# Membrane Air Dryer

RoHS New

## *Possible to easily supply dry air using the hollow fiber membrane!*

Non-fluorocarbon | Compatible with low dew point (−60°C) | No vibration or heat discharge

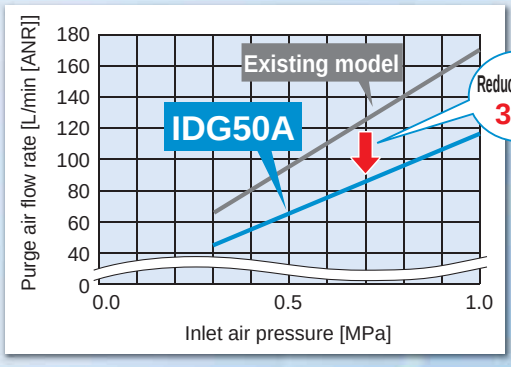
**Energy saving**

**Reduced in purge air flow by up to 39 [L/min [ANR]]**

Reduced purge IDG□A Series

**Cost reduced by up to**

**140.04 € /year !**




**Purge air flow rate (rated conditions)**

| Model | Running cost [€/year] | Purge air flow rate [L/min [ANR]] | Purge ratio [%] |
|---|---|---|---|
| IDG50A | 309.6 | 86 | 15 |
| Existing model | 450 | 125 | 20 |

[Calculation conditions]
Air unit price: 0.02 €/m³ Operating hours: 12 hours/day Annual operating days: 250 days/year

## Variations

### Single Unit Type

Reduced purge IDG□A Series

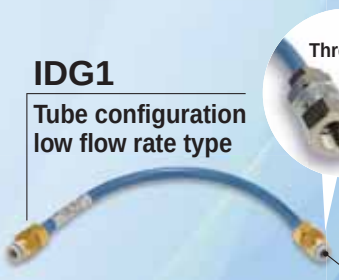
**IDG□A**

**Purge air flow reduction type**

**A white body is introduced.**

**IDG1**

**Tube configuration low flow rate type**




### Unit Type

**Adopted a new air combination with reduced required maintenance space and weight*!** * Except AR

**<Type M>**

When dry clean air is required.

Mist separator
+
Micro mist separator
+
IDG

**<Type V>**

When dry clean air and pressure control are required.

Mist separator
+
Micro mist separator
+
IDG
+
Regulator

## Single Unit

| Body size / Standard dew point | 1 | 3, 5 10, 20 | 30 | 50 | 60 | 75 | 100 |
|---|---|---|---|---|---|---|---|
| −20°C/— | ● | ● | ★ | ★ | ● | ● | ● |
| −15°C/Type H | ● | ● | ★ | ★ | ● | ● | ● |
| −40°C/Type L | ● | ● | ★ | ★ | ★ | ★ | ★ |
| −60°C/Type S | ● | ● | ★ | ★ | ★ | ★ | ★ |

★ IDG□A
● IDG

# Series IDG□A/IDG

SMC

CAT.EUS30-7F-UK

## Space saving

### Total length is shortened.
### *Series IDG30A to 100A*
# Max. 59 mm

(mm)

| Size | 30 | 50 | 60 | 75 | 100 |
|---|---|---|---|---|---|
| Shortened dimension | 2 | 7 | 44 | 54 | 59 |
| IDG□A | 291 | 330 | 348 | 418 | 483 |
| Existing model | 271 | 315 | 392 | 472 | 542 |

∗ Standard dew point: –40°C/L, –60°C/S


### Flexible mounting orientation
### *Series IDG1*
**Easy to install in narrow spaces!**

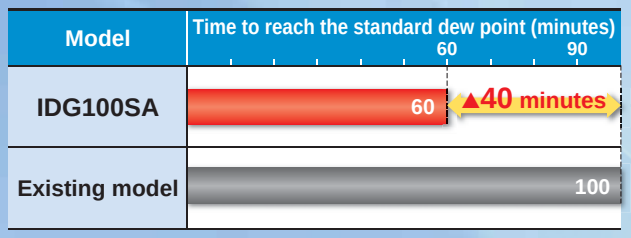

- Min. bending radius: **35** mm
- Possible to dehumidify like a tube.
- Weight: **45** g

