

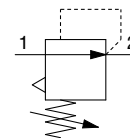
Regulator

AR20-B to AR60-B

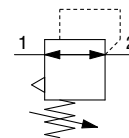
Regulator with Backflow Function

AR20K-B to AR60K-B

Symbol
Regulator



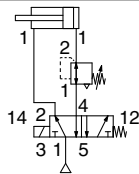
Regulator with
Backflow Function



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

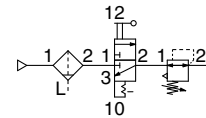
Example 1)

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

Refer to page 65 for size 10.

AR **30** **K** - **03** **BE** - **B** -

1 2 3 4 5 6

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

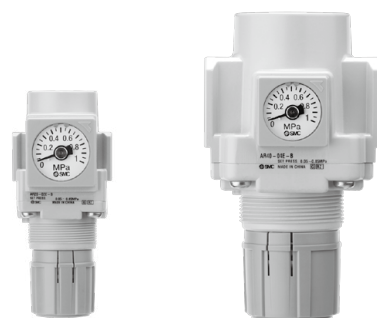
• Made to order

(Refer to pages 77 to 79 for details.)

		Symbol	Description	①						
				Body size						
				20	25	30	40	50	60	
②	With backflow function	Nil	Without backflow function	●	●	●	●	●	●	
		K*1	With backflow function	●	●	●	●	●	●	
+										
③	Pipe thread type	Nil	Rc	●	●	●	●	●	●	
		N	NPT	●	●	●	●	●	●	
		F	G	●	●	●	●	●	●	
+										
④	Port size	01	1/8	●	—	—	—	—	—	
		02	1/4	●	●	●	●	—	—	
		03	3/8	—	●	●	●	—	—	
		04	1/2	—	—	—	●	—	—	
		06	3/4	—	—	—	●	●	—	
		10	1	—	—	—	—	●	●	
+										
⑤	a	Mounting	Nil	Without mounting option	●	●	●	●	●	●
			B*3	With bracket	●	●	●	●	●	●
			H	With set nut (for panel mount)	●	●	●	●	—	—
	+									
	b	Pressure gauge *4	Nil	Without pressure gauge	●	●	●	●	●	●
			E	Square embedded type pressure gauge (with limit indicator)	●	●	●	●	●	●
			G	Round type pressure gauge (with limit indicator)	●	●	●	●	●	●
			M	Round type pressure gauge (with color zone)	●	●	●	●	●	●
		Digital pressure switch *5	E1	Output: NPN output, Electrical entry: Wiring bottom entry	●	●	●	●	●	●
			E2	Output: NPN output, Electrical entry: Wiring top entry	●	●	●	●	●	●
			E3	Output: PNP output, Electrical entry: Wiring bottom entry	●	●	●	●	●	●
			E4	Output: PNP output, Electrical entry: Wiring top entry	●	●	●	●	●	●

Regulator **AR20-B to AR60-B Series**

Regulator with Backflow Function **AR20K-B to AR60K-B Series**



AR20-B, AR20K-B AR40-B, AR40K-B

AC

AF+AR+AL

AW+AL

AF+AR

AF+AFM+AR

AW+AFM

Attachment

AF

AFM / AFD

AR

AL

AW

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

- *1 Set the inlet pressure to at least 0.05 MPa higher than the set pressure.
 *2 Options B, G, H, M are not assembled and supplied loose at the time of shipment.
 *3 Assembly of a bracket and set nuts (applicable to the AR20(K)-B to AR40(K)-B). Including 2 mounting screws for the AR50(K)-B and AR60(K)-B.
 *4 When the pressure gauge is attached, a 1.0 MPa pressure gauge will be fitted for standard (0.85 MPa) type. 0.4 MPa pressure gauge for 0.2 MPa type.
 *5 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.)
 *6 Pressure can be set higher than the specification pressure in some cases, but use pressure within the specification range.

- *7 For pipe thread type: NPT.
 This product is for overseas use only according to the new Measurement Act. (The SI unit type is provided for use in Japan.)
 Cannot be used with M: Round type pressure gauge (with color zone). Available by request for special.
 The digital pressure switch will be equipped with the unit selection function, setting to psi initially.
 *8 For options: E1, E2, E3, E4. This product is for overseas use only according to the new Measurement Act. (The SI unit is provided for use in Japan.)
 *9 ○: For pipe thread type: NPT only
 *10 △: Select with options: E1, E2, E3, E4.

Standard Specifications

Model	AR20-B	AR25-B	AR30-B	AR40-B	AR40-06-B	AR50-B	AR60-B
Port size	1/8, 1/4	1/4, 3/8	1/4, 3/8	1/4, 3/8, 1/2	3/4	3/4, 1	1
Pressure gauge port size *1	1/8						
Fluid	Air						
Ambient and fluid temperature *2	-5 to 60°C (with no freezing)						
Proof pressure	1.5 MPa						
Maximum operating pressure	1.0 MPa						
Set pressure range	0.05 to 0.85 MPa						
Construction	Relieving type						
Weight [kg]	0.16	0.21	0.29	0.44	0.47	1.17	1.22

- *1 Pressure gauge connection threads are not available for F.R.L. unit with a square embedded type pressure gauge or with a digital pressure switch.
 *2 -5 to 50°C for the products with the digital pressure switch

AR20-B to AR60-B Series AR20K-B to AR60K-B Series

Options/Part No.

