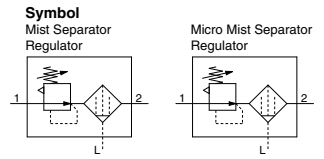


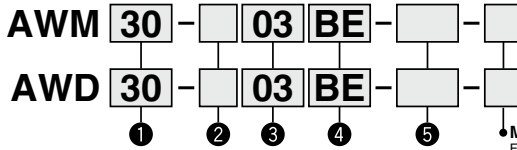
Mist Separator Regulator AWM20 to AWM40

Micro Mist Separator Regulator AWD20 to AWD40



- The AWM series is made up of a regulator and a mist separator to provide optimum results in applications such as clean air blow operations. (Nominal filtration rating: 0.3 μm)
- The AWD series is made up of a regulator and a micro mist separator to provide optimum results in applications such as ultraclean air blow operations. (Nominal filtration rating: 0.01 μm)

How to Order



• Option/Semi-standard: Select one each for a to i.
 • Option/Semi-standard symbol: When more than one specification is required, indicate in alphanumeric order.
 Example) AWM30-03BE-1N

For details, refer to pages 536 and 537.

| | | Symbol | Description | ① | | | |
|-------------------------|---|---------------------------------|--|---|----|----|---|
| | | | | Body size | | | |
| | | | | 20 | 30 | 40 | |
| ② | Thread type | Nil | Rc | ● | ● | ● | |
| | | N ^{Note 1)} | NPT | ● | ● | ● | |
| | | F ^{Note 2)} | G | ● | ● | ● | |
| + | | | | | | | |
| ③ | Port size | 01 | 1/8 | ● | — | — | |
| | | 02 | 1/4 | ● | ● | ● | |
| | | 03 | 3/8 | — | ● | ● | |
| | | 04 | 1/2 | — | — | ● | |
| + | | | | | | | |
| ④ Option | a | Mounting | Nil | Without mounting option | ● | ● | ● |
| | | | B ^{Note 4)} | With bracket | ● | ● | ● |
| | | | H | With set nut | ● | ● | ● |
| | + | | | | | | |
| | b | Float type auto drain | Nil | Without auto drain | ● | ● | ● |
| | | | C | Float type auto drain (N.C.) | ● | ● | ● |
| | | | D | Float type auto drain (N.O.) | — | ● | ● |
| | + | | | | | | |
| | c | Pressure gauge | Nil | Without pressure gauge | ● | ● | ● |
| | | | E | Square embedded type pressure gauge | ● | ● | ● |
| | | | G | Round type pressure gauge | ● | ● | ● |
| | | | M | Round type pressure gauge (with color zone) | ● | ● | ● |
| Digital pressure switch | | 1 ^{Note 5)} | Output: NPN output / Electrical entry: Wiring bottom entry | ● | ● | ● | |
| | | E2 ^{Note 5)} | Output: NPN output / Electrical entry: Wiring top entry | ● | ● | ● | |
| | | E3 ^{Note 5)} | Output: PNP output / Electrical entry: Wiring bottom entry | ● | ● | ● | |
| E4 ^{Note 5)} | Output: PNP output / Electrical entry: Wiring top entry | ● | ● | ● | | | |
| + | | | | | | | |
| ⑤ Semi-standard | d | Set pressure ^{Note 6)} | Nil | 0.05 to 0.85 MPa setting | ● | ● | ● |
| | | | 1 ^{Note 7)} | 0.05 to 0.2 MPa setting | ● | ● | ● |
| | + | | | | | | |
| | e | Bowl ^{Note 8)} | Nil | Polycarbonate bowl | ● | ● | ● |
| | | | 2 | Metal bowl | ● | ● | ● |
| | | | 6 | Nylon bowl | ● | ● | ● |
| | | | 8 | Metal bowl with level gauge | — | ● | ● |
| | | | C | With bowl guard | ● | — | — |
| | 6C | Nylon bowl with bowl guard | ● | — | — | | |
| | + | | | | | | |
| f | Drain port ^{Note 9)} | Nil | With drain cock | ● | ● | ● | |
| | | J ^{Note 10)} | Drain guide 1/8 | ● | — | — | |
| | | W ^{Note 11)} | Drain cock with barb fitting: For ø6 x ø4 nylon tube | — | ● | ● | |

