



Modular Type Regulators *Series AR*

Regulator Series AR	Model	Port size	Options
	AR20-A	1/8, 1/4	Bracket Round type pressure gauge With set nut (for panel mount)*
	AR25-A	1/4, 3/8	
	AR30-A		
	AR40-A		
P.45 to 50	AR40-06-A	3/4	

AC

AF+AR+AL

AW+AL

AF+AR

AF+AFM+AR

AW+AFM

Attachment

AF

AFM / AFD

AR

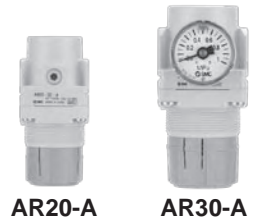
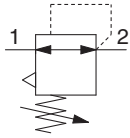
AL

AW

Regulator

AR20-A to AR40-A

JIS Symbol
Regulator



How to Order

AR **30** - **03** **BG** - **1N** -A

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-1N-A

	Symbol	Description	①					
			Body size					
			20	25	30	40		
②	Thread type	Nil	Rc	●	●	●	●	
		N	NPT	●	●	●	●	
		F	G	●	●	●	●	
+								
③	Port size	01	1/8	●	—	—	—	
		02	1/4	●	●	●	●	
		03	3/8	—	●	●	●	
		04	1/2	—	—	—	●	
		06	3/4	—	—	—	●	
+								
④	Option a	Mounting	Nil	Without mounting option	●	●	●	●
			B	With bracket	●	●	●	●
			H	With set nut (for panel fitting)	●	●	●	●
+								
④	Option b	Pressure gauge	Nil	Without pressure gauge	●	●	●	●
			G	Round type pressure gauge (with limit indicator)	●	●	●	●
			M	Round type pressure gauge (with color zone)	●	●	●	●
+								
⑤	Semi-standard c	Set pressure	Nil	0.05 to 0.7 MPa setting	●	●	●	●
			1	0.02 to 0.2 MPa setting	●	●	●	●
	+							
	Semi-standard d	Exhaust mechanism	Nil	Relieving type	●	●	●	●
			N	Non-relieving type	●	●	●	●
	+							
	Semi-standard e	Flow direction	Nil	Flow direction: Left to right	●	●	●	●
			R	Flow direction: Right to left	●	●	●	●
	+							
	Semi-standard f	Knob	Nil	Downward	●	●	●	●
Y			Upward	●	●	●	●	
+								
Semi-standard g	Pressure unit	Nil	Name plate and pressure gauge in imperial units: MPa	●	●	●	●	
		Z	Name plate and pressure gauge in imperial units: psi	○	○	○	○	

Note 1) Option B, G, H, M are not assembled and supplied loose at the time of shipment.

Note 2) Assembly of a bracket and set nuts.

Note 3) Only for AR20-A to 40-A.

Note 4) When the pressure gauge is attached, a 1.0 MPa pressure gauge will be fitted for standard (0.7 MPa) type. 0.4 MPa pressure gauge for 0.2 MPa type.

Note 5) Pressure can be set higher than the specification pressure in some cases, but use pressure within the specification range.

Note 6) 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.)

Round pressure gauge (with color zone): Cannot be used with M. Available by request for special.

Note 7) ○: For thread type: NPT only

Standard Specifications

Model	AR20-A	AR25-A	AR30-A	AR40-A	AR40-06-A
Port size	1/8, 1/4	1/4, 3/8	1/4, 3/8	1/4, 3/8, 1/2	3/4
Pressure gauge port size	1/8				
Fluid	Air				
Ambient and fluid temperature	- 5 to 60°C (with no freezing)				
Proof pressure	1.5 MPa				
Maximum operating pressure	1.0 MPa				
Set pressure range	0.05 to 0.7 MPa				
Construction	Relieving type				
Weight (kg)	0.17	0.19	0.34	0.58	0.60

Options/Part No.