Option			Model	AR20(K)-B	AR25(K)-B	AR30(K)-B	AR40(K)-B	AR40(K)-06-B	AR50(K)-B	AR60(K)-B	
Bracket assembly *1				AR23P-270AS	AR28P-270AS	AR33P-270AS	AR43P-270AS		AR52P-270AS		
Set nut				AR23P-260S	AR28P-260S	AR33P-260S	AR43P-260S		— *2		
Pressure gauge	Round type *3	Standard	G36-10-□01				G46-10-□01				
		0.02 to 0.2 MPa setting	G36-4-□01				G46-4-□01				
	Round type *3 (with color zone)	Standard	G36-10-□01-L				G46-10-□01-L				
		0.02 to 0.2 MPa setting	G36-4-□01-L				G46-4-□01-L				
	Square *4 embedded type	Standard	GC3-10AS [GC3P-010AS (Pressure gauge cover only)]								
		0.02 to 0.2 MPa setting	GC3-4AS [GC3P-010AS (Pressure gauge cover only)]								
Digital pressure switch *5			NPN output, Wiring bottom entry		ISE35-N-25-MLA [ISE35-N-25-M (Switch body only)]						
			NPN output, Wiring top entry		ISE35-R-25-MLA [ISE35-R-25-M (Switch body only)]						
			PNP output, Wiring bottom entry		ISE35-N-65-MLA [ISE35-N-65-M (Switch body only)]						
			PNP output, Wiring top entry		ISE35-R-65-MLA [ISE35-R-65-M (Switch body only)]						

*1 Assembly of a bracket and set nuts. Including 2 mounting screws for the AR50(K)-B and AR60(K)-B

*2 Please consult with SMC regarding the set nuts for the AR50(K)-B and AR60(K)-B.

*3 □ in part numbers for a round pressure gauge indicates a pipe thread type. No indication is necessary for R; however, indicate N for NPT.

Please contact SMC regarding the pressure gauge supply for psi unit specifications.

*4 Including one O-ring and 2 mounting screws. []: Pressure gauge cover only

*5 In addition to the pressure switch body, lead wire with connector (2 m), adapter, lock pin, O-ring (1 pc.), mounting screw (2 pcs.) are attached.

[]: Switch body only. (Regarding how to order the digital pressure switch, refer to the **Web Catalog**.)

⚠ Specific Product Precautions

Be sure to read this before handling the products. Refer to the back cover for safety instructions. For F.R.L. units precautions, refer to the “Handling Precautions for SMC Products” and the “Operation Manual”, <http://www.smcworld.com>

Selection

⚠ Warning

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

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.

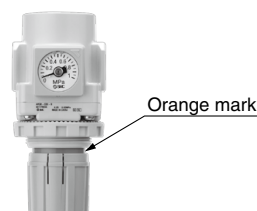
Mounting/Adjustment

⚠ 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.
- 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).



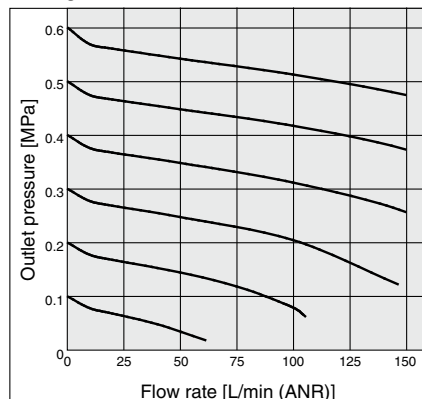
- A knob cover is available to prevent careless operation of the knob. Refer to page 112 for details.

Regulator **AR10-A Series**
 Regulator **AR20-B to AR60-B Series**
 Regulator with Backflow Function **AR20K-B to AR60K-B Series**

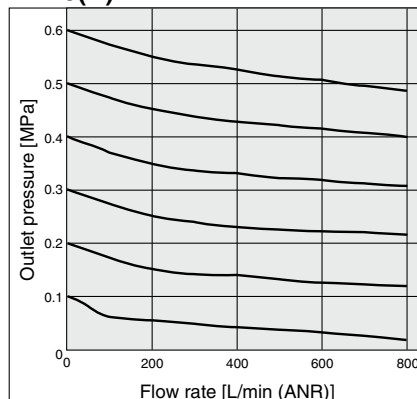
Flow Rate Characteristics (Representative values)

