3/8, 1/2	1/4	70	128	36	34	M42 x 1.5	34	3.5	□28	35	□27.8	45	ø42.5	74	ø42.5	74
AR40(K)-06	3/4	1/4	75	129	36	34	M42 x 1.5	34	3	□28	35	□27.8	45	ø42.5	74	ø42.5	74
AR50(K)	3/4, 1	1/4	90	169	43	43.5	M62 x 1.5	43.5	3.3	□28	44.5	□27.8	55	ø42.5	84	ø42.5	84
AR60(K)	1	1/4	95	176	46	43.5	M62 x 1.5	43.5	3.3	□28	44.5	□27.8	55	ø42.5	84	ø42.5	84

Model	Optional specifications										
	Bracket mount							Panel mount			
	M	N	Q	R	S	T	U	V	W	Y	Z
AR10	25	28	30	4.5	6.5	40	2	18	18.5	—	—
AR20(K)	30	34	44	5.4	15.4	55	2.3	25	28.5	14	6
AR25(K)	30	34	44	5.4	15.4	55	2.3	26	32.5	16	6
AR30(K)	41	40	46	6.5	8	53	2.3	31	38.5	19	7
AR40(K)	50	54	54	8.5	10.5	70	2.3	35.5	42.5	21	7
AR40(K)-06	50	54	56	8.5	10.5	70	2.3	37	42.5	21	7
AR50(K)	70	66	65.8	11	13	90	3.2	—	—	—	—
AR60(K)	70	66	65.8	11	13	90	3.2	—	—	—	—

Note 1) The total length of B dimension is the length when the filter regulator knob is unlocked.  
Note 2) For the AR20 only, the position of the pressure gauge is above the centre of the piping.

# Regulator AR20 to AR60 Made to Order

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



AR30-03-X425

## ① Special Temperature Environment

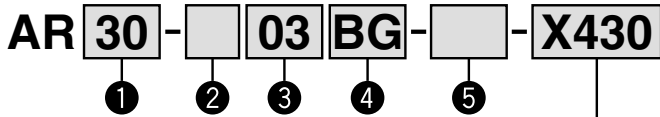
Special materials are used in the manufacturing of seals and resin parts to allow them to withstand various temperature conditions in cold or tropical (hot) climates.

### Specifications

Made-to-order part no.	-X430	-X440
<b>Environment</b>	Low temperature	High temperature
<b>Ambient temperature (°C)</b>	-30 to 60°C	-5 to 80°C
<b>Fluid temperature (°C)</b>	-5 to 60°C (with no freezing)	
<b>Material</b>	<b>Rubber parts</b>	Special NBR
	<b>Main parts</b>	FKM
	Metal (Aluminum die-cast), etc.	

### Applicable Model

Model	AR25	AR30	AR40	AR40-06	AR50	AR60
<b>Port size</b>	1/4, 3/8	1/4, 3/8	1/4, 3/8, 1/2	3/4	3/4, 1	1



- Option/Semi-standard: Select one each for a to g.
- Option/Semi-standard symbol: When more than one specification is required, indicate in ascending alphanumeric order.  
Example) AR30-03BG-1NR-X430

For high/low temperature

<b>X430</b>	Low temperature
<b>X440</b>	High temperature

	Symbol	Description	① Body size				
			25	30	40	50	60
② Thread type	—	Rc	●	●	●	●	●
	<b>N</b>	NPT	●	●	●	●	●
	<b>F</b>	G	●	●	●	●	●
+							
③ Port size	<b>02</b>	1/4	●	●	●	—	—
	<b>03</b>	3/8	●	●	●	—	—
	<b>04</b>	1/2	—	—	●	—	—
	<b>06</b>	3/4	—	—	●	●	—
<b>10</b>	1	—	—	—	●	●	
+							
④ Option	a Mounting	<b>B</b> Note 2) Without mounting option	●	●	●	●	●
		With bracket	●	●	●	●	●
		<b>H</b> With set nut (for panel fitting)	●	●	●	—	—
+							
b Pressure gauge	G Note 3)	Round type pressure gauge (without limit indicator)	●	●	●	●	●
			●	●	●	●	●
+							
c Set pressure	1 Note 4)	0.05 to 0.85 MPa setting	●	●	●	●	●
		0.02 to 0.2 MPa setting	●	●	●	●	●
+							
d Exhaust mechanism	N	Relieving type	●	●	●	●	●
		Non-relieving type	●	●	●	●	●
+							
e Flow direction	R	Flow direction: Left to right	●	●	●	●	●
		Flow direction: Right to left	●	●	●	●	●
+							
f Knob	Y	Downward	●	●	●	●	●
		Upward	●	●	●	●	●
+							
g Pressure unit	Z Note 5)	Name plate and pressure gauge in imperial units: MPa	●	●	●	●	●
		Name plate and caution plate for bowl in imperial units: psi	○	○	○	○	○