Optional specifications		Model				
		AR20-A	AR25-A	AR30-A	AR40-A	AR40-06-A
Bracket assembly ^{Note 1)}		AR22P-270AS	AR27P-270AS	AR32P-270AS	AR42P-270AS	AR42P-270AS
Set nut		AR22P-260S	AR22P-260S	AR32P-260S	AR42P-260S	AR42P-260S
Pressure gauge	Round type ^{Note 2)}	Standard	G36-10-□01		G46-10-□01	
		0.02 to 0.2 MPa setting	G36-4-□01		G46-4-□01	
	Round type ^{Note 2)} (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	

Note 1) Assembly of a bracket and set nuts

Note 2) □ 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.

⚠ Specific Product Precautions

Be sure to read before handling. Refer to back cover for Safety Instructions, "Handling Precautions for SMC Products" (M-E03-3) and the Operation Manual for F.R.L. Precautions. Please download it via our website, <http://www.smcworld.com>

Selection

⚠ Warning

- Although exhaust of the residual pressure to the inlet side is possible when eliminating the inlet pressure, exhaust is not possible when the set pressure is 0.15 MPa or less. Use the regulator with backflow function.

Maintenance

⚠ Warning

- When using the regulator 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.
- Do not use tools on the pressure regulator knob as this may cause damage. It must be operated manually.