Condition: Inlet pressure of 0.7 MPa

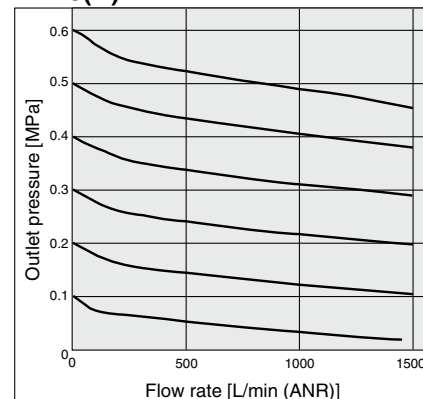
AR10-A M5



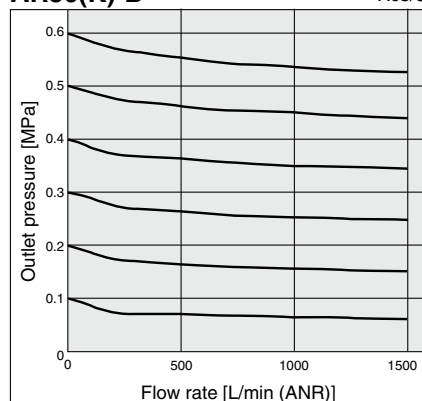
AR20(K)-B Rc1/4



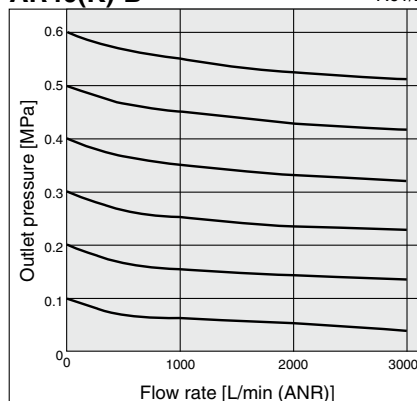
AR25(K)-B Rc3/8



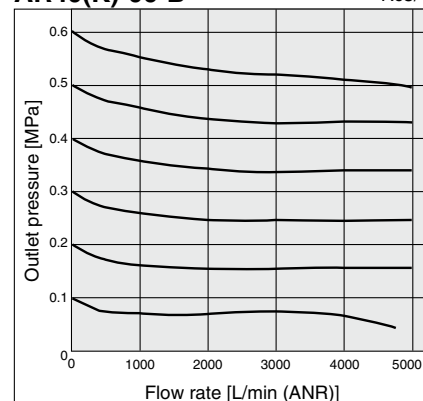
AR30(K)-B Rc3/8



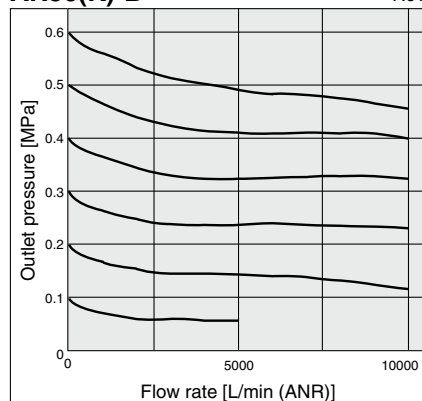
AR40(K)-B Rc1/2



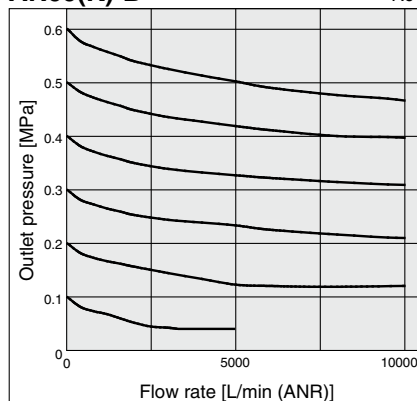
AR40(K)-06-B Rc3/4



AR50(K)-B Rc1



AR60(K)-B Rc1



AC

AF + AR + AL

AW + AL

AF + AR

AF + AFM + AR

AW + AFM

Attachment

AF

AFM / AFD

AR

AL

AW

AR10-A Series

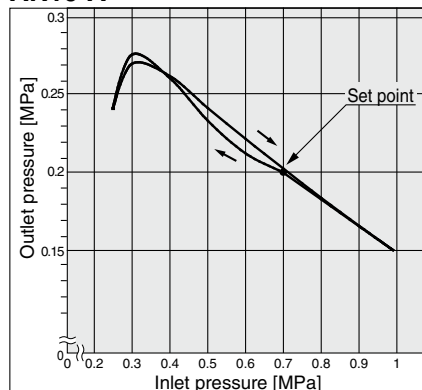
AR20-B to AR60-B Series

AR20K-B to AR60K-B Series

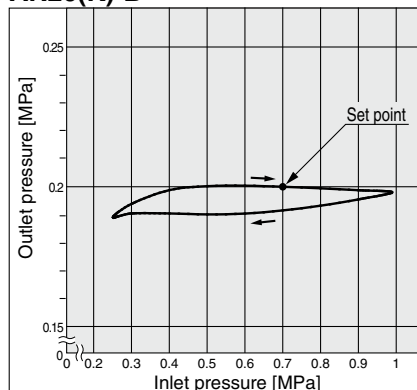
Pressure Characteristics (Representative values)

