



Modular Type Regulators *Series AR*

| Regulator Series AR  Pages 346 through to 355 | Model | Port size | Options |
|---|-----------------|---------------|--|
| | AR10 | M5 x 0.8 | Bracket Square embedded type pressure gauge (except the AR10) Round type pressure gauge Digital pressure switch (except the AR10) Panel mount |
| | 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 | |
| Regulator with Backflow Function Series AR□K  Pages 346 through to 355 | AR20K | 1/8, 1/4 | |
| | 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 | |

AC

AF□

AR

AL

AW□

A□G

AV

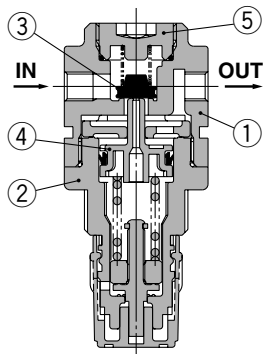
AF800
AF900

Regulator *Series AR10 to AR60*

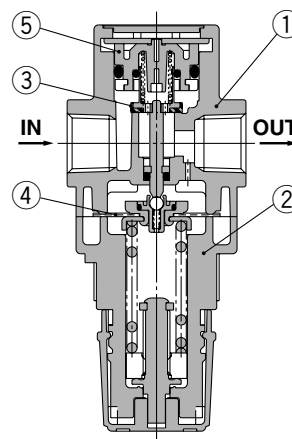
Regulator with Backflow Function *Series AR20K to AR60K*

Construction

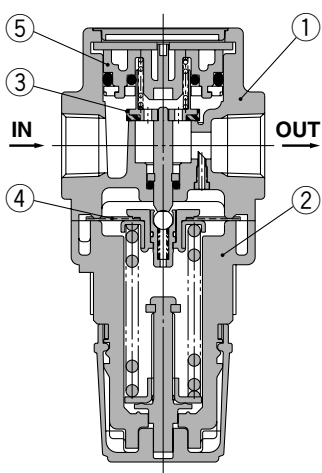
AR10



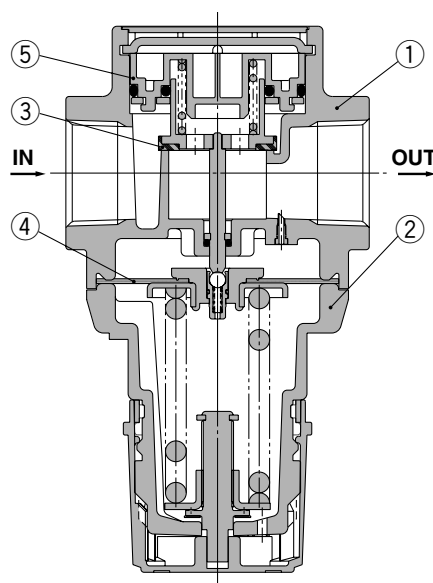
AR20(K), AR25(K)



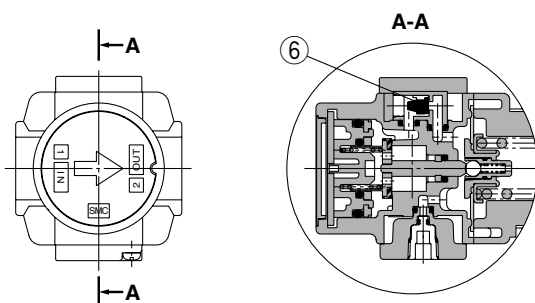
AR30(K), AR40(K)



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) | AR60(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 ^{Note 1)} | 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 ^{Note 2)} | — | — | 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

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

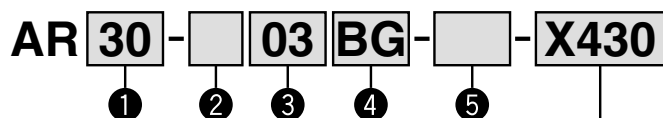
Special materials are used in the manufacturing of seals and resin parts to allow them to withstand various temperature conditions in cold or tropical (hot) climates.

Specifications

| Made-to-order part no. | -X430 | -X440 |
|---------------------------------|---|------------------|
| 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 | AR30 | AR40 | AR40-06 | AR50 | AR60 |
|------------------|----------|----------|---------------|---------|--------|------|
| Port size | 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

| | |
|-------------|------------------|
| X430 | Low temperature |
| X440 | High temperature |

| | | Symbol | Description | ① Body size | | | | | |
|---|---------------|--------|--|-------------|----|----|----|----|--|
| | | | | 25 | 30 | 40 | 50 | 60 | |
| ② | Thread type | Nil | Rc | ● | ● | ● | ● | ● | |
| | | N | NPT | ● | ● | ● | ● | ● | |
| | | F | G | ● | ● | ● | ● | ● | |
| ③ | Port size | 02 | 1/4 | ● | ● | ● | — | — | |
| | | 03 | 3/8 | — | ● | ● | — | — | |
| | | 04 | 1/2 | — | — | ● | ● | — | |
| | | 06 | 3/4 | — | — | — | ● | ● | |
| | | 10 | 1 | — | — | — | ● | ● | |
| ④ | Option | a | Mounting | ● | ● | ● | ● | ● | |
| | | | Without mounting option | ● | ● | ● | ● | ● | |
| | | | With bracket | ● | ● | ● | ● | ● | |
| ④ | Option | b | Pressure gauge | ● | ● | ● | ● | ● | |
| | | | Round type pressure gauge (without limit indicator) | ● | ● | ● | ● | ● | |
| | | | With set nut (for panel fitting) | ● | ● | ● | — | — | |
| ⑤ | Semi-standard | c | Set pressure | ● | ● | ● | ● | ● | |
| | | | 0.05 to 0.85 MPa setting | ● | ● | ● | ● | ● | |
| | | d | Exhaust mechanism | ● | ● | ● | ● | ● | |
| | | | Relieving type | ● | ● | ● | ● | ● | |
| | | e | Flow direction | ● | ● | ● | ● | ● | |
| | | | Flow direction: Left to right | ● | ● | ● | ● | ● | |
| | | f | Knob | ● | ● | ● | ● | ● | |
| | | | Downward | ● | ● | ● | ● | ● | |
| | | g | Pressure unit | ● | ● | ● | ● | ● | |
| | | | Name plate and pressure gauge in imperial units: MPa | ● | ● | ● | ● | ● | |