Mist Separator Regulator *Series AWM20 to AWM40*

Micro Mist Separator Regulator *Series AWD20 to AWD40*



AWM20, AWD20 AWM40, AWD40

- AC-A
- AF-A
- AF□-A
- AR-A
- AL-A
- AW-A
- AC
- AF
- AF□
- AR
- AL
- AW□
- AF□G
- E□
- AV
- AF

| | | Symbol | Description | ① | | |
|---|---|-------------------|--|---|------------------------|----|
| | | | | Body size | | |
| | | | | 20 | 30 | 40 |
| 5 | g | Exhaust mechanism | Nil N + Relieving type Non-relieving type | ● | ● | ● |
| | | h | Flow direction | Nil R + Flow direction: Left to right Flow direction: Right to left | ● | ● |
| | i | Pressure unit | Nil Z ZA Name plate, caution plate for bowl, and pressure gauge in imperial units: MPa Name plate, caution plate for bowl, and pressure gauge in imperial units: psi, "F Digital pressure switch: With unit conversion function | ● | ● | ● |
| | | | ○ Note 14 △ Note 15 | ○ Note 14 △ Note 15 | ○ Note 14 △ Note 15 | |

Note 1) Drain guide is NPT1/8 (applicable to the AWM20, AWD20) and NPT1/4 (applicable to the AWM30 to AWM40, AWD30 to AWD40). The auto drain port comes with $\phi 3/8"$ one-touch fitting (applicable to the AWM30 to AWM40, AWD30 to AWD40).

Note 2) Drain guide is G1/8 (applicable to the AWM20, AWD20) and G1/4 (applicable to the AWM30 to AWM40, AWD30 to AWD40).

Note 3) Option B, G, H, M are not assembled and supplied loose at the time of shipment.

Note 4) Assembly of a bracket and set nuts

Note 5) When choosing with H (panel mount), the installation space for lead wires will not be secured. In this case, select "wiring bottom entry" for the electrical entry.

Note 6) Float type auto drain: when used in combination with C or D, minimum set pressure is: N.O. type-0.1 MPa; N.C. type-0.1 MPa (AD27) and 0.15 MPa (AD37/47).

Note 7) 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 8) Refer to Chemical Data on page 365 when selecting a case material.

Note 9) Float type auto drain: The combination of C and D is not possible.

Note 10) Without a valve function

Note 11) Metal bowl: The combination of 2 and 8 is not possible.

Note 12) 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.) The digital pressure switch will be equipped with the unit conversion function, setting to psi initially. The combination of the round type pressure gauge with color zone "M" and a psi display "Z" is not orderable as a standard product. However, this combination is available as a special.

Note 13) 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 14) ○: For thread type: NPT only

Note 15) △: Select with options: E1, E2, E3, E4.