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

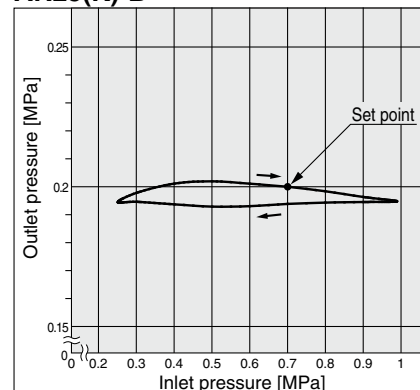
AR10-A



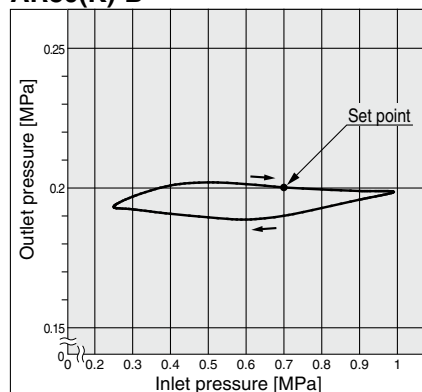
AR20(K)-B



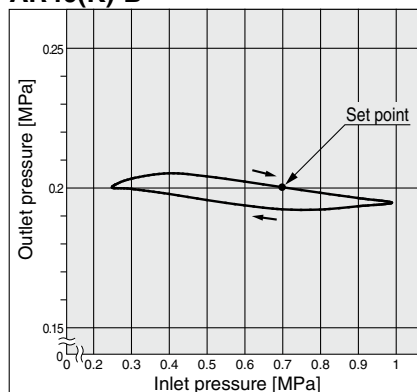
AR25(K)-B



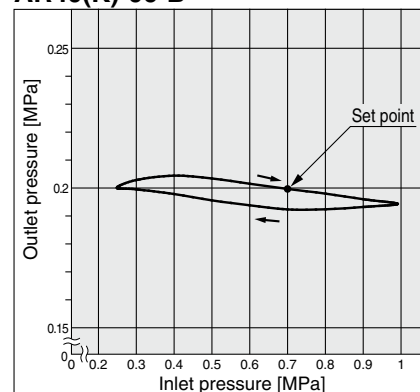
AR30(K)-B



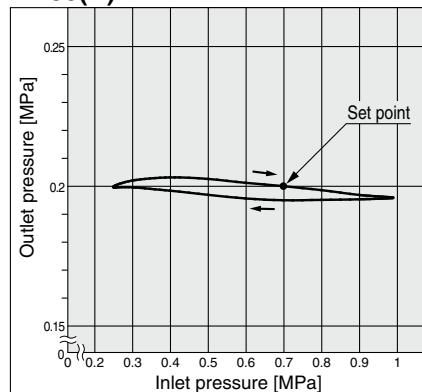
AR40(K)-B



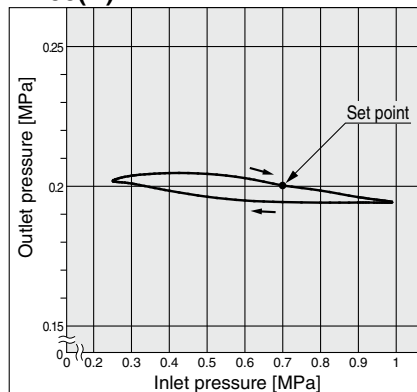
AR40(K)-06-B



AR50(K)-B



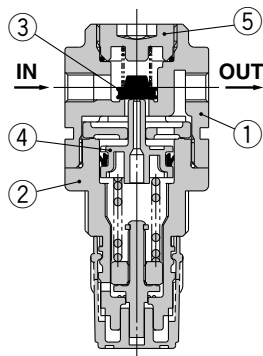
AR60(K)-B



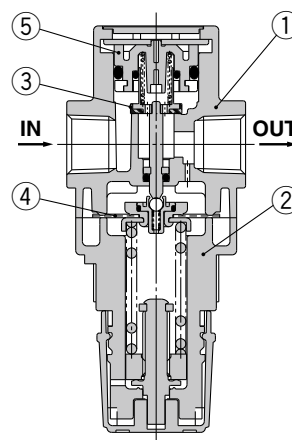
Regulator **AR10-A Series**
 Regulator **AR20-B to AR60-B Series**
 Regulator with Backflow Function **AR20K-B to AR60K-B Series**

Construction

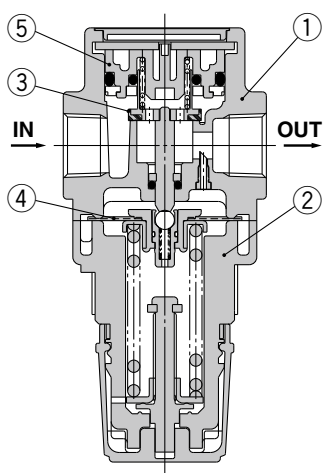
AR10-A



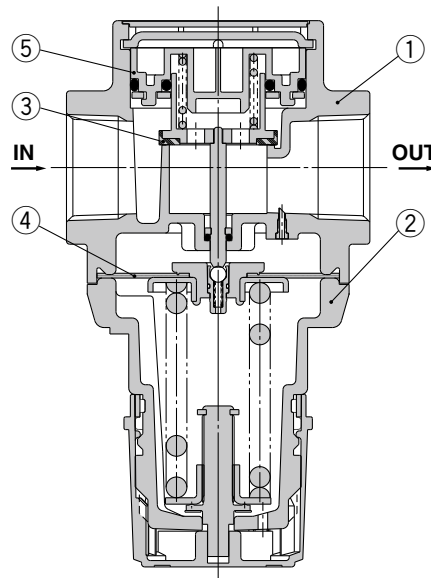
AR20(K)-B/AR25(K)-B



AR30(K)-B/AR40(K)-B



AR50(K)-B/AR60(K)-B



Component Parts

No.	Description	Material	Model	Color
1	Body	Zinc die-cast	AR10-A	White
		Aluminum die-cast	AR20(K)-B to AR60(K)-B	
2	Bonnet	Polyacetal	AR10-A	White
			AR20(K)-B to AR40(K)-B	
		Aluminum die-cast	AR50(K)-B/AR60(K)-B	

Replacement Parts

[AR10-A]

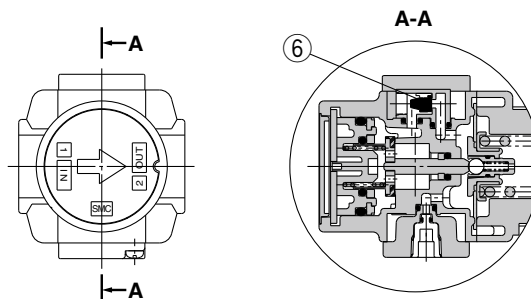
No.	Description	Material	Part no.
3	Valve	HNBR	AR10P-090S
4	Piston assembly	Polyacetal	AR10P-150AS
5	Valve guide assembly	Polyacetal	131329

[AR20(K)-B to AR60(K)-B]

No.	Description	Material	Part no.						
			AR20(K)-B	AR25(K)-B	AR30(K)-B	AR40(K)-B	AR40(K)-06-B	AR50(K)-B	AR60(K)-B
3	Valve	Brass, HNBR	AR20P-410S	AR25P-410S	AR30P-410S	AR40P-410S		AR50P-410S	AR60P-410S
4	Diaphragm assembly	Weatherable NBR	AR20P-150AS	AR25P-150AS	AR30P-150AS	AR40P-150AS		AR50P-150AS	
5	Valve guide assembly	Polyacetal	AR20P-050AS	AR25P-050AS	AR30P-050AS	AR40P-050AS		AR50P-050AS	AR60P-050AS
6	Check valve assembly *1	—	AR23KP-020AS						

*1 Check valve assembly is applicable for a regulator with backflow function (AR20K-B to AR60K-B) only.
 Assembly of a check valve cover, check valve body assembly and 2 mounting screws

AR20K-B to AR60K-B (Regulator with Backflow Function)



AC

AF+AR+AL

AW+AL

AF+AR

AF+AFM+AR

AW+AFM

Attachment

AF

AFM / AFD

AR

AL

AW

AR10-A Series

AR20K-B to AR60K-B Series

Working Principle (Regulator with Backflow Function)

