

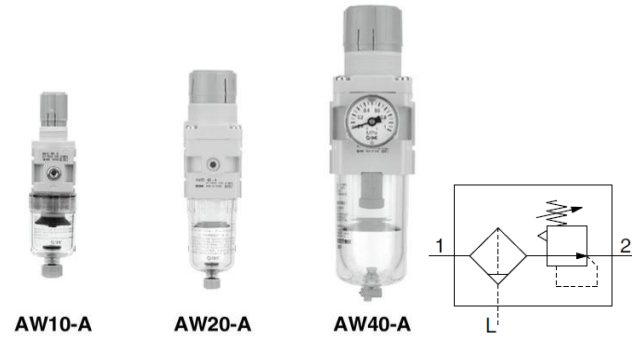


ORIGINAL INSTRUCTIONS

Instruction Manual

Filter Regulator

Series AW-A



The intended use of this product is to filter and regulate the air in the pneumatic circuit.

1 Safety Instructions

These safety instructions are intended to prevent hazardous situations and/or equipment damage. These instructions indicate the level of potential hazard with the labels of "Caution," "Warning" or "Danger." They are all important notes for safety and must be followed in addition to International Standards (ISO/IEC)¹⁾, and other safety regulations.

- ¹⁾ ISO 4414: Pneumatic fluid power - General rules relating to systems.
 ISO 4413: Hydraulic fluid power - General rules relating to systems.
 IEC 60204-1: Safety of machinery - Electrical equipment of machines. (Part 1: General requirements)
 ISO 10218-1: Manipulating industrial robots - Safety. etc.

- Refer to product catalogue, Operation Manual and Handling Precautions for SMC Products for additional information.
- Keep this manual in a safe place for future reference.

| | |
|----------------|--|
| Caution | Caution indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury. |
| Warning | Warning indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury. |
| Danger | Danger indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury. |

Warning

- Always ensure compliance with relevant safety laws and standards.
- All work must be carried out in a safe manner by a qualified person in compliance with applicable national regulations.

2 Specifications

2.1 Specification

| | |
|-------------------------------|---|
| Series | AW□□-A |
| Construction | Relieving type |
| Max. operating pressure | 1.0 MPa |
| Set pressure range | 0.05 to 0.7 MPa |
| Proof pressure | 1.5 MPa |
| Pressure gauge port size | AW10-A ^{Note} AW20-A, AW30-A, AW40-A, AW40-06-A |
| Ambient and fluid temperature | -5 to +60 °C (no freezing) |
| Fluid | Air |
| Filtration | 5 μm |
| Flow | Refer to catalogue |

2 Specifications – continued

| | | |
|----------------|---------------------------|--------------------------|
| Drain capacity | AW10-A | 2.5 (cm ³) |
| | AW20-A | 8 (cm ³) |
| | AW30-A | 25 (cm ³) |
| | AW40-A | 45 (cm ³) |
| Bowl material | | Polycarbonate |
| Bowl guard | AW10-A | - |
| | AW20-A | Semi-standard (Steel) |
| | AW30-A, AW40-A, AW40-06-A | Standard (polycarbonate) |

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

2.2 Port size and weight

| Model | Port size | Weight (kg) |
|-----------|---------------|-------------|
| AW10-A | M5 x 0.8 | 0.09 |
| AW20-A | 1/8, 1/4 | 0.21 |
| AW30-A | 1/4, 3/8 | 0.41 |
| AW40-A | 1/4, 3/8, 1/2 | 0.75 |
| AW40-06-A | 3/4 | 0.81 |

2.3 Design/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 0.15MPa or less. Use the regulator with backflow function.
- The standard bowl for the air filter, filter regulator, and lubricator, as well as the sight dome for the lubricator are made of polycarbonate. Do not use in an environment where they are exposed to or come in contact with organic solvents, chemicals, cutting oil, synthetic oil,

alkali, and thread lock solutions.

- Set pressure of outlet pressure shall be 85% or less of inlet pressure. Pressure over 85% makes operation susceptible to flow and inlet pressure and may lead to unstable operation.

$$P_2 < P_1 \times 0.85$$

3 Installation

3.1 Installation

Warning

- Do not install the product unless the safety instructions have been read and understood.