- Note 1) Option B, G, H are not assembled and supplied loose at the time of shipment.  
 Note 2) Assembly includes a bracket and set nuts (AR25 to AR40)  
 Includes 2 mounting screws for the AR50 and AR60  
 Note 3) Mounting thread for pressure gauge: 1/8 for the AR25 to AR30; 1/4 for the AR40 to AR60. Pressure gauge type: G43  
 Note 4) The only difference from the standard specifications is the adjusting spring for the regulator. It does not restrict the setting of 0.2 MPa or more. When the pressure gauge is attached, a 0.2 MPa pressure gauge will be fitted.  
 Note 5) For thread type: NPT. This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.)  
 Note 6) ○: For thread type: NPT only

## ② High Pressure

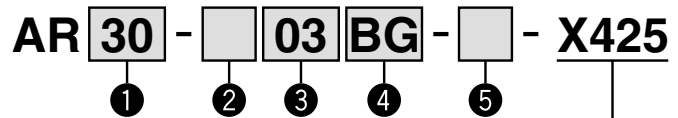
Strong materials are used in the manufacturing of air filters intended for high pressure operation. Also, construction modification allows a wider regulating pressure range.

### Specifications

Made-to-order part no.	-X425
<b>Proof pressure (MPa)</b>	3.0
<b>Maximum operating pressure (MPa)</b>	2.0
<b>Set pressure range (MPa)</b>	0.1 to 1.6
<b>Ambient and fluid temperature (°C)</b>	-5 to 60°C (with no freezing)

### Applicable Model

Model	AR20	AR25	AR30	AR40	AR40-06	AR50	AR60
<b>Port size</b>	1/8, 1/4	1/4, 3/8	1/4, 3/8	1/4, 3/8, 1/2	3/4	3/4, 1	1



For high pressure

- Option/Semi-standard: Select one each for a to f.
- Option/Semi-standard symbol: When more than one specification is required, indicate in ascending alphabetic order.  
Example) AR30-03BG-NR-X425

	Symbol	Description	① Body size					
			20	25	30	40	50	60
② Thread type	—	Rc	●	●	●	●	●	●
	<b>N</b>	NPT	●	●	●	●	●	●
	<b>F</b>	G	●	●	●	●	●	●
+								
③ Port size	<b>01</b>	1/8	●	—	—	—	—	—
	<b>02</b>	1/4	●	●	●	—	—	—
	<b>03</b>	3/8	—	●	●	—	—	—
	<b>04</b>	1/2	—	—	●	—	—	—
	<b>06</b>	3/4	—	—	—	●	●	—
<b>10</b>	1	—	—	—	—	●	●	
+								
④ Option	a Mounting	<b>B</b> Note 2) Without mounting option	●	●	●	●	●	●
		With bracket	●	●	●	●	●	●
		<b>H</b> With set nut (for panel fitting)	●	●	●	—	—	—
+								
b Pressure gauge	G Note 3)	Round type pressure switch (with limit indicator)	●	●	●	●	●	●
			●	●	●	●	●	●
+								
c Exhaust mechanism	N	Relieving type	●	●	●	●	●	●
		Non-relieving type	●	●	●	●	●	●
+								
d Flow direction	R	Flow direction: Left to right	●	●	●	●	●	●
		Flow direction: Right to left	●	●	●	●	●	●
+								
e Knob	Y	Downward	●	●	●	●	●	●
		Upward	●	●	●	●	●	●
+								
f Pressure unit	Z Note 4)	Name plate and pressure gauge in imperial units: MPa	●	●	●	●	●	●
		Name plate and caution plate for bowl in imperial units: psi	○	○	○	○	○	○

- Note 1) Option B, G, H are not assembled and supplied loose at the time of shipment.  
 Note 2) Assembly includes a bracket and set nuts (AR20 to AR40)  
 Includes 2 mounting screws for the AR50 and AR60  
 Note 3) Mounting thread for pressure gauge: 1/8 for AR20 to AR30, 1/4 for AR40 to AR60. Pressure gauge type: G46-20-□  
 Note 4) For thread type: NPT. This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.)  
 Note 5) ○: For thread type: NPT only

# Regulator *AR10 to AR60* Regulator with Backflow Function *AR20K to AR60K* Made to Order



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

## ③ 0.4 MPa Setting

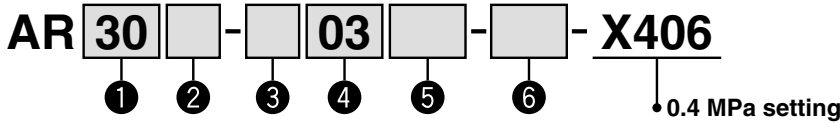
The maximum set pressure is 0.4 MPa. When a pressure gauge is included, the display will show a range from 0 to 0.4 MPa.