AR10-A

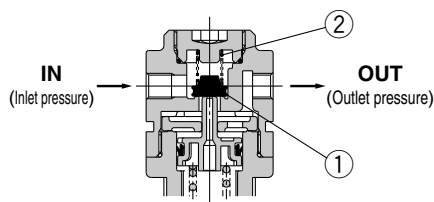


Figure 1

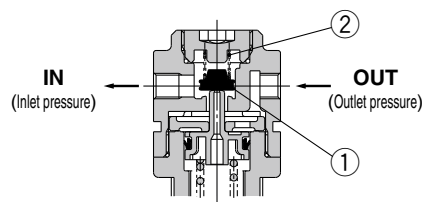
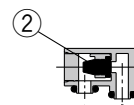
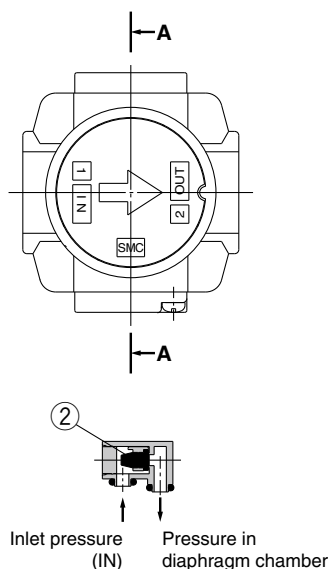


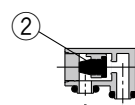
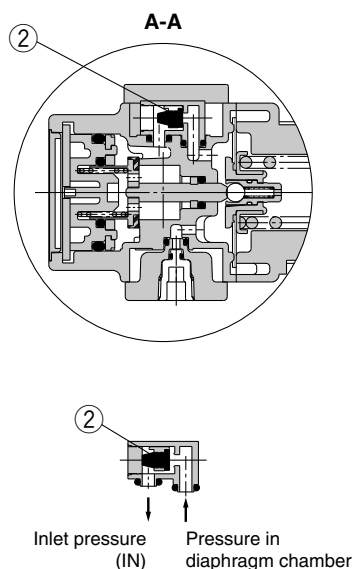
Figure 2

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 the valve ① is the valve spring force ② only. When the 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, the valve ① may not open due to the valve spring ② force.

AR20K-B to AR60K-B



Inlet pressure (IN) Pressure in diaphragm chamber



Inlet pressure (IN) Pressure in diaphragm chamber

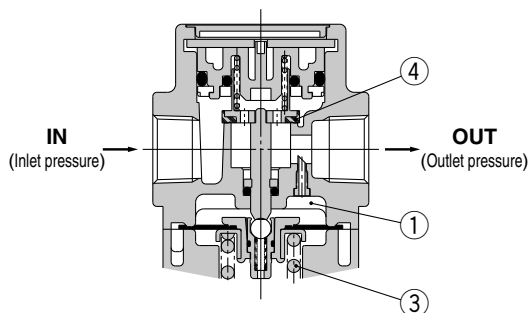


Figure 1 Normal

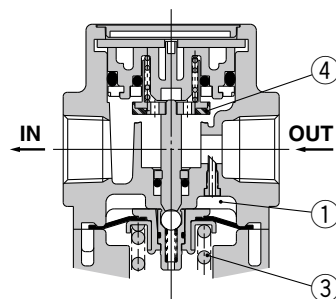


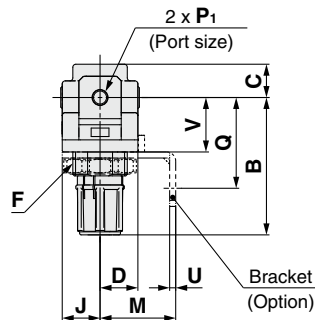
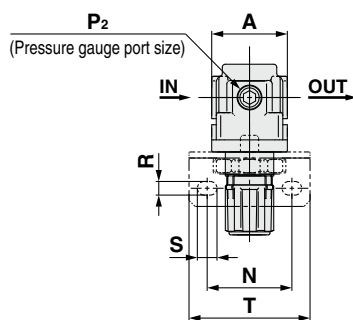
Figure 2 Backflow

When the inlet pressure is higher than the regulating pressure, the check valve ② closes and operates as a normal regulator (Figure 1). When the inlet pressure is shut off and released, the check valve ② opens and the pressure in the diaphragm chamber ① is released into the inlet side (Figure 2). This lowers the pressure in the diaphragm chamber ① and the force generated by the spring ③ lifts the diaphragm. The valve ④ opens through the stem, and the outlet pressure is released to the inlet side (Figure 2).

AR10-A Series AR20-B to AR60-B Series AR20K-B to AR60K-B Series

Dimensions

AR10-A



Panel mounting dimensions

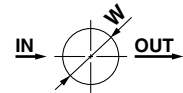
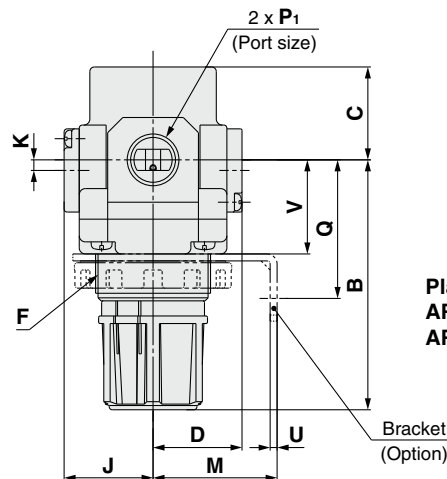
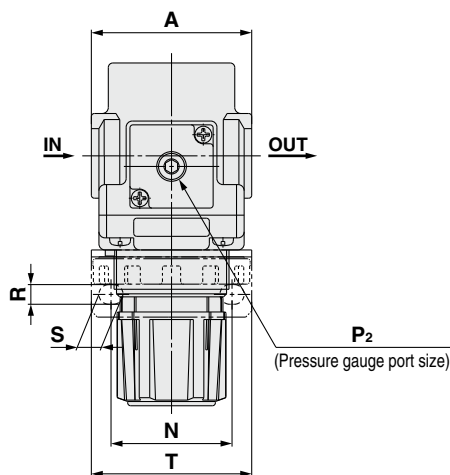