## High performance

### Time to reach the standard dew point
### Shortened by 40 minutes

Reduced purge IDG□A Series

Under SMC test condition



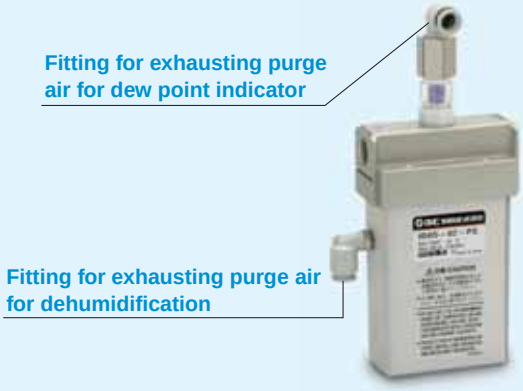

### With dew point indicator for visual confirmation of the air state

(Except IDG1)
(Semi-standard: IDG3, IDG5, IDG3H, IDG5H)

◎ Colour of the dew point indicator
- Blue (Green): Dry state
- Pink (Yellow): Wet state


### Model with fitting for purge air discharge is also available.

When purge air discharge is undesirable in the area around the membrane air dryer, it can be discharged to atmosphere via tubing (semi-standard).



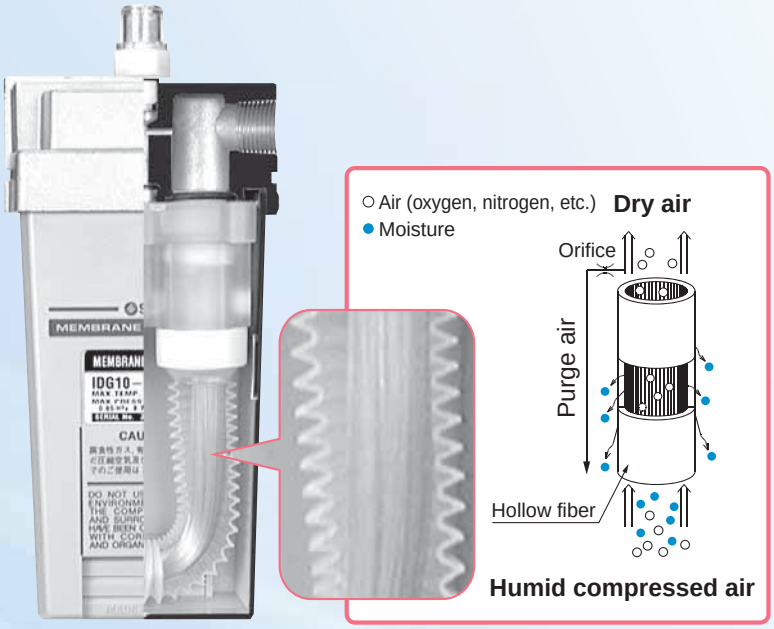

### Reduced in purge air discharge noise with built-in silencer

(Except IDG1, IDG3, IDG3H, IDG5, IDG5H, IDG30A, IDG30HA, IDG30LA, IDG50A, IDG50HA, IDG50LA)

## Dehumidification Principle

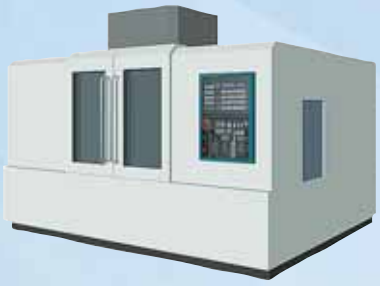
**The membrane air dryer uses hollow fibers composed of a macro molecular membrane through which moisture passes easily, but is difficult for air (oxygen and nitrogen) to pass through.**

When humid, compressed air is supplied to the inside of the hollow fibers, only moisture permeates the membrane and moves to the outside due to the pressure difference between the moisture inside and outside of the fibers. The compressed air becomes dry air and continues out of the dryer. Part of the dry air from the outlet side is passed through a very small orifice to reduce the pressure and purge the outside of the hollow fibers. The moisture which permeated to the outside of the hollow fibers is discharged to the atmosphere by this purge air. In this way, the partial pressure outside of the hollow fibers remains low and dehumidification is continuously performed.