- 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

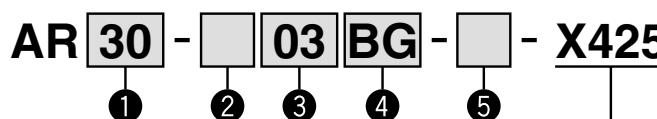
Strong materials are used in the manufacturing of air filters intended for high pressure operation. Also, construction modification allows a wider regulating pressure range.

Specifications

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

Applicable Model

| Model | AR20 | AR25 | AR30 | AR40 | AR40-06 | AR50 | AR60 |
|------------------|----------|----------|----------|---------------|---------|--------|------|
| 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 |



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-X425

| | | Symbol | Description | ① Body size | | | | | |
|---|---------------|--------|--|-------------|----|----|----|----|----|
| | | | | 20 | 25 | 30 | 40 | 50 | 60 |
| 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 | ● | ● | ● | ● | ● | |
| | | | Without mounting option | ● | ● | ● | ● | ● | |
| | | | With bracket | ● | ● | ● | ● | ● | |
| ④ | Option | b | Pressure gauge | ● | ● | ● | ● | ● | |
| | | | Round type pressure switch (with limit indicator) | ● | ● | ● | ● | ● | |
| | | | With set nut (for panel fitting) | ● | ● | ● | — | — | |
| ⑤ | Semi-standard | c | Exhaust mechanism | ● | ● | ● | ● | ● | |
| | | | Relieving type | ● | ● | ● | ● | ● | |
| | | d | Flow direction | ● | ● | ● | ● | ● | |
| | | | Flow direction: Left to right | ● | ● | ● | ● | ● | |
| | | e | Knob | ● | ● | ● | ● | ● | |
| | | | Downward | ● | ● | ● | ● | ● | |
| | | f | Pressure unit | ● | ● | ● | ● | ● | |
| | | | Name plate and pressure gauge in imperial units: MPa | ● | ● | ● | ● | ● | |
| | | g | Pressure unit | ● | ● | ● | ● | ● | |
| | | | 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 *AR10 to AR60* Regulator with Backflow Function *AR20K to AR60K* Made to Order Specifications:



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 |

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

| | | Symbol | Description | ① Body size | | | | | | |
|---|------------------------|-------------------------|---------------------------|--|-----------|-----------|-----------|-----------|-----------|-----------|
| | | | | 10 | 20 | 25 | 30 | 40 | 50 | 60 |
| ② | With backflow function | Nil | Without backflow function | ● | ● | ● | ● | ● | ● | ● |
| | | K Note 1) | With backflow function | — | ● | ● | ● | ● | ● | ● |
| ③ | Thread type | + | | | | | | | | |
| | | Nil | Metric thread (M5) | ● | — | — | — | — | — | — |
| | | Rc | | — | ● | ● | ● | ● | ● | ● |
| | | N | NPT | — | ● | ● | ● | ● | ● | ● |
| ④ | Port size | F | G | — | ● | ● | ● | ● | ● | ● |
| | | + | | | | | | | | |
| | | M5 | M5 | ● | — | — | — | — | — | — |
| | | 01 | 1/8 | — | ● | — | — | — | — | — |
| | | 02 | 1/4 | — | ● | ● | — | — | — | — |
| | | 03 | 3/8 | — | — | ● | ● | — | — | — |
| ⑤ | a | Mounting | Nil | Without mounting option | ● | ● | ● | ● | ● | ● |
| | | | B Note 3) | With bracket | ● | ● | ● | ● | ● | ● |
| | | | H | With set nut (for panel fitting) | ● | ● | ● | ● | — | — |
| | b | Pressure gauge | Nil | 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 Note 4) | Output: NPN output / Electrical entry: Wiring bottom entry | — | ● | ● | ● | ● | ● |
| | | | E2 Note 4) | Output: NPN output / Electrical entry: Wiring top entry | — | ● | ● | ● | ● | ● |
| | | | E3 Note 4) | Output: PNP output / Electrical entry: Wiring bottom entry | — | ● | ● | ● | ● | ● |
| | | | E4 Note 4) | 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 imperial units: MPa | ○ Note 7) | ○ Note 7) | ○ Note 7) | ○ Note 7) | ○ Note 7) | ○ Note 7) |
| | | | Z Note 5) | Name plate and pressure gauge in imperial units: psi | — | △ Note 8) | △ Note 8) | △ Note 8) | △ Note 8) | △ Note 8) |

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 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), 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.

AC

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AF800
AF900