Plate thickness
AR10-A: Max. 3.5

AR20(K)-B to AR40(K)-06-B



Panel mounting dimensions

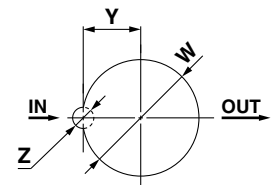
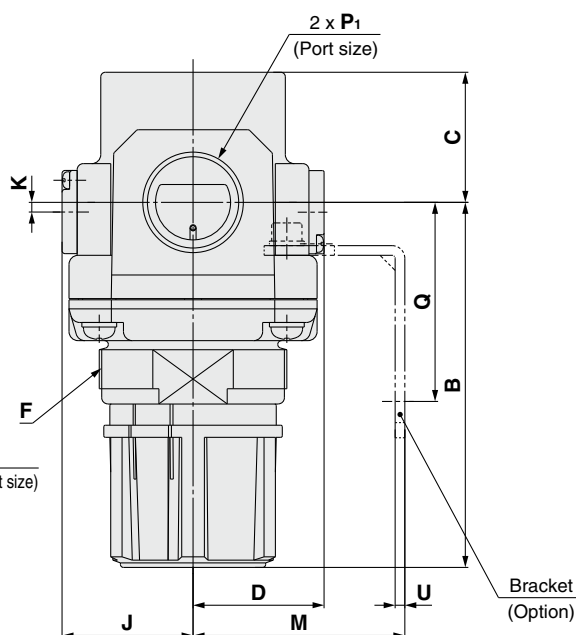
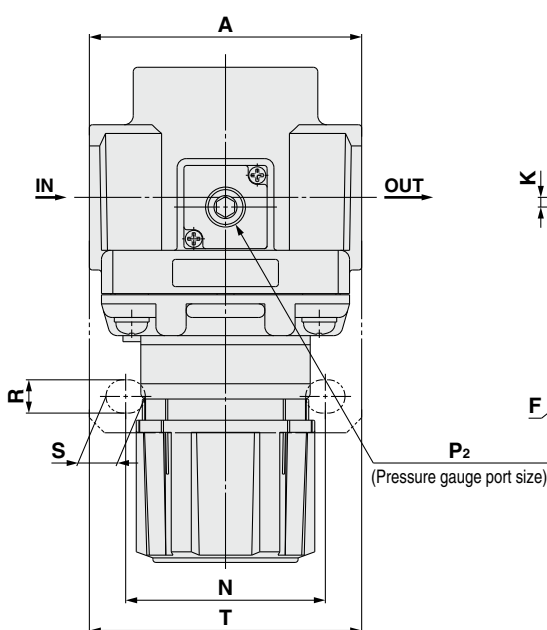
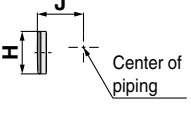
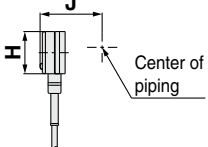
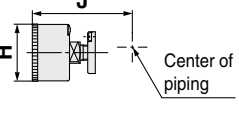


Plate thickness
AR20(K)-B to AR30(K)-B: Max. 3.5
AR40(K)-B : Max. 5

AR50(K)-B/AR60(K)-B



Regulator **AR10-A Series**
 Regulator **AR20-B to AR60-B Series**
 Regulator with Backflow Function **AR20K-B to AR60K-B Series**

Option	Square embedded type pressure gauge	Digital pressure switch	Round type pressure gauge	Round type pressure gauge (with color zone)
Dimensions				

Model	Standard specifications										Optional specifications							
											Square embedded type pressure gauge		Digital pressure switch		Round type pressure gauge		Round type pressure gauge (with color zone)	
	P ₁	P ₂	A	B* ¹	C	D	F	J	K		H	J	H	J	H	J	H	J
AR10-A	M5 x 0.8	1/16	25	47.4	11	12.5	M18 x 1	12.5	—	—	—	—	—	—	ø26	26	—	—
AR20(K)-B	1/8, 1/4	1/8	40	67.4	26.5	28.5	M28 x 1	28.5	2 * ²	□28	29.5	□27.8	40	□27.8	65	66	—	—
AR25(K)-B	1/4, 3/8	1/8	53	71.9	28	27.5	M32 x 1.5	27.5	0	□28	28.5	□27.8	39	□27.8	64	65	—	—
AR30(K)-B	1/4, 3/8	1/8	53	85.6	30.7	29.4	M38 x 1.5	29.4	3.5	□28	30.4	□27.8	40.9	□27.8	65.9	66.9	—	—
AR40(K)-B	1/4, 3/8, 1/2	1/8	70	91.7	35.8	33.8	M42 x 1.5	33.8	3.5	□28	34.8	□27.8	45.3	□27.8	71.3	71.3	—	—
AR40(K)-06-B	3/4	1/8	75	93.2	35.8	33.8	M42 x 1.5	33.8	3	□28	34.8	□27.8	45.3	□27.8	71.3	71.3	—	—
AR50(K)-B	3/4, 1	1/8	90	125.2	43	43.3	M62 x 1.5	43.3	3.2	□28	44.3	□27.8	54.8	□27.8	80.8	80.8	—	—
AR60(K)-B	1	1/8	95	129.6	46	43.3	M62 x 1.5	43.3	3.2	□28	44.3	□27.8	54.8	□27.8	80.8	80.8	—	—

Model	Optional specifications											
	Bracket mount								Panel mount			
	M	N	Q	R	S	T	U	V	W	Y	Z	
AR10-A	25	28	30	4.5	6.5	40	2	18	18.5	—	—	—
AR20(K)-B	30	34	43.9	5.4	15.4	55	2.3	24.7	28.5	14	6	—
AR25(K)-B	30	34	43.9	5.4	15.4	55	2.3	25.7	32.5	16	6	—
AR30(K)-B	41	40	45.8	6.5	8	53	2.3	31.1	38.5	19	7	—
AR40(K)-B	50	54	54	8.5	10.5	70	2.3	35.5	42.5	21	7	—
AR40(K)-06-B	50	54	55.5	8.5	10.5	70	2.3	37	42.5	21	7	—
AR50(K)-B	70	66	65.8	11	13	90	3.2	—	—	—	—	—
AR60(K)-B	70	66	65.8	11	13	90	3.2	—	—	—	—	—

*1 The dimension of B is the length when the filter regulator knob is unlocked.