⚠ Caution

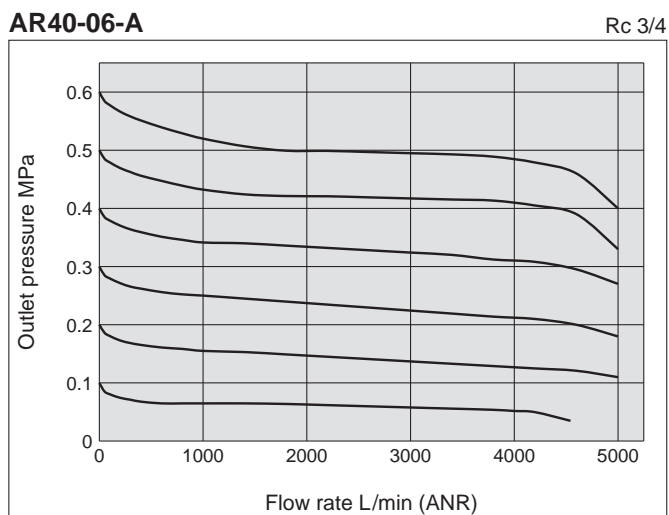
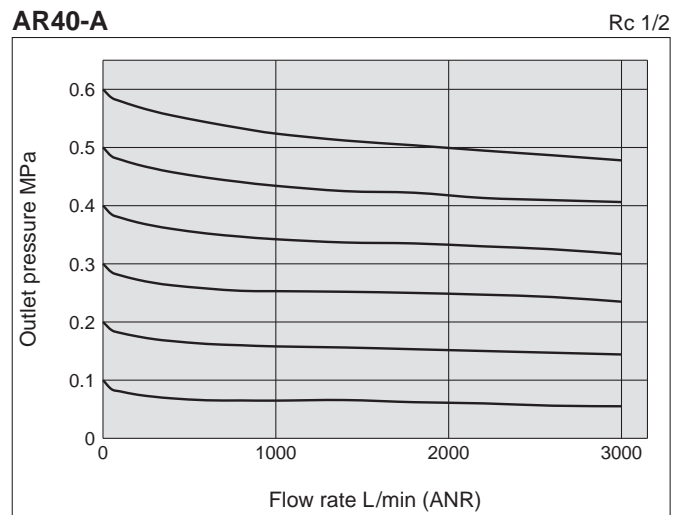
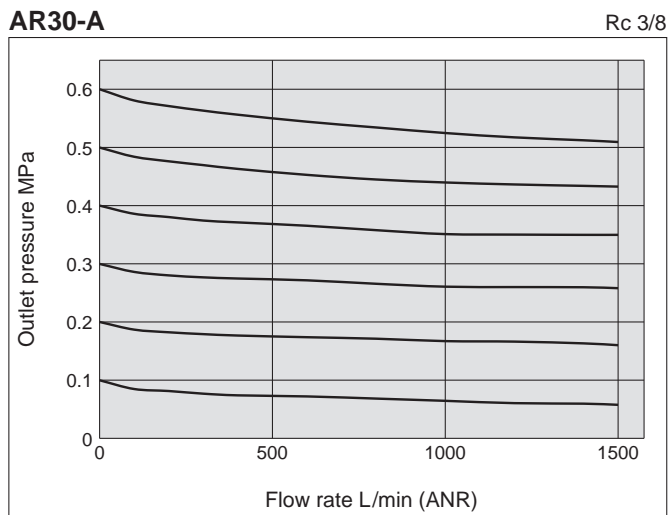
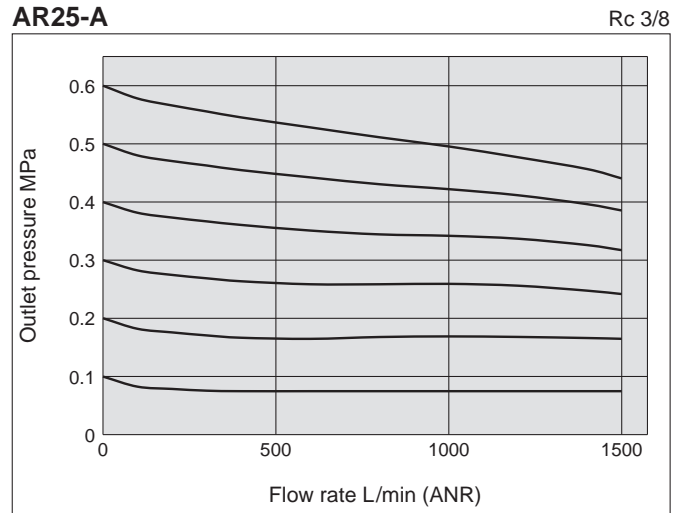
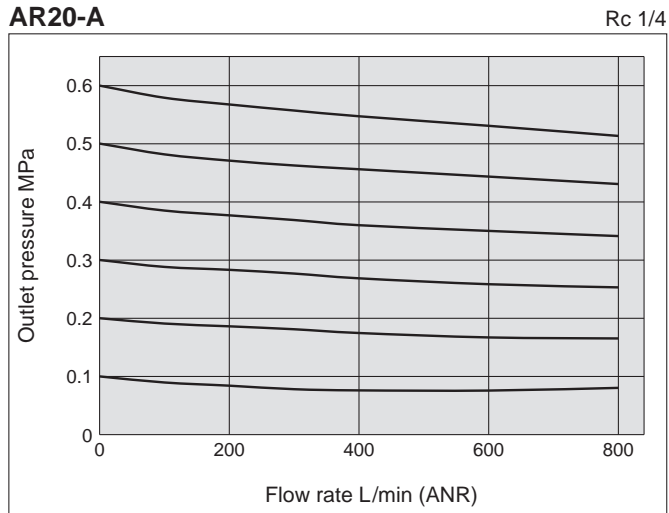
- Be sure to unlock the knob before adjusting the pressure and lock it after setting the pressure. Failure to follow this procedure can cause damage to the knob and the outlet pressure may fluctuate.
 - Pull the pressure regulator knob to unlock. (You can visually verify this with the "orange mark" that 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).
- Pulsation will be generated when the difference between the inlet and the outlet pressure is large. In this case, reduce the pressure difference between the inlet and the outlet. Consult SMC if the pulsation problem is not resolved.