Standard Specifications

| Model | AWM20 AWD20 | AWM30 AWD30 | AWM40 AWD40 |
|--|-------------------------------|--|----------------|
| Port size | 1/8, 1/4 | 1/4, 3/8 | 1/4, 3/8, 1/2 |
| Fluid | Air | | |
| Proof pressure | 1.5 MPa | | |
| Maximum operating pressure | 1.0 MPa | | |
| Set pressure range | 0.05 to 0.85 MPa | | |
| Pressure gauge port size ^{Note 1)} | 1/8 | | 1/4 |
| Ambient and fluid temperature ^{Note 2)} | -5 to 60°C (with no freezing) | | |
| Nominal filtration rating | AWM20 to AWM40 | 0.3 μm (99.9% filtered particle size) | |
| | AWD20 to AWD40 | 0.01 μm (99.9% filtered particle size) | |
| Outlet side oil mist concentration | AWM20 to AWM40 | Max. 1.0 mg/m ³ (ANR) (= 0.8 ppm) ^{Note 3) Note 4)} | |
| | AWD20 to AWD40 | Max. 0.1 mg/m ³ (ANR) (Before saturated with oil 0.01 mg/m ³ (ANR) or less = 0.008 ppm) ^{Note 3) Note 4)} | |
| Rated flow (L/min (ANR)) ^{Note 5)} | AWM20 to AWM40 | 150 | 330 |
| | AWD20 to AWD40 | 90 | 450 |
| Drain capacity (cm ³) | 8 | 25 | 45 |
| Bowl material | Polycarbonate | | |
| Bowl guard | Semi-standard | Standard | |
| Construction | Relieving type | | |
| Weight (kg) | 0.29 | 0.59 | 1.25 |

Note 1) Pressure gauge connection threads are not available for F.R.L. unit with a square embedded type pressure gauge.

Note 2) -5 to 50°C for the products with the digital pressure switch.

Note 3) When the compressor oil mist discharge concentration is 30 mg/m³ (ANR).

Note 4) Bowl O-ring and other O-rings are slightly lubricated.

Note 5) Conditions: Mist separator inlet pressure: 0.7 MPa; outlet pressure: 0.5 MPa. The rated flow varies depending on the inlet pressure. Keep the air flow within the rated flow to prevent an outflow of lubricant to the outlet side.

Series AWM20 to AWM40

Series AWD20 to AWD40

Options/Part No.

| Optional specifications | | Model | | |
|--|--|---|--|----------------|
| | | AWM20 AWD20 | AWM30 AWD30 | AWM40 AWD40 |
| Bracket assembly ^{Note 1)} | | AW20P-270AS | AR30P-270AS | AR40P-270AS |
| Set nut | | AR20P-260S | AR30P-260S | AR40P-260S |
| Pressure gauge | Round type ^{Note 2)} | Standard | G36-10-□01 | G46-10-□02 |
| | | 0.02 to 0.2 MPa setting | G36-2-□01 | G46-2-□02 |
| | Round type ^{Note 2)} (with color zone) | Standard | G36-10-□01-L | G46-10-□02-L |
| | | 0.02 to 0.2 MPa setting | G36-2-□01-L | G46-2-□02-L |
| Square embedded type ^{Note 3)} | Standard | GC3-10AS [GC3P-010AS (Pressure gauge cover only)] | | |
| | 0.02 to 0.2 MPa setting | GC3-2AS [GC3P-010AS (Pressure gauge cover only)] | | |
| Digital pressure switch ^{Note 4)} | 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)] | |
| Float type auto drain ^{Note 5) Note 6)} | N.C. | | AD27 | AD37 |
| | N.O. | | — | AD38 |

Semi-standard/Bowl Assembly Part No.