*2 For the AR20(K)-B only, the position of the pressure gauge is above the center of the piping.

AR20-B to AR60-B Regulator Made to Order

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



AR30-03-B-X430/440/425

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
Environment		Low temperature	High temperature
Ambient temperature [°C]		-30 to 60	-5 to 80
Fluid temperature [°C]		-5 to 60 (with no freezing)	
Material	Rubber parts	Special NBR	FKM
	Main parts	Metal (Aluminum die-cast, etc.)	

Applicable Model

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

AR 30 - 03 BG - - B - X430

1 2 3 4 5

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

For high/low temperature

X430	Low temperature
X440	High temperature

	Symbol	Description	① Body size					
			25	30	40	50	60	
② Pipe thread type	Nil	Rc	●	●	●	●	●	
	N	NPT	●	●	●	●	●	
	F	G	●	●	●	●	●	
③ Port size	+		●	●	●	—	—	
	02	1/4	●	●	●	—	—	
	03	3/8	—	—	●	—	—	
	04	1/2	—	—	●	●	—	
	06	3/4	—	—	●	●	—	
④ Option #1	+		●	●	●	—	—	
	a Mounting	Nil Without mounting option	●	●	●	●	●	
		B*2 With bracket	●	●	●	●	●	
		H With set nut (for panel mount)	●	●	●	—	—	
⑤ Semi-standard	b Pressure gauge	G*3 Round type pressure gauge (without limit indicator)	●	●	●	●	●	
	+		●	●	●	●	●	
	c Set pressure	Nil 0.05 to 0.85 MPa setting	●	●	●	●	●	
		1*4 0.02 to 0.2 MPa setting	●	●	●	●	●	
	+		●	●	●	●	●	
	d Exhaust mechanism	Nil Relieving type	●	●	●	●	●	
		N Non-relieving type	●	●	●	●	●	
	+		●	●	●	●	●	
	e Flow direction	Nil Flow direction: Left to right	●	●	●	●	●	
		R Flow direction: Right to left	●	●	●	●	●	
⑤ Semi-standard	+		●	●	●	●	●	
	f Knob	Nil Downward	●	●	●	●	●	
		Y Upward	●	●	●	●	●	
	+		●	●	●	●	●	
⑤ Semi-standard	g Pressure unit	Nil Name plate and pressure gauge in SI units: MPa	●	●	●	●	●	
		Z*5 Name plate and pressure gauge in imperial units: psi	○*6	○*6	○*6	○*6	○*6	
			○*6	○*6	○*6	○*6	○*6	
			○*6	○*6	○*6	○*6	○*6	

- *1 Options B, G, H are not assembled and supplied loose at the time of shipment.
 *2 Assembly of a bracket and set nuts (AR25-B to AR40-B)
 Including 2 mounting screws for the AR50-B and AR60-B
 *3 Mounting thread for pressure gauge: 1/8, Pressure gauge type: G43
 *4 The only difference from the standard specifications is the spring for the regulator.
 It does not restrict the setting of 0.2 MPa or more. When the pressure gauge is attached, a 0.4 MPa pressure gauge will be fitted.
 *5 For pipe thread type: NPT. This product is for overseas use only according to the new Measurement Act. (The SI unit type is provided for use in Japan.)
 *6 ○: For pipe thread type: NPT only

② High Pressure

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

Specifications

Made-to-order part no.		-X425
Proof pressure [MPa]		3.0
Maximum operating pressure [MPa]		2.0
Set pressure range [MPa]		0.1 to 1.7
Ambient and fluid temperature [°C]		-5 to 60 (with no freezing)

Applicable Model

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

AR 30 - 03 BG - - B - X425

1 2 3 4 5

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 alphabetic order.
- Example) AR30-03BG-NR-B-X425

	Symbol	Description	① Body size					
			20	25	30	40	50	60
② Pipe thread type	Nil	Rc	●	●	●	●	●	●
	N	NPT	●	●	●	●	●	●
	F	G	●	●	●	●	●	●
③ Port size	+		●	—	—	—	—	—
	01	1/8	●	—	—	—	—	—
	02	1/4	●	●	●	—	—	—
	03	3/8	—	—	●	—	—	—
	04	1/2	—	—	●	●	—	—
④ Option #1	+		●	—	—	—	—	—
	a Mounting	Nil Without mounting option	●	●	●	●	●	●
		B*2 With bracket	●	●	●	●	●	●
		H With set nut (for panel mount)	●	●	●	—	—	—
④ Option #1	b Pressure gauge	G*3 Round type pressure switch (with limit indicator)	●	●	●	●	●	●
	+		●	●	●	●	●	●
⑤ Semi-standard	c Exhaust mechanism	Nil Relieving type	●	●	●	●	●	●
		N Non-relieving type	●	●	●	●	●	●
	+		●	●	●	●	●	●
	d Flow direction	Nil Flow direction: Left to right	●	●	●	●	●	●
⑤ Semi-standard		R Flow direction: Right to left	●	●	●	●	●	●
	+		●	●	●	●	●	●
	e Knob	Nil Downward	●	●	●	●	●	●
		Y Upward	●	●	●	●	●	●
⑤ Semi-standard	f Pressure unit	Nil Name plate and pressure gauge in SI units: MPa	●	●	●	●	●	●
		Z*4 Name plate and pressure gauge in imperial units: psi	○*5	○*5	○*5	○*5	○*5	○*5
			○*5	○*5	○*5	○*5	○*5	○*5
			○*5	○*5	○*5	○*5	○*5	○*5

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

AR10 Regulator Made to Order

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



③ 0.4 MPa Setting

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

Specifications

Made-to-order part no.	-X406
Proof pressure [MPa]	1.5
Maximum operating pressure [MPa]	1.0
Set pressure range [MPa] *1	0.05 to 0.4

*1 Pressure can be set higher than the specification pressure in some cases, but use pressure within the specification range.