AC
AF+AR+AL
AW+AL
AF+AR
AF+AFM+AR
AW+AFM
Attachment
AF
AFM / AFD
AR
AL
AW

Series AR20-A to AR40-A

Flow Characteristics (Representative values)

Condition: Inlet pressure 0.7 MPa

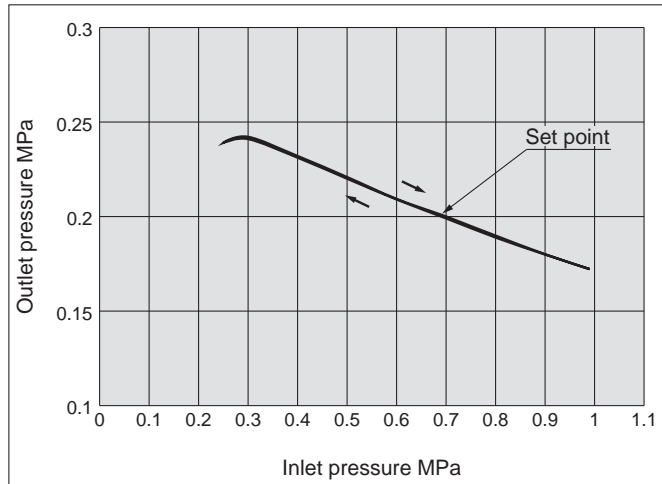


Regulator Series AR20-A to AR40-A

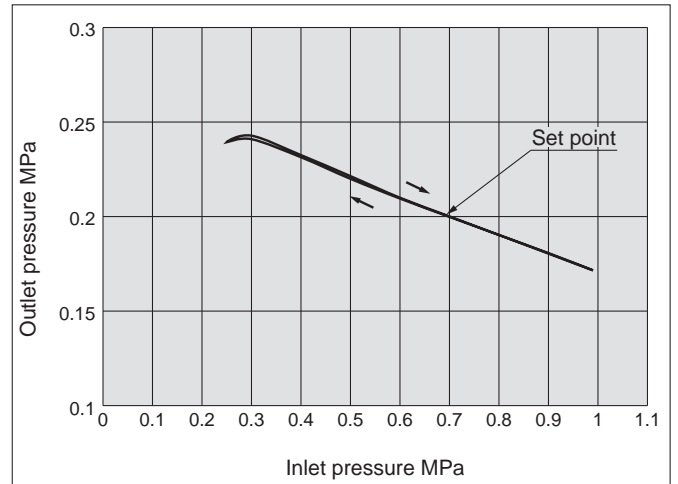
Pressure Characteristics (Representative values)