3.2 Environment

Warning

- Do not use in an environment where corrosive gases, chemicals, salt water or steam are present.
- Do not use in an explosive atmosphere.
- Do not expose to direct sunlight. Use a suitable protective cover.
- Do not use in a place subject to heavy vibration and/or shock.
- Do not mount in a location exposed to radiant heat that would result in temperatures in excess of the product's specifications.

3.3 Piping

Caution

- Before connecting piping make sure to clean up chips, cutting oil, dust etc.
- When installing piping or fittings, ensure sealant material does not enter inside the port. When using seal tape, leave 1 thread exposed on the end of the pipe/fitting.
- Tighten fittings to the specified tightening torque.

3 Installation - continued

3.4 Lubrication

Caution

- SMC products have been lubricated for life at manufacture, and do not require lubrication in service.
- If a lubricant is used in the system, refer to catalogue for details.

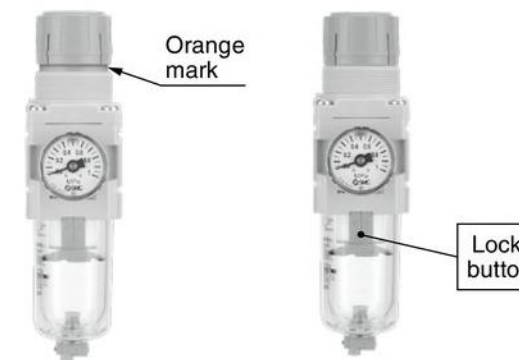
3.5 Mounting/Adjustment

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).
- 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
- When the bowl is installed on the AW30-A/ AW40-A, install the product so that the lock button lines up to the groove of the front (or the back) of the body to avoid drop or damage of the bowl.



4 How to Order

Refer to drawings or catalogue for 'How to Order'.

5 Outline Dimensions (mm)

Refer to drawings or catalogue for outline dimensions.

Panel fitting dimensions

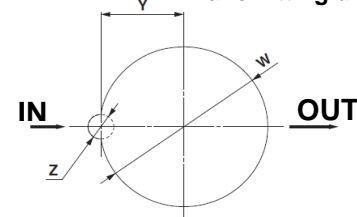


Plate thickness

AW10-A: Max 3.5
 AW20-A: Max. 4
 AW30-A to AW40-06-A: Max 8

5 Outline Dimensions (mm) - continued

| Model | Optional specifications | | |
|-----------|-------------------------|------|---|
| | Panel mount | | |
| | W | Y | Z |
| AW10-A | 18.5 | - | - |
| AW20-A | 36.5 | 17.5 | 6 |
| AW30-A | 45.5 | 22.5 | 7 |
| AW40-A | 52.5 | 26 | 7 |
| AW40-06-A | 52.5 | 26 | 7 |

6 Maintenance

6.1 General Maintenance

Caution

- Not following proper maintenance procedures could cause the product to malfunction and lead to equipment damage.
- If handled improperly, compressed air can be dangerous.
- Maintenance of pneumatic systems should be performed only by qualified personnel.
- Before performing maintenance, turn off the power supply and be sure to cut off the supply pressure. Confirm that the air is released to atmosphere.
- After installation and maintenance, apply operating pressure and power to the equipment and perform appropriate functional and leakage tests to make sure the equipment is installed correctly.
- If any electrical connections are disturbed during maintenance, ensure they are reconnected correctly and safety checks are carried out as required to ensure continued compliance with applicable national regulations.
- Do not make any modification to the product.
- Do not disassemble the product, unless required by installation or maintenance instructions
- Periodical adjustment of manual regulator might be required.

Warning

Replace the element every 2 years or when the pressure drop becomes 0.1 MPa, whichever comes first, to prevent damage to the element.

7 Limitations of Use

7.1 Limited warranty and Disclaimer/Compliance Requirements

Refer to Handling Precautions for SMC Products.

Warning

- The system designer should determine the effect of the possible failure states on the system.
- Regulator is not to be used as a pressure relief valve, apply additional measure to relieve large volume of pressurised air.

8 Contacts

Refer to www.smcworld.com for contacts.

SMC Corporation

URL : <http://www.smcworld.com> (Global) <http://www.smceu.com> (Europe)
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