⚠ Caution

- The AR10 comes with a backflow function as a standard feature. When using the AR10 as with backflow function, backflow may not occur with the set pressure of 0.15 MPa or less.

Applicable Model

Model	AR10
Port size	M5

AR 10 - M5 - - A - X406

①
 ②
 • 0.4 MPa setting

- Option/Semi-standard: Select one each for a to f.
 - Option/Semi-standard symbol: When more than one specification is required, indicate in alphabetic order.
- Example) AR10-M5BG-NR-A-X406

		Symbol	Description	Body size		
				10		
①	Option #2	a	Mounting	Nil	Without mounting option	●
				B*3	With bracket	●
				H	With set nut (for panel mount)	●
			+			
	b	Pressure gauge *4	Nil	Without pressure gauge	●	
			G	Round type pressure gauge (without limit indicator)	●	
		+				
②	Semi-standard	c	Exhaust mechanism	Nil	Relieving type	●
				N	Non-relieving type	●
				+		
		d	Flow direction	Nil	Flow direction: Left to right	●
				R	Flow direction: Right to left	●
				+		
		e	Knob	Nil	Downward	●
				Y	Upward	●
				+		
		f	Pressure unit	Nil	Name plate and pressure gauge in SI units: MPa	●
Z*5	Name plate and pressure gauge in imperial units: psi			●		

*2 Options B, G, H are not assembled and supplied loose at the time of shipment.

*3 Assembly of a bracket and set nuts.

*4 A 1.0 MPa pressure gauge will be fitted.

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

AC

AF+AR+AL

AW+AL

AF+AR

AF+AFM+AR

AW+AFM

Attachment

AF

AFM / AFD

AR

AL

AW

AR20-B to AR60-B Regulator AR20K-B to AR60K-B Regulator with Backflow Function Made to Order

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



③ 0.4 MPa Setting

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

Specifications

Made-to-order part no.	-X406
Proof pressure [MPa]	1.5
Maximum operating pressure [MPa]	1.0
Set pressure range [MPa] *1	0.05 to 0.4

*1 Pressure can be set higher than the specification pressure in some cases, but use pressure within the specification range.

Applicable Model

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

AR **30** **03** - **B** - **X406**

① ② ③ ④ ⑤ ⑥

• 0.4 MPa setting

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

		Symbol	Description	① Body size					
				20	25	30	40	50	60
②	With backflow function	Nil	Without backflow function	●	●	●	●	●	●
		K*2	With backflow function	●	●	●	●	●	●
③	Pipe thread type	Nil	Rc	●	●	●	●	●	●
		N	NPT	●	●	●	●	●	●
		F	G	●	●	●	●	●	●
		+							
④	Port size	01	1/8	●	—	—	—	—	—
		02	1/4	—	●	●	●	—	—
		03	3/8	—	●	●	●	—	—
		04	1/2	—	—	—	●	—	—
		06	3/4	—	—	—	●	●	—
		10	1	—	—	—	—	●	●
⑤	a	Mounting	Nil	Without mounting option	●	●	●	●	●
			B*4	With bracket	●	●	●	●	●
			H	With set nut (for panel mount)	●	●	●	—	—
	b	Pressure gauge*5	Nil	Without pressure gauge	●	●	●	●	●
			E	Square embedded type pressure gauge (with limit indicator)	●	●	●	●	●
			G	Round type pressure gauge (with limit indicator)	●	●	●	●	●
			M	Round type pressure gauge (with color zone)	●	●	●	●	●
		Digital pressure switch	E1*6	Output: NPN output, Electrical entry: Wiring bottom entry	●	●	●	●	●
			E2*6	Output: NPN output, Electrical entry: Wiring top entry	●	●	●	●	●
			E3*6	Output: PNP output, Electrical entry: Wiring bottom entry	●	●	●	●	●
			E4*6	Output: PNP output, Electrical entry: Wiring top entry	●	●	●	●	●
⑥	c	Exhaust mechanism	Nil	Relieving type	●	●	●	●	●
			N	Non-relieving type	●	●	●	●	●
	d	Flow direction	Nil	Flow direction: Left to right	●	●	●	●	●
			R	Flow direction: Right to left	●	●	●	●	●
	e	Knob	Nil	Downward	●	●	●	●	●
			Y	Upward	●	●	●	●	●
	f	Pressure unit	Nil	Name plate and pressure gauge in SI units: MPa	●	●	●	●	●
			Z*7	Name plate and pressure gauge in imperial units: psi	○*9	○*9	○*9	○*9	○*9
			ZA*8	Digital pressure switch: With unit selection function	△*10	△*10	△*10	△*10	△*10

*2 Please set the inlet pressure to at least 0.05 MPa higher than the set pressure.

*3 Options B, G, H are not assembled and supplied loose at the time of shipment.

*4 Assembly of a bracket and set nuts. (AR20(K)-B to AR40(K)-B). Including 2 mounting screws for the AR50(K)-B and AR60(K)-B

*5 A 0.7 MPa pressure gauge will be fitted.

*6 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.)

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

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

*9 ○: For pipe thread type: NPT only

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

AR20-B to AR60-B Regulator AR20K-B to AR60K-B Regulator with Backflow Function Made to Order

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



④ Clean Series

For details, refer to the Clean Series/Low Particle Generation section of the **Web Catalog**.

10 - Standard model no.

* Please contact SMC if a product with pressure gauge is desired.

- Clean series

⑤ Copper, Fluorine and Silicone-free + Low Particle Generation

For details, refer to the Clean Series/Low Particle Generation section of the **Web Catalog**.

21 - Standard model no.

- Copper, fluorine and silicone-free + Low particle generation

AC

AF+AR+AL

AW+AL

AF+AR

AF+AFM+AR

AW+AFM

Attachment

AF

AFM / AFD

AR

AL

AW