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

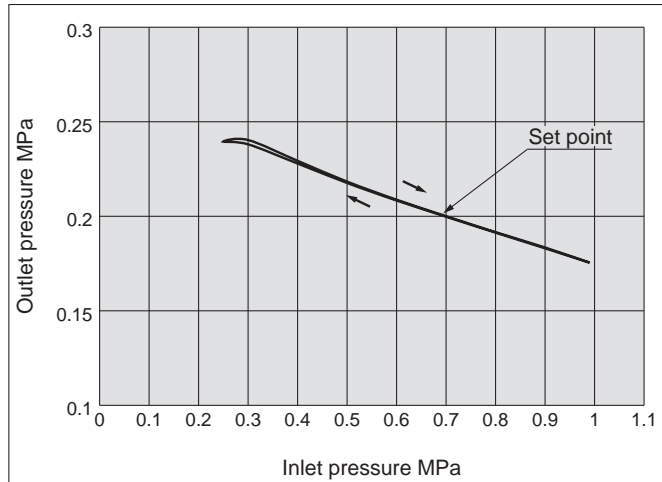
AR20-A



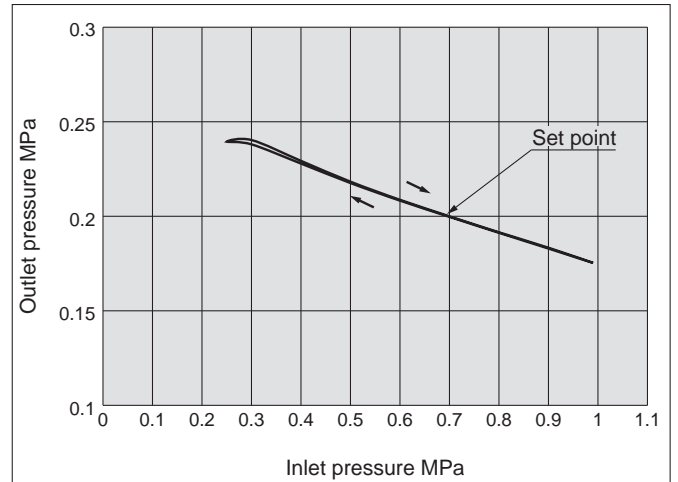
AR25-A



AR30-A



AR40-A/AR40-06-A

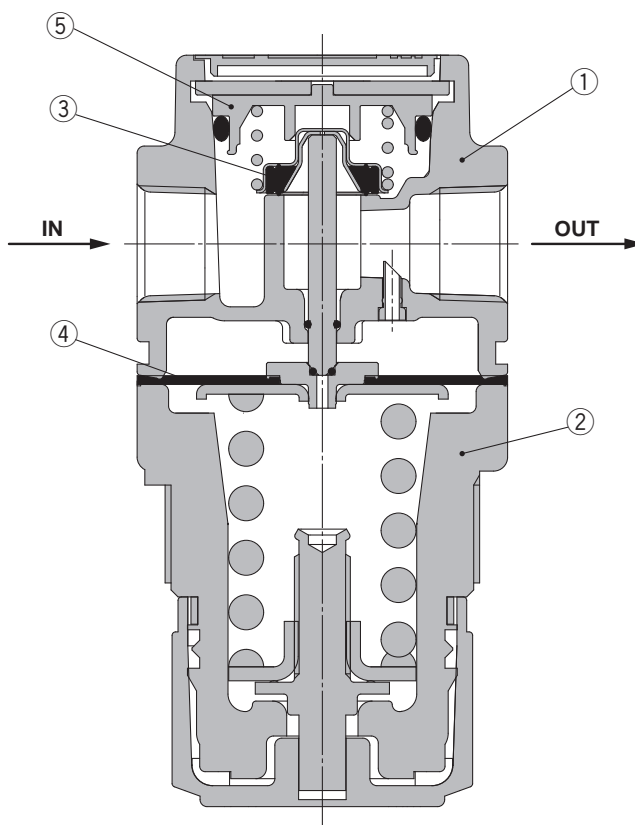


- AC
- AF+AR+AL
- AW+AL
- AF+AR
- AF+AFM+AR
- AW+AFM
- Attachment
- AF
- AFM / AFD
- AR
- AL
- AW

Series AR20-A to AR40-A

Construction

AR20-A to 40-06-A



Component Parts

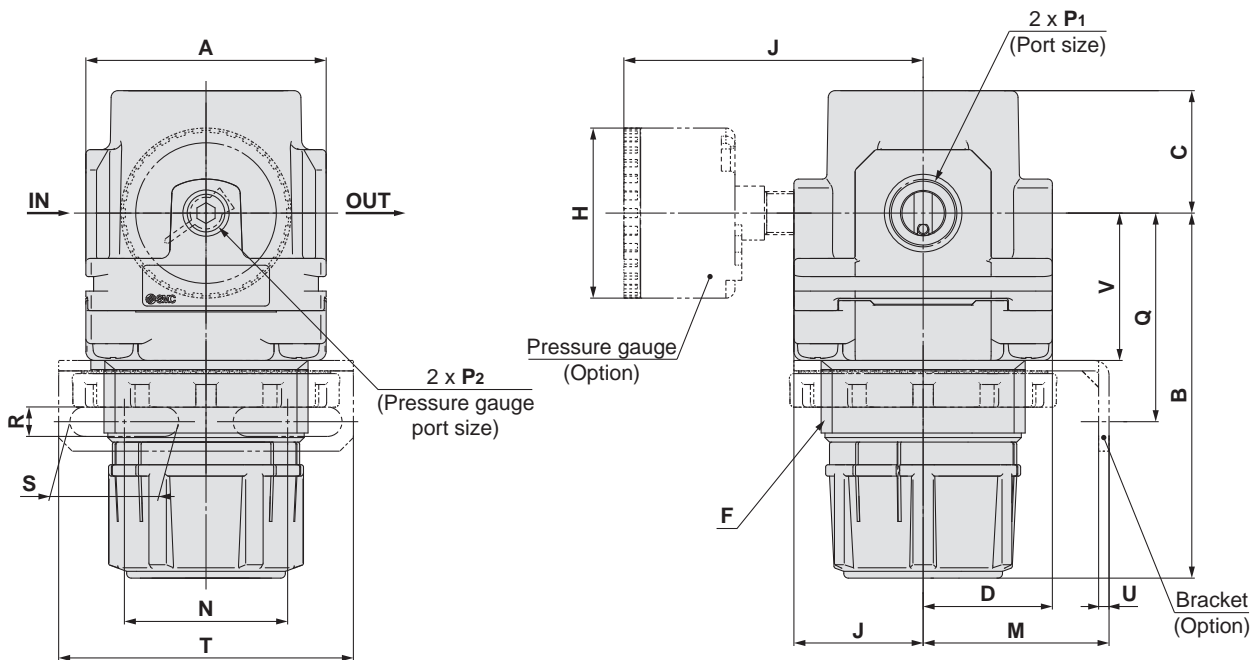
No.	Description	Material	Color
1	Body	Aluminum die-cast	White
2	Bonnet	Polyacetal	White