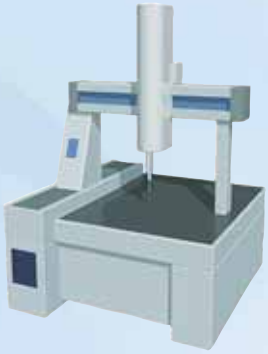



## Application Examples

### Machine Tool

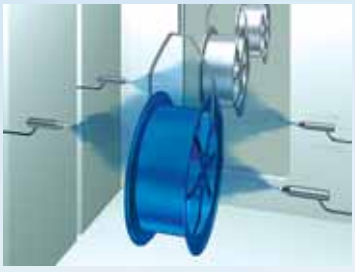


### Measuring Machine



### Semiconductor-related Manufacturing Equipment

### Powder Coating



### Food Machinery

### Packaging Machine
(sealing of film and paper package)

**Others**

- Dental equipment
- Chemical analysis equipment
- Ozonizers, Hydrogen gas generating equipment
- Printed circuit board IC mounting machines
- Fine particle drying, Transfer equipment
- Drying and cleaning of precision parts
- Condensation prevention in control panels
- General pneumatic equipment and pneumatic tools

## Series Variations

Meets a wide variety of flow rates (10 to 1000 L/min [ANR]) and dew points (Atmospheric pressure dew point: −15°C to −60°C).

### Single Unit Type

| Standard dew point: −20°C | | Standard dew point: −15°C | | Standard dew point: −40°C | | Standard dew point: −60°C | |
|---|---|---|---|---|---|---|---|
| Series | Outlet air flow rate [L/min [ANR]] | Series | Outlet air flow rate [L/min [ANR]] | Series | Outlet air flow rate [L/min [ANR]] | Series | Outlet air flow rate [L/min [ANR]] |
| IDG1 | 10 | | | | | | |
| IDG3 | 25 | IDG3H | 25 | | | | |
| IDG5 | 50 | IDG5H | 50 | | | | |
| IDG10 | 100 | IDG10H | 100 | | | | |
| IDG20 | 200 | IDG20H | 200 | | | | |
| IDG30A | 300 | IDG30HA | 300 | IDG30LA | 75 | | |
| IDG50A | 500 | IDG50HA | 500 | IDG50LA | 110 | | |
| IDG60 | 600 | IDG60H | 600 | IDG60LA | 170 | IDG60SA | 50 |
| IDG75 | 750 | IDG75H | 750 | IDG75LA | 240 | IDG75SA | 100 |
| IDG100 | 1000 | IDG100H | 1000 | IDG100LA | 300 | IDG100SA | 150 |

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Page 2

= Reduced purge

Note) Standard dew point: Outlet air atmospheric pressure dew point under standard performance conditions
Outlet air flow rate: Values under standard performance conditions

## Unit Type

### <Type M>

**A mist separator, micro mist separator, or micro mist separator with pre-filter combined with a single unit**

| Standard dew point: −20°C | | Standard dew point: −15°C | | Standard dew point: −40°C | | Standard dew point: −60°C | |
|---|---|---|---|---|---|---|---|
| Series | Outlet air flow rate [L/min [ANR]] | Series | Outlet air flow rate [L/min [ANR]] | Series | Outlet air flow rate [L/min [ANR]] | Series | Outlet air flow rate [L/min [ANR]] |
| IDG3M4 | 25 | IDG3HM4 | 25 | | | | |
| IDG5M4 | 50 | IDG5HM4 | 50 | | | | |
| IDG10M4 | 100 | IDG10HM4 | 100 | | | | |
| IDG20M4 | 200 | IDG20HM4 | 200 | | | | |
| IDG30AM4 | 300 | IDG30HAM4 | 300 | IDG30LAM4 | 75 | | |
| IDG50AM4 | 500 | IDG50HAM4 | 500 | IDG50LAM4 | 110 | | |
| IDG60M2 | 600 | IDG60HM2 | 600 | IDG60LAM4 | 170 | IDG60SAM4 | 50 |
| IDG75M2 | 750 | IDG75HM2 | 750 | IDG75LAM4 | 240 | IDG75SAM4 | 100 |
| IDG100M2 | 1000 | IDG100HM2 | 1000 | IDG100LAM4 | 300 | IDG100SAM4 | 150 |