| Semi-standard specifications | | | | | Model | | | |
|------------------------------|--|------|-------------------------------------|-------------------|-----------------|----------------|----------------|----------------|
| Bowl material | Float type auto drain ^{Note 5) Note 6)} | | With drain guide ^{Note 6)} | With barb fitting | With bowl guard | AWM20 AWD20 | AWM30 AWD30 | AWM40 AWD40 |
| | N.C. | N.O. | | | | | | |
| Polycarbonate | — | — | — | — | ● | C2SF-C | — | — |
| | ● | — | — | — | ● | AD27-C | — | — |
| | — | — | ● | — | — | C2SF-J | C3SF-J | C4SF-J |
| | — | — | — | ● | — | — | C3SF-W | C4SF-W |
| | — | — | ● | — | ● | C2SF-CJ | — | — |
| Nylon | — | — | — | — | — | C2SF-6 | C3SF-6 | C4SF-6 |
| | — | — | — | — | ● | C2SF-6C | — | — |
| | ● | — | — | — | — | AD27-6 | AD37-6 | AD47-6 |
| | — | ● | — | — | — | — | AD38-6 | AD48-6 |
| | ● | — | — | — | ● | AD27-6C | — | — |
| | — | — | ● | — | — | C2SF-6J | C3SF-6J | C4SF-6J |
| | — | — | — | ● | — | — | C3SF-6W | C4SF-6W |
| | — | — | ● | — | ● | C2SF-6CJ | — | — |
| Metal | — | — | — | — | — | C2SF-2 | C3SF-2 | C4SF-2 |
| | ● | — | — | — | — | AD27-2 | AD37-2 | AD47-2 |
| | — | ● | — | — | — | — | AD38-2 | AD48-2 |
| | — | — | ● | — | — | C2SF-2J | C3SF-2J | C4SF-2J |
| Metal bowl with level gauge | — | — | — | — | — | — | C3LF-8 | C4LF-8 |
| | ● | — | — | — | — | — | AD37-8 | AD47-8 |
| | — | ● | — | — | — | — | AD38-8 | AD48-8 |
| | — | — | ● | — | — | — | C3LF-8J | C4LF-8J |

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.

Note 3) Including one O-ring and 2 mounting screws. [] : Pressure gauge cover only

Note 4) Lead wire with connector (2 m), adapter, lock pin, O-ring (1 pc.), mounting screw (2 pcs.) are attached. [] : Switch body only.

Also, regarding how to order the digital pressure switch, please refer to page 538.

Note 5) Minimum operating pressure: N.O. type—0.1 MPa; N.C. type—0.1 MPa (AD27) and 0.15 MPa (AD37/47). Please contact SMC for psi and °F unit specifications.

Note 6) Please consult SMC for details on drain piping to fit NPT or G port sizes.

Note) • Including O-ring.

• Bowl assembly for the AWM30/40, AWD30/40 comes with a bowl guard (steel band material). (except when the bowl material is metal)



Series AWM20 to AWM40 Series AWD20 to AWD40 Specific Product Precautions

Be sure to read before handling. Refer to front matter 43 for Safety Instructions and pages 365 to 369 for F.R.L. Precautions.

Selection

Warning

1. Residual pressure release (outlet pressure release) is not complete by releasing inlet pressure. Please contact SMC regarding residual pressure release.

Air Supply

Caution

1. Install an air filter (AF series) as a pre-filter on the inlet side of the mist separator regulator to prevent premature clogging.
2. Install a mist separator (AFM series) as a pre-filter on the inlet side of the micro mist separator regulator to prevent premature clogging.

Maintenance

Warning

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

Mounting and Adjustment

Caution

1. 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.
2. The pressure gauge included with regulators for 0.02 to 0.2 MPa setting is for up to 0.2 MPa use only. Exceeding 0.2 MPa of pressure can damage the gauge.
3. Do not use tools on the pressure regulator knob as this may cause damage. It must be operated manually.

Mounting and Adjustment

Warning

1. 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).



2. A knob cover is available to prevent careless operation of the knob. Refer to page 539 for details.

| |
|-------|
| AC-A |
| AF-A |
| AF□-A |
| AR-A |
| AL-A |
| AW-A |
| AC |
| AF |
| AF□ |
| AR |
| AL |
| AW□ |
| AF□-G |
| E□ |
| AV |
| AF |

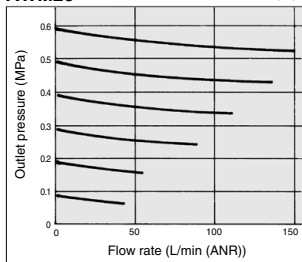
Series AWM20 to AWM40

Series AWD20 to AWD40

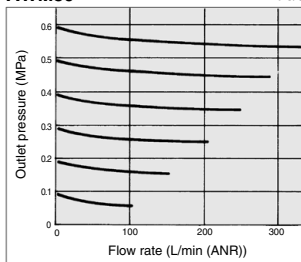
Flow Characteristics (Representative values)

