

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	c	Set pressure	Nil <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	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 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, 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 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) 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)
Port size	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
Pressure gauge port size <sup>Note 1)</sup>	1/16 <sup>Note 2)</sup>	1/8		1/4				
Fluid	Air							
Ambient and fluid temperature <sup>Note 3)</sup>	-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	0.05 to 0.85 MPa						
Relief pressure <sup>Note 4)</sup>	Set pressure + 0.05 MPa [at relief flow rate of 0.1 ℓ/min (ANR)]							
Construction	Relieving type							
Mass (kg)	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.

AC

AF□

AR

AL

AW□

A□G

AV

AF800  
AF900

# Regulator AR20 to AR60

# Made to Order Specifications:

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



AR30-03-X425

## ① Special Temperature Environment

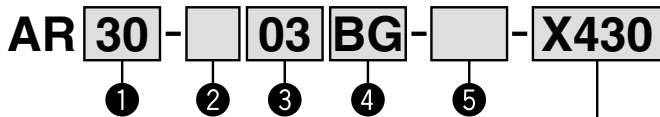
Special materials are used in the manufacturing of seals and resin parts to allow them to withstand various temperature conditions in cold or tropical (hot) climates.

### Specifications

Made-to-order part no.	-X430	-X440
<b>Environment</b>	Low temperature	High temperature
<b>Ambient temperature (°C)</b>	-30 to 60	-5 to 80
<b>Fluid temperature (°C)</b>	-5 to 60 (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 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	<b>Nil</b>	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	<b>a</b> Mounting	<b>Nil</b>	Without mounting option	●	●	●	●	●
		<b>B</b>	With bracket	●	●	●	●	●
	<b>H</b>	With set nut (for panel fitting)	●	●	●	—	—	
+								
<b>b</b> Pressure gauge	<b>G</b>	Round type pressure gauge (without limit indicator)	●	●	●	●	●	
+								
⑤ Semi-standard	<b>c</b> Set pressure	<b>Nil</b>	0.05 to 0.85 MPa setting	●	●	●	●	●
		<b>1</b>	0.02 to 0.2 MPa setting	●	●	●	●	●
+								
<b>d</b> Exhaust mechanism	<b>Nil</b>	Relieving type	●	●	●	●	●	
	<b>N</b>	Non-relieving type	●	●	●	●	●	
+								
<b>e</b> Flow direction	<b>Nil</b>	Flow direction: Left to right	●	●	●	●	●	
	<b>R</b>	Flow direction: Right to left	●	●	●	●	●	
+								
<b>f</b> Knob	<b>Nil</b>	Downward	●	●	●	●	●	
	<b>Y</b>	Upward	●	●	●	●	●	
+								
<b>g</b> Pressure unit	<b>Nil</b>	Name plate and pressure gauge in imperial units: MPa	●	●	●	●	●	
	<b>Z</b>	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 of a bracket and set nuts (AR25 to AR40)  
 Including 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

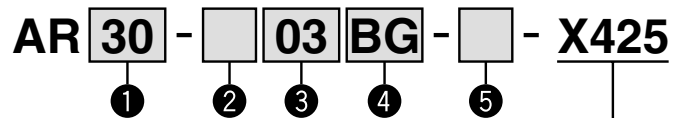
Strong materials are used in the manufacturing of air filters intended for high pressure operation. Also, construction modification allows a wider regulating pressure range.