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∗ Rated conditions: Inlet air pressure 0.7 MPa, Inlet air temperature 25°C

### <Type V>

**A regulator combined with the type M**

| Standard dew point: −20°C | | Standard dew point: −15°C | | Standard dew point: −40°C | | Standard dew point: −60°C | |
|---|---|---|---|---|---|---|---|
| Series | Outlet air flow rate [L/min [ANR]] | Series | Outlet air flow rate [L/min [ANR]] | Series | Outlet air flow rate [L/min [ANR]] | Series | Outlet air flow rate [L/min [ANR]] |
| IDG3V4 | 25 | IDG3HV4 | 25 | | | | |
| IDG5V4 | 50 | IDG5HV4 | 50 | | | | |
| IDG10V4 | 100 | IDG10HV4 | 100 | | | | |
| IDG20V4 | 200 | IDG20HV4 | 200 | | | | |
| IDG30AV4 | 300 | IDG30HAV4 | 300 | IDG30LAV4 | 75 | | |
| IDG50AV4 | 500 | IDG50HAV4 | 500 | IDG50LAV4 | 110 | | |
| IDG60V4 | 600 | IDG60HV4 | 600 | IDG60LAV4 | 170 | IDG60SAV4 | 50 |
| IDG75V4 | 750 | IDG75HV4 | 750 | IDG75LAV4 | 240 | IDG75SAV4 | 100 |
| IDG100V4 | 1000 | IDG100HV4 | 1000 | IDG100LAV4 | 300 | IDG100SAV4 | 150 |

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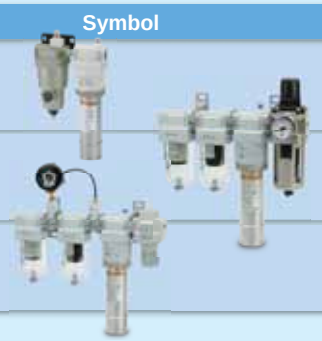
∗ Rated conditions: Inlet air pressure 0.7 MPa, Inlet air temperature 25°C

### Made to Order

| Symbol | Specifications |
|---|---|
| -X016 | With element service indicator |
| -X017 | With micro mist separator regulator |
| -X032 | With differential pressure gauge |



RoHS

# Membrane Air Dryer
# Single Unit Type
# Series IDG□A

## Standard dew point −20°C, −15°C, −40°C, −60°C

### How to Order

IDG **30** □ A − □ **03** □ − □

**Size**

| |
|---|
| 30 |
| 50 |
| 60 |
| 75 |
| 100 |

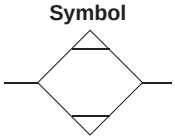
**Standard dew point temperature/Outlet air flow rate**

| Symbol | Standard dew point [°C] | Flow rate by size, Outlet air flow rate [L/min [ANR]] | | | | |
|---|---|---|---|---|---|---|
| | | 30 | 50 | 60 | 75 | 100 |
| — | −20 | 300 | 500 | Select from Series IDG (page 2) | | |
| H | −15 | 300 | 500 | | | |
| L | −40 | 75 | 110 | 170 | 240 | 300 |
| S | −60 | — | — | 50 | 100 | 150 |

**Thread type**

| Symbol | Type |
|---|---|
| — | Rc |
| N | NPT |
| F | G |

**Symbol**



**Semi-standard**

| Symbol | Specifications |
|---|---|
| — | None (Standard) |
| P | With fitting for purge air discharge |
| R | Flow direction (Right → Left) |

Note) In the case of more than one symbol, indicate them alphabetically.