Condition: Inlet pressure 0.7 MPa

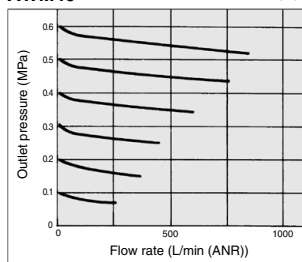
AWM20 Rc 1/4



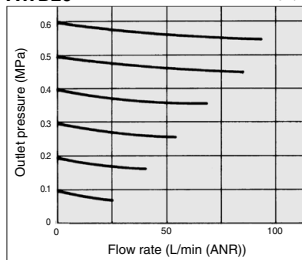
AWM30 Rc 3/8



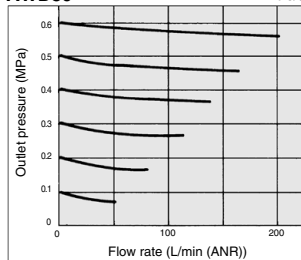
AWM40 Rc 1/2



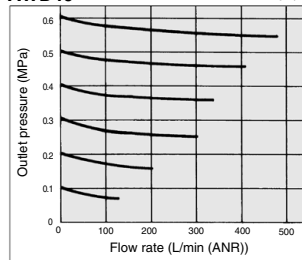
AWD20 Rc 1/4



AWD30 Rc 3/8



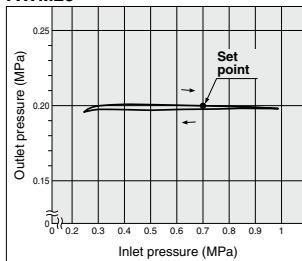
AWD40 Rc 1/2



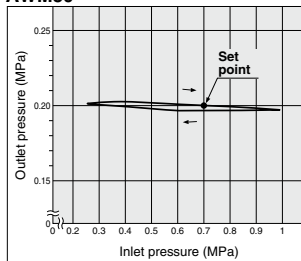
Pressure Characteristics (Representative values)