### 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 (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



- 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-X425

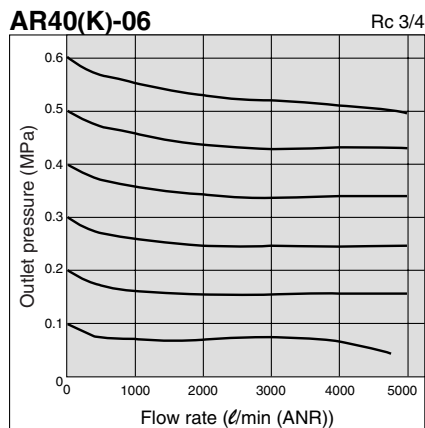
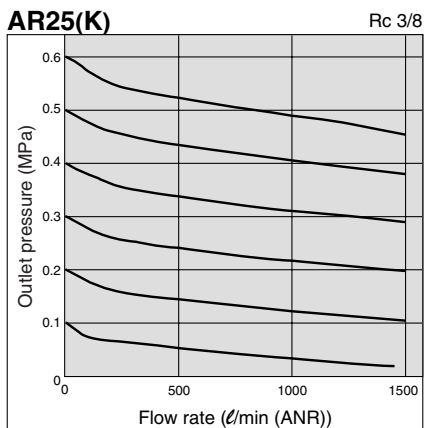
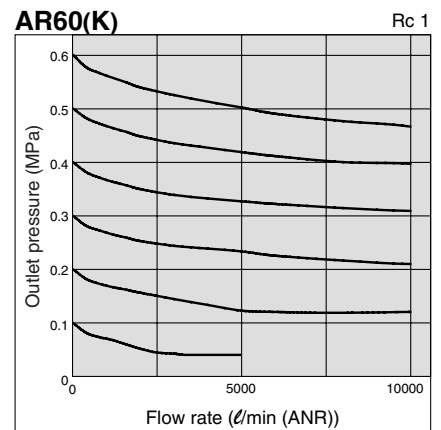
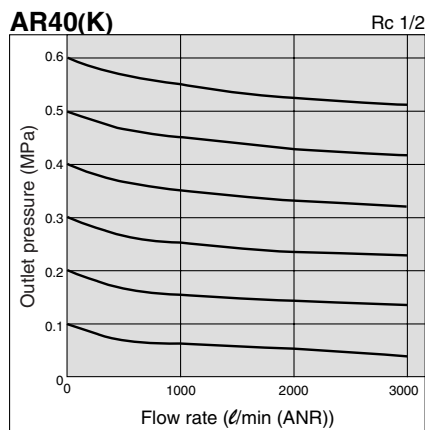
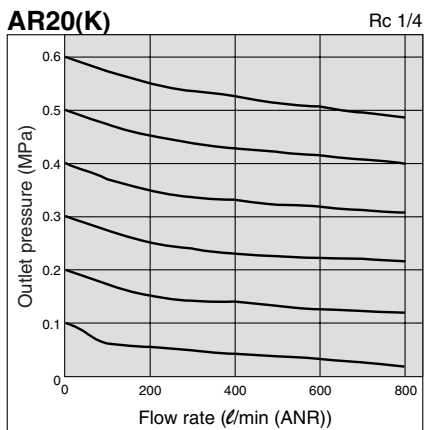
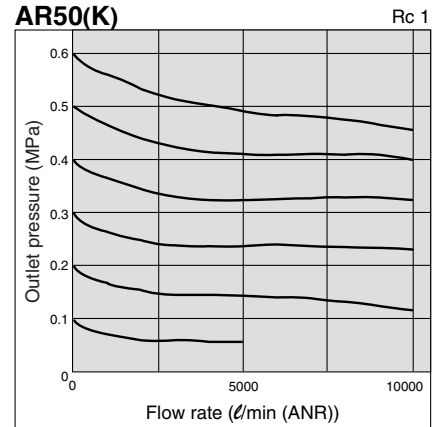
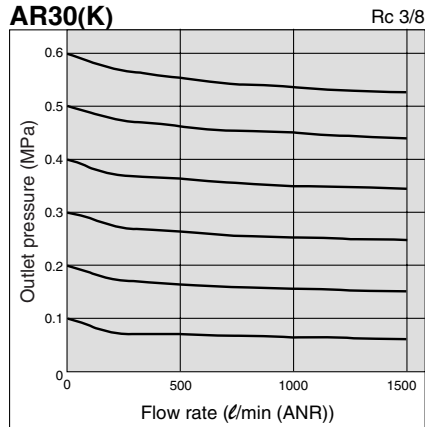
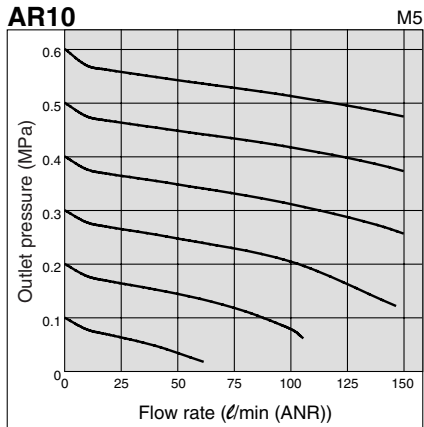
	Symbol	Description	① Body size						
			20	25	30	40	50	60	
② Thread type	<b>Nil</b>	Rc	●	●	●	●	●	●	
	<b>N</b>	NPT	●	●	●	●	●	●	
	<b>F</b>	G	●	●	●	●	●	●	
+									
③ Port size	<b>01</b>	1/8	●	—	—	—	—	—	
	<b>02</b>	1/4	●	●	●	—	—	—	
	<b>03</b>	3/8	—	●	●	—	—	—	
	<b>04</b>	1/2	—	—	●	—	—	—	
	<b>06</b>	3/4	—	—	—	●	—	—	
+									
④ Option	<b>a</b> Mounting	<b>Nil</b>	Without mounting option	●	●	●	●	●	●
		<b>B</b>	With bracket	●	●	●	●	●	●
	<b>H</b>	With set nut (for panel fitting)	●	●	●	—	—	—	
+									
<b>b</b> Pressure gauge	<b>G</b>	Round type pressure switch (with limit indicator)	●	●	●	●	●	●	
+									
⑤ Semi-standard	<b>c</b> Exhaust mechanism	<b>Nil</b>	Relieving type	●	●	●	●	●	●
		<b>N</b>	Non-relieving type	●	●	●	●	●	●
+									
<b>d</b> Flow direction	<b>Nil</b>	Flow direction: Left to right	●	●	●	●	●	●	
	<b>R</b>	Flow direction: Right to left	●	●	●	●	●	●	
+									
<b>e</b> Knob	<b>Nil</b>	Downward	●	●	●	●	●	●	
	<b>Y</b>	Upward	●	●	●	●	●	●	
+									
<b>f</b> Pressure unit	<b>Nil</b>	Name plate and pressure gauge in imperial units: MPa	●	●	●	●	●	●	
	<b>Z</b>	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 of a bracket and set nuts (AR20 to AR40)  
 Including 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 *Series AR10 to AR60* Regulator with Backflow Function *Series AR20K to AR60K*