**Accessory**

| Symbol | Specifications |
|---|---|
| — | None (Standard) |
| B | With bracket |

Note) When symbol: B is indicated, a bracket assembly with a part number shown to the left below is included as an accessory.

**Port size**

| Symbol | Port size | Size | | | | |
|---|---|---|---|---|---|---|
| | | 30 | 50 | 60 | 75 | 100 |
| 02 | 1/4 | ● | ● | — | — | — |
| 03 | 3/8 | ● | ● | ● | ● | ● |
| 04 | 1/2 | — | — | ● | ● | ● |

**Bracket Assembly (Accessory)/Part No.**

| Part no. | Applicable model |
|---|---|
| BM64 | IDG30□A, IDG50□A |
| BM65 | IDG60□A, IDG75□A, IDG100□A |

∗ With hexagon socket head cap screws (2 pcs.) and spring washers (2 pcs.)

# Membrane Air Dryer
# Single Unit Type
# Series IDG

RoHS



## How to Order

**IDG 10 ☐ – ☐ 02 ☐ – ☐**

**Size**

| |
|---|
| 1 |
| 3 |
| 5 |
| 10 |
| 20 |
| 60 |
| 75 |
| 100 |

**Standard dew point temperature/Outlet air flow rate**

| Symbol | Standard dew point [°C] | Flow rate by size, Outlet air flow rate [L/min [ANR]] | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 3 | 5 | 10 | 20 | 60 | 75 | 100 |
| — | −20 | 10 | 25 | 50 | 100 | 200 | 600 | 750 | 1000 |
| H | −15 | — | 25 | 50 | 100 | 200 | 600 | 750 | 1000 |
| L | −40 | — | — | — | — | — | Select from Series IDG□A (page 1) | | |
| S | −60 | — | — | — | — | — | | | |

**Accessory**

| Symbol | Specifications |
|---|---|
| — | None (Standard) |
| B | With bracket (Except IDG1) |

Note) When symbol: B is indicated, a bracket assembly with a part number shown to the left below is included as an accessory.

**Thread type/One-touch fitting**

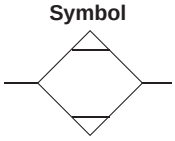
| Symbol | Type |
|---|---|
| — | Rc |
| N | NPT |
| F | G |
| C Note) | ø6 One-touch fitting |

Note) Size 1 only

**Port size/Applicable tubing O.D.**

| Symbol | Port size | Piping type | Size | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | 3 | 5 | 10 | 20 | 60 | 75 | 100 |
| 01 | 1/8 | Thread | — | ● | ● | — | — | — | — | — |
| 02 | 1/4 | | ● | ● | ● | ● | ● | — | — | — |
| 03 | 3/8 | | — | — | — | ● | ● | ● | — | — |
| 04 | 1/2 | | — | — | — | — | — | ● | ● | ● |
| 06 | ø6 | One-touch fitting | ● | — | — | — | — | — | — | — |

**Symbol**



**Bracket Assembly (Accessory)/Part No.**

| Part no. | Applicable model |
|---|---|
| BM59 | IDG3, 5 |
| BM61 | IDG10 |
| BM63 | IDG20 |
| BM65 | IDG60, 75, 100 |

∗ With hexagon socket head cap screws (2 pcs.) and spring washers (2 pcs.)

**Semi-standard**

| Symbol | Specifications | Size | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 3 | 5 | 10 | 20 | 60 | 75 | 100 |
| — | None (Standard) | ● | ● | ● | ● | ● | ● | ● | ● |
| P | With fitting for purge air discharge | ● | ● | ● | ● | ● | ● | ● | ● |
| R | Flow direction (Right → Left) | — | ● | ● | ● | ● | ● | ● | ● |
| S | With dew point indicator | — | ● | ● | Standard equipment | | | | |

Note) In the case of more than one symbol, indicate them alphabetically.