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

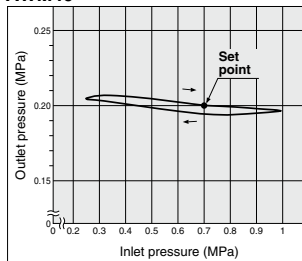
AWM20



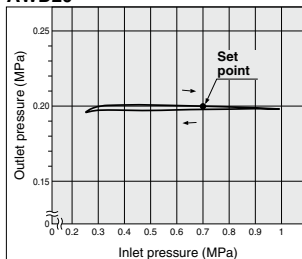
AWM30



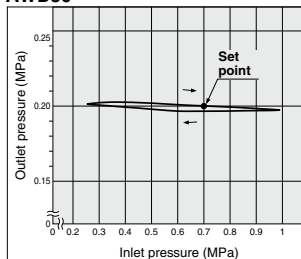
AWM40



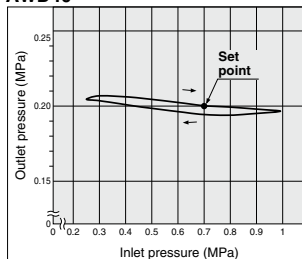
AWD20



AWD30



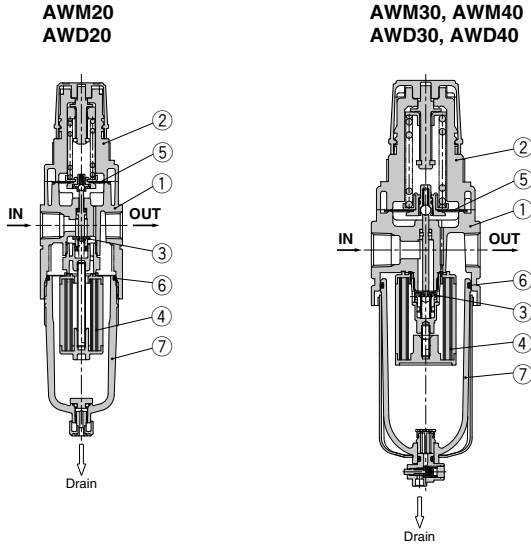
AWD40



Mist Separator Regulator *Series AWM20 to AWM40*

Micro Mist Separator Regulator *Series AWD20 to AWD40*

Construction



Component Parts

| No. | Description | Material | Model | Color |
|-----|-------------|-------------------|----------------------------------|-----------------|
| 1 | Body | Aluminum die-cast | AWM20 to AWM40 AWD20 to AWD40 | Platinum silver |
| 2 | Bonnet | Polycetal | AWM20 to AWM40 AWD20 to AWD40 | Black |

Replacement Parts

| No. | Description | Material | Part no. | | |
|-----|----------------------------------|-----------------|----------------|-------------------------|-------------------------|
| | | | AWM20 AWD20 | AWM30 AWD30 | AWM40 AWD40 |
| 3 | Valve assembly | Brass, HNBR | AWM20P-090AS | AWM30P-090AS | AWM40P-090AS |
| 4 | Element assembly | AWM20 to AWM40 | AFM20P-060AS | AFM30P-060AS | AFM40P-060AS |
| | | AWD20 to AWD40 | AFD20P-060AS | AFD30P-060AS | AFD40P-060AS |
| 5 | Diaphragm assembly | Weatherable NBR | AR20P-150AS | AR30P-150AS | AR40P-150AS |
| 6 | Bowl O-ring | NBR | C2SFP-260S | C3SFP-260S | C4SFP-260S |
| 7 | Bowl assembly ^{Note 1)} | Polycarbonate | C2SF | C3SF ^{Note 2)} | C4SF ^{Note 2)} |

Note 1) Bowl O-ring is included. Please contact SMC regarding the bowl assembly supply for psi and °F unit specifications.
 Note 2) Bowl assembly for the AWM30/40, AWD30/40 comes with a bowl guard (steel band material).

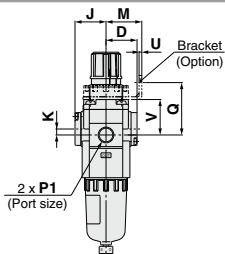
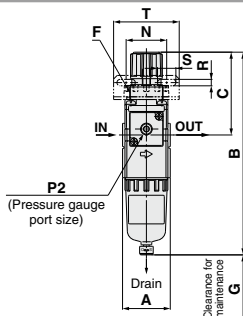
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- AF-A
- AF□-A
- AR-A
- AL-A
- AW-A
- AC
- AF
- AF□
- AR
- AL
- AW□
- A□G
- E□
- AV
- AF

Series AWM20 to AWM40

Series AWD20 to AWD40

Dimensions

AWM20
AWD20



Panel fitting dimension

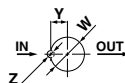
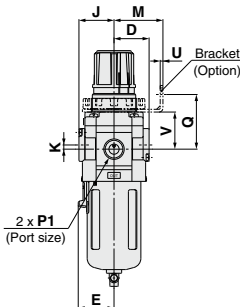
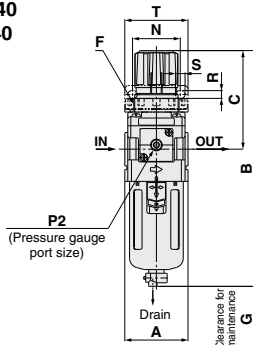