Replacement Parts

No.	Description	Material	Part no.				
			AR20-A	AR25-A	AR30-A	AR40-A	AR40-06-A
3	Valve assembly	Stainless steel, HNBR	AR22P-060AS	AR32P-060AS	AR42P-060AS		
4	Diaphragm assembly	Weatherable NBR	AR22P-150AS	AR32P-150AS	AR42P-150AS		
5	Valve guide assembly	Polyacetal	AR22P-050AS	AR32P-050AS	AR42P-050AS		

Dimensions

AR20-A to AR40-06-A



Panel fitting dimension

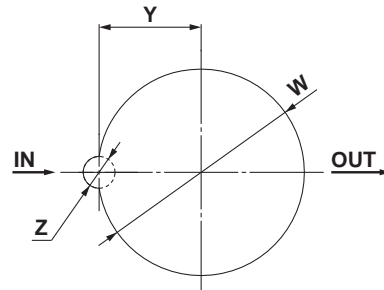


Plate thickness
 AR20-A to AR25-A : MAX.4
 AR30-A to AR40-06-A: MAX.8

Model	Standard specifications								Optional specifications														
									Round type pressure gauge				Round type pressure gauge (with color zone)				Bracket mount				Panel mount		
	P ₁	P ₂	A	B ^{Note)}	C	D	F	J	H	J	H	J	M	N	Q	R	S	T	U	V	W	Y	Z
AR20-A	1/8, 1/4	1/8	40	67.4	23.5	22	M36 x 1.5	22	ø37.5	58.5	ø37.5	59.5	30	34	43.9	5.4	15.4	55	2.3	27.3	36.5	17.5	6
AR25-A	1/4, 3/8	1/8	53	70.4	23.5	22	M36 x 1.5	22	ø37.5	58.5	ø37.5	59.5	30	34	44.3	5.4	15.4	55	2.3	30.3	36.5	17.5	6
AR30-A	1/4, 3/8	1/8	53	83.5	27	28.5	M45 x 1.5	28.5	ø37.5	65	ø37.5	66	41	36	46	6.5	24	65	2.3	32.5	45.5	22.5	7
AR40-A	1/4, 3/8, 1/2	1/8	70	100	33.5	34.5	M52 x 1.5	34.5	ø42.5	72	ø42.5	72	50	38	54	8.5	26.5	70	2.3	38.4	52.5	26	7
AR40-06-A	3/4	1/8	75	101.5	33.5	34.5	M52 x 1.5	34.5	ø42.5	72	ø42.5	72	50	38	55.5	8.5	26.5	70	2.3	39.9	52.5	26	7

Note) The total length of B dimension is the length when the filter regulator knob is unlocked.

AC
 AF+AR+AL
 AW+AL
 AF+AR
 AF+AFM+AR
 AW+AFM
 Attachment
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