## Standard Specifications/Single Unit Type (Standard dew point −20°C, −15°C)

### Standard dew point···−20°C

| | Model | IDG1 | | IDG3 | IDG5 | IDG10 | IDG20 | IDG30A | IDG50A | IDG60 | IDG75 | IDG100 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Range of operating conditions | **Fluid** Note 1) | Compressed air | | | | | | | | | | |
| | **Inlet air pressure [MPa]** | 0.3 to 0.85 | | | | | | 0.3 to 1.0 | | | | |
| | **Inlet air temperature (°C)** | −5 to 55 (No freezing) | | | | | | −5 to 50 (No freezing) | | | | |
| | **Ambient temperature (°C)** | −5 to 55 (No freezing) | | | | | | −5 to 50 (No freezing) | | | | |
| Standard performance | **Outlet air atmospheric pressure dew point [°C]** | −20 | | | | | | | | | | |
| Standard performance conditions | Inlet air flow rate [L/min [ANR]] Note 2) | 12.5 | | 31 | 62 | 125 | 250 | 360 | 586 | 725 | 900 | 1190 |
| | Outlet air flow rate [L/min [ANR]] | 10 | | 25 | 50 | 100 | 200 | 300 | 500 | 600 | 750 | 1000 |
| | Purge air flow rate [L/min [ANR]] Note 3) | 2.5 | | 6 | 12 | 25 | 50 | 60 | 86 | 125 | 150 | 190 |
| | **Inlet air pressure [MPa]** | 0.7 | | | | | | | | | | |
| | **Inlet air temperature [°C]** | 25 | | | | | | | | | | |
| | Inlet air saturation temperature [°C] | 25 | | | | | | | | | | |
| | **Ambient temperature [°C]** | 25 | | | | | | | | | | |
| Dew point indicator purge air flow rate | | — | | | | 1 L/min [ANR] (Inlet air pressure at 0.7 MPa) | | | | | | |
| **Port size** | | 1/4 | — | 1/8, 1/4 | | 1/4, 3/8 | | | | 3/8, 1/2 | 1/2 | |
| **Applicable tubing O.D.** | | — | ø6 | — | | — | — | — | — | — | — | — |
| **Weight [kg] (With bracket)** | | 0.11 | 0.05 | 0.25 (0.31) | | 0.43 (0.51) | 0.66 (0.76) | 0.78 (0.91) | 0.81 (0.94) | 1.50 (1.65) | 1.50 (1.65) | 1.55 (1.70) |

Note 1) Prevent water droplets from entering the inlet port.
Note 2) "ANR" indicates the flow rate converted to the value at 20°C, under the atmospheric pressure and the state of relative humidity 65%.
Note 3) Includes 1 L/min [ANR] of purge air flow (Inlet air pressure at 0.7 MPa) for the dew point indicator (except IDG1, 3, 5).

### Standard dew point···−15°C/Type H

| | Model | IDG3H | IDG5H | IDG10H | IDG20H | IDG30HA | IDG50HA | IDG60H | IDG75H | IDG100H |
|---|---|---|---|---|---|---|---|---|---|---|
| Range of operating conditions | **Fluid** Note 1) | Compressed air | | | | | | | | |
| | **Inlet air pressure (MPa)** | 0.3 to 0.85 | | | | 0.3 to 1.0 | | | | |
| | **Inlet air temperature (°C)** | −5 to 55 | | | | −5 to 50 | | | | |
| | **Ambient temperature (°C)** | −5 to 55 | | | | −5 to 50 | | | | |
| Standard performance | **Outlet air atmospheric pressure dew point [°C]** | −15 | | | | | | | | |
| Standard performance conditions | Inlet air flow rate [L/min [ANR]] Note 2) | 28 | 56 | 111 | 222 | 329 | 550 | 665 | 830 | 1110 |
| | Outlet air flow rate [L/min [ANR]] | 25 | 50 | 100 | 200 | 300 | 500 | 600 | 750 | 1000 |
| | Purge air flow rate [L/min [ANR]] Note 3) | 3 | 6 | 11 | 22 | 29 | 50 | 65 | 80 | 110 |
| | **Inlet air pressure [MPa]** | 0.7 | | | | | | | | |
| | **Inlet air temperature [°C]** | 25 | | | | | | | | |
| | Inlet air saturation temperature [°C] | 25 | | | | | | | | |
| | **Ambient temperature [°C]** | 25 | | | | | | | | |
| Dew point indicator purge air flow rate | | — | | 1 L/min [ANR] (Inlet air pressure at 0.7 MPa) | | | | | | |
| **Port size** | | 1/8, 1/4 | | 1/4, 3/8 | | | | 3/8, 1/2 | 1/2 | |
| **Weight [kg] (With bracket)** | | 0.25 (0.31) | | 0.43 (0.51) | 0.66 (0.76) | 0.78 (0.91) | 0.81 (0.94) | 1.50 (1.65) | 1.50 (1.65) | 1.55 (1.70) |