## Flow Characteristics (Representative values)

Condition: Inlet pressure 0.7 MPa



**AC**

**AF** □

**AR**

**AL**

**AW** □

**AG** □

**AV**

**AF800**  
**AF900**

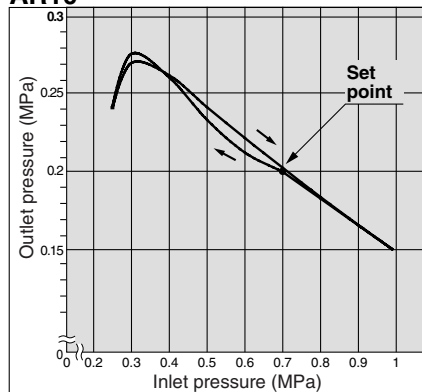
# Series AR10 to AR60

## Series AR20K to AR60K

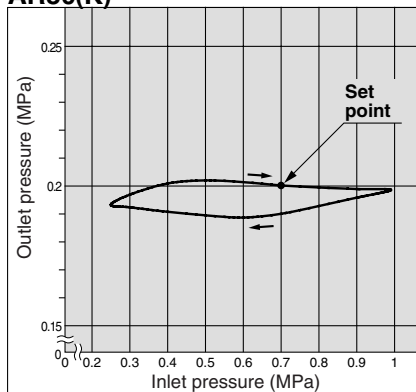
### Pressure Characteristics (Representative values)

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

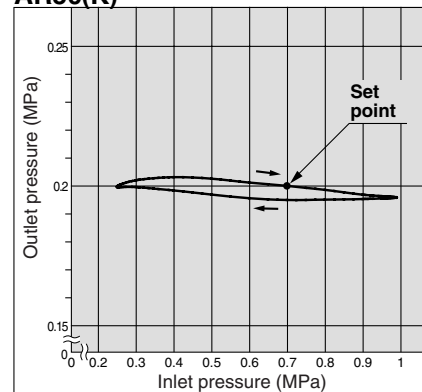
**AR10**



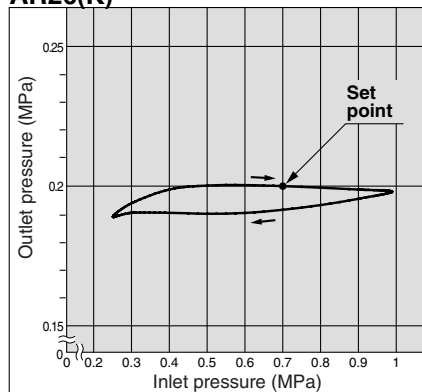
**AR30(K)**



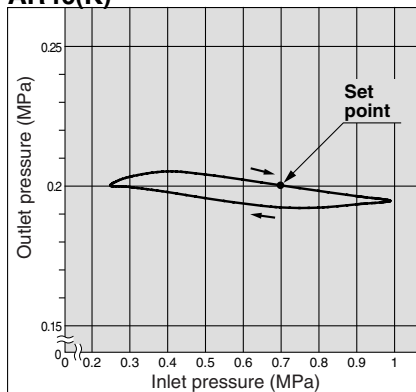
**AR50(K)**



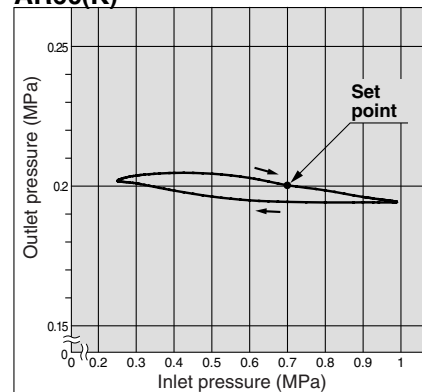
**AR20(K)**



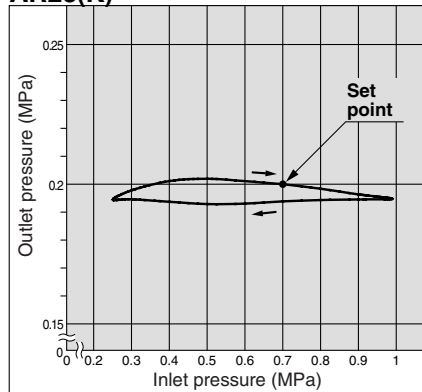
**AR40(K)**



**AR60(K)**



**AR25(K)**



**AR40(K)-06**