Plate thickness
AWM20, AWD20: Max. 3.5

AWM30, AWM40
AWD30, AWD40



Panel fitting dimension

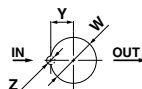
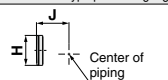
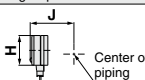
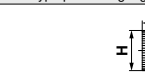
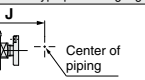
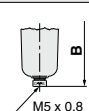
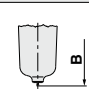
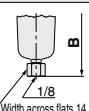
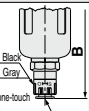
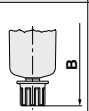
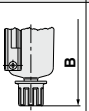
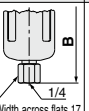
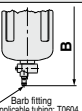


Plate thickness
AWM30, AWD30: Max. 3.5
AWM40, AWD40: Max. 5

| Applicable model | AWM20 to AWM40, AWD20 to AWD40 | | | |
|------------------|---|---|---|---|
| Option | Square embedded type pressure gauge | Digital pressure switch | Round type pressure gauge | Round type pressure gauge (with color zone) |
| Dimensions |  |  |  |  |

| Applicable model | AWM20, AWD20 | | | | AWM30/40, AWD30/40 | | | | |
|------------------|---|---|---|---|---|---|---|--|------------------------------|
| | Optional/Semi-standard specifications | With auto drain (N.C.) | Metal bowl | With drain guide | With auto drain (N.O./N.C.) | Metal bowl | Metal bowl with level gauge | With drain guide | Drain cock with barb fitting |
| Dimensions |  |  |  |  |  |  |  |  | |

| Model | Standard specifications | | | | | | | | | | | Optional specifications | | | | | | | |
|-------------|-------------------------|-----|----|----------|----|------|----|-----------|----|------|-----|-------------------------|------|-------|------|-------|------|-------|----|
| | P1 | P2 | A | B (Note) | C | D | E | F | G | J | K | H | J | H | J | H | J | | |
| AWM20/AWD20 | 1/8, 1/4 | 1/8 | 40 | 173 | 73 | 26 | — | M28 x 1 | 40 | 26 | 5 | □28 | 27 | □27.8 | 37.5 | □37.5 | 62.5 | □37.5 | 63 |
| AWM30/AWD30 | 1/4, 3/8 | 1/8 | 53 | 201 | 86 | 29.5 | 30 | M38 x 1.5 | 55 | 29.5 | 3.5 | □28 | 30.5 | □27.8 | 41 | □37.5 | 66 | □37.5 | 66 |
| AWM40/AWD40 | 1/4, 3/8, 1/2 | 1/4 | 70 | 239 | 92 | 37.5 | 38 | M42 x 1.5 | 80 | 37.5 | 1.5 | □28 | 38.5 | □27.8 | 49 | □42.5 | 76 | □42.5 | 76 |

| Model | Optional specifications | | | | | | | | | | Semi-standard specifications | | | | | |
|-------------|-------------------------|----|----|-----|------|-------------|-----|------|------|----|------------------------------|-------------------|----------|------------------|------------|-----------------------------|
| | Bracket mount | | | | | Panel mount | | | | | With auto drain | With barb fitting | | With drain guide | Metal bowl | Metal bowl with level gauge |
| | M | N | Q | R | S | T | U | V | W | Y | Z | B (Note) | B (Note) | B (Note) | B (Note) | B (Note) |
| AWM20/AWD20 | 30 | 34 | 44 | 5.4 | 15.4 | 55 | 2.3 | 30 | 28.5 | 14 | 6 | 190 | — | 177 | 173 | — |
| AWM30/AWD30 | 41 | 40 | 46 | 6.5 | 8 | 53 | 2.3 | 31 | 38.5 | 19 | 7 | 242 | 209 | 208 | 214 | 234 |
| AWM40/AWD40 | 50 | 54 | 54 | 8.5 | 10.5 | 70 | 2.3 | 35.5 | 42.5 | 21 | 7 | 278 | 247 | 246 | 252 | 272 |

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