Note 1) Prevent water droplets from entering the inlet port.
Note 2) "ANR" indicates the flow rate converted to the value at 20°C, under the atmospheric pressure and the state of relative humidity 65%.
Note 3) Includes 1 L/min [ANR] of purge air flow (Inlet air pressure at 0.7 MPa) for the dew point indicator (except IDG3H, 5H).

## Standard Specifications/Single Unit Type (Standard dew point −40°C, −60°C)

### Standard dew point···−40°C/Type L

| | Model | IDG30LA | IDG50LA | IDG60LA | IDG75LA | IDG100LA |
|---|---|---|---|---|---|---|
| Range of operating conditions | **Fluid** Note 1) | Compressed air | | | | |
| | **Inlet air pressure (MPa)** | 0.3 to 1.0 | | | | |
| | **Inlet air temperature (°C)** | −5 to 50 (No freezing) | | | | |
| | **Ambient temperature (°C)** | −5 to 50 (No freezing) | | | | |
| Standard performance | **Outlet air atmospheric pressure dew point [°C]** | −40 | | | | |
| Standard performance conditions | Inlet air flow rate [L/min [ANR]] Note 2) | 93 | 135 | 224 | 308 | 400 |
| | Outlet air flow rate [L/min [ANR]] | 75 | 110 | 170 | 240 | 300 |
| | Purge air flow rate [L/min [ANR]] Note 3) | 18 | 25 | 54 | 68 | 100 |
| | **Inlet air pressure [MPa]** | 0.7 | | | | |
| | **Inlet air temperature [°C]** | 25 | | | | |
| | Inlet air saturation temperature [°C] | 25 | | | | |
| | **Ambient temperature [°C]** | 25 | | | | |
| Dew point indicator purge air flow rate | | 1 L/min [ANR] (Inlet air pressure at 0.7 MPa) | | | | |
| **Port size** | | 1/4, 3/8 | | 3/8, 1/2 | | |
| **Weight [kg] (With bracket)** | | 0.78 (0.91) | 0.81 (0.94) | 1.56 (1.71) | 1.69 (1.84) | 1.82 (1.97) |

Note 1) Prevent water droplets from entering the inlet port.
Note 2) "ANR" indicates the flow rate converted to the value at 20°C, under the atmospheric pressure and the state of relative humidity 65%.
Note 3) Includes 1 L/min [ANR] of purge air flow (Inlet air pressure at 0.7 MPa) for the dew point indicator.

### Standard dew point···−60°C/Type S

| | Model | IDG60SA | IDG75SA | IDG100SA |
|---|---|---|---|---|
| Range of operating conditions | **Fluid** Note 1) | Compressed air | | |
| | **Inlet air pressure (MPa)** | 0.3 to 1.0 | | |
| | **Inlet air temperature (°C)** | −5 to 50 (No freezing) | | |
| | **Ambient temperature (°C)** | −5 to 50 (No freezing) | | |
| Standard performance | **Outlet air atmospheric pressure dew point [°C]** | −60 | | |
| Standard performance conditions | Inlet air flow rate [L/min [ANR]] Note 2) | 75 | 140 | 230 |
| | Outlet air flow rate [L/min [ANR]] | 50 | 100 | 150 |
| | Purge air flow rate [L/min [ANR]] Note 3) | 25 | 40 | 80 |
| | **Inlet air pressure [MPa]** | 0.7 | | |
| | **Inlet air temperature [°C]** | 25 | | |
| | Inlet air saturation temperature [°C] | 25 | | |
| | **Ambient temperature [°C]** | 25 | | |
| Dew point indicator purge air flow rate | | 1 L/min [ANR] (Inlet air pressure at 0.7 MPa) | | |
| **Port size** | | 3/8, 1/2 | | |
| **Weight [kg] (With bracket)** | | 1.56 (1.71) | 1.69 (1.84) | 1.82 (1.97) |