### Specifications

Proof pressure	1.5 MPa
Maximum operating pressure	1.0 MPa
Set pressure range	0.05 to 0.4 MPa

### Applicable Model

Model	AR10	AR20(K)	AR25(K)	AR30(K)	AR40(K)	AR40(K)-06	AR50(K)	AR60(K)
Port size	M5	1/8, 1/4	1/4, 3/8	1/4, 3/8	1/4, 3/8, 1/2	3/4	3/4, 1	1



- Option/Semi-standard: Select one each for a to f.
- Option/Semi-standard symbol: When more than one specification is required, indicate in ascending alphabetic order.  
Example) AR30K-03BE-NR-X406

	Symbol	Description	①							
			Body size							
			10	20	25	30	40	50	60	
②	—	Without backflow function	●	●	●	●	●	●	●	
	K <small>Note 1)</small>	With backflow function	—	●	●	●	●	●	●	
③	+	Metric thread (M5)	●	—	—	—	—	—	—	
	—	Rc	—	●	●	●	●	●	●	
	N	NPT	—	●	●	●	●	●	●	
	F	G	—	●	●	●	●	●	●	
④	+	M5	●	—	—	—	—	—	—	
	01	1/8	—	●	—	—	—	—	—	
	02	1/4	—	●	●	—	—	—	—	
	03	3/8	—	—	●	●	—	—	—	
	04	1/2	—	—	—	●	●	—	—	
	06	3/4	—	—	—	—	●	●	—	
	10	1	—	—	—	—	—	●	●	
⑤	a	—	Without mounting option	●	●	●	●	●	●	
		B <small>Note 3)</small>	With bracket	●	●	●	●	●	●	
		H	With set nut (for panel fitting)	●	●	●	●	—	—	
	b	Pressure gauge	—	Without pressure gauge	●	●	●	●	●	●
			E	Square embedded type pressure gauge (with limit indicator)	—	●	●	●	●	●
			G	Round type pressure gauge (without limit indicator)	●	—	—	—	—	—
			M	Round type pressure gauge (with limit indicator)	—	●	●	●	●	●
		Digital pressure switch	E1 <small>Note 4)</small>	Output: NPN output / Electrical entry: Wiring bottom entry	—	●	●	●	●	●
			E2 <small>Note 4)</small>	Output: NPN output / Electrical entry: Wiring top entry	—	●	●	●	●	●
			E3 <small>Note 4)</small>	Output: PNP output / Electrical entry: Wiring bottom entry	—	●	●	●	●	●
E4 <small>Note 4)</small>	Output: PNP output / Electrical entry: Wiring top entry		—	●	●	●	●	●		
⑥	c	—	Relieving type	●	●	●	●	●	●	
		N	Non-relieving type	●	●	●	●	●	●	
	d	—	Flow direction: Left to right	●	●	●	●	●	●	
		R	Flow direction: Right to left	●	●	●	●	●	●	
	e	—	Downward	●	●	●	●	●	●	
		Y	Upward	●	●	●	●	●	●	
f	—	Name plate and pressure gauge in imperial units: MPa	●	●	●	●	●	●		
	Z <small>Note 5)</small>	Name plate and pressure gauge in imperial units: psi	○ <small>Note 7)</small>	○ <small>Note 7)</small>	○ <small>Note 7)</small>	○ <small>Note 7)</small>	○ <small>Note 7)</small>	○ <small>Note 7)</small>		
	ZA <small>Note 6)</small>	Digital pressure switch: With unit switching function	—	△ <small>Note 8)</small>	△ <small>Note 8)</small>	△ <small>Note 8)</small>	△ <small>Note 8)</small>	△ <small>Note 8)</small>		

Note 1) The AR10 type comes with a backflow function as a standard feature. (K is not available.) When using the AR10 type as w/ backflow function, backflow may not occur with the set pressure 0.15 MPa or less. Please set the inlet pressure to at least 0.05 MPa higher than the set pressure.

Note 2) Option B, G and H are not assembled and supplied loose at the time of shipment.

Note 3) Assembly of a bracket and set nuts (AR10, AR20(K) to AR40(K)) Includes 2 mounting screws for the AR50(K), AR60(K)

Note 4) When choosing with H (panel mount), the installation space for lead wires will not be secured. In this case, select "wiring top entry" for the electrical entry.

(Select "wiring bottom entry" when the semi-standard Y is chosen simultaneously.)

Note 5) For thread type: M5 and NPT. This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.) The digital pressure switch will be equipped with the unit conversion function, setting to psi initially.

Note 6) For options: E1, E2, E3, E4. This product is for overseas use only according to the new Measurement Law. (The SI unit is provided for use in Japan.)

Note 7) ○: For thread type: M5 and NPT only

Note 8) △: Select with options: E1, E2, E3, E4.