Note 1) Prevent water droplets from entering the inlet port.
Note 2) "ANR" indicates the flow rate converted to the value at 20°C, under the atmospheric pressure and the state of relative humidity 65%.
Note 3) Includes 1 L/min [ANR] of purge air flow (Inlet air pressure at 0.7 MPa) for the dew point indicator.

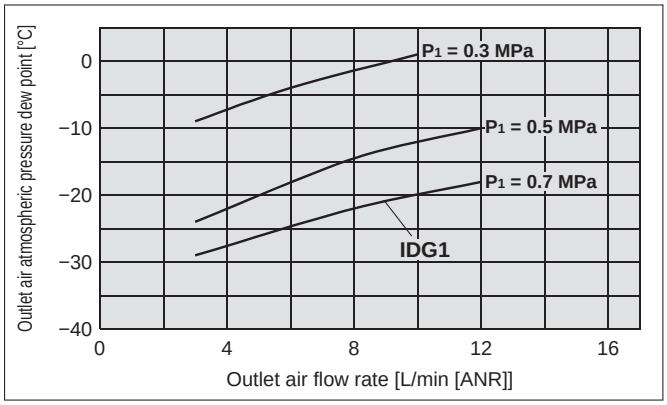
## Performance Chart

**Conditions: Inlet air temperature 25°C (saturated air), Ambient temperature 25°C, $P_1$: Inlet air pressure, Tube for purge air discharge (semi-standard: P): None**

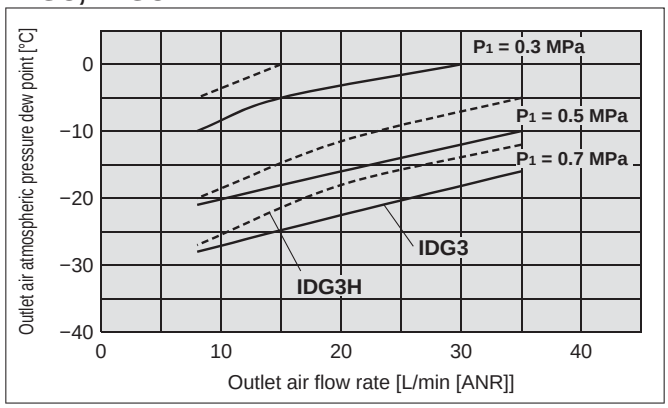
Note: Correcting outlet air flow rate is required depending on inlet air temperature. Refer to page 31 or after for details. For model with fitting for purge air discharge (semi-standard: P), the outlet air atmospheric pressure dew point may become higher depending on the tube length for purge air discharge. For other models, when the tube length is 5 meters or less, a rise of the outlet air atmospheric pressure dew point will be 1°C or less.

**Standard dew point···−20°C [Symbol: —], −15°C [Symbol: H]**

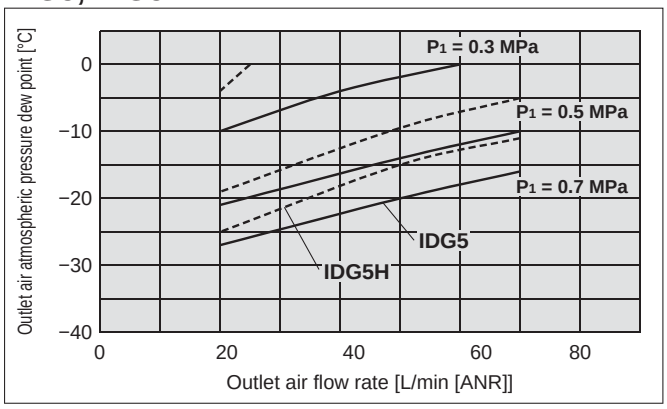
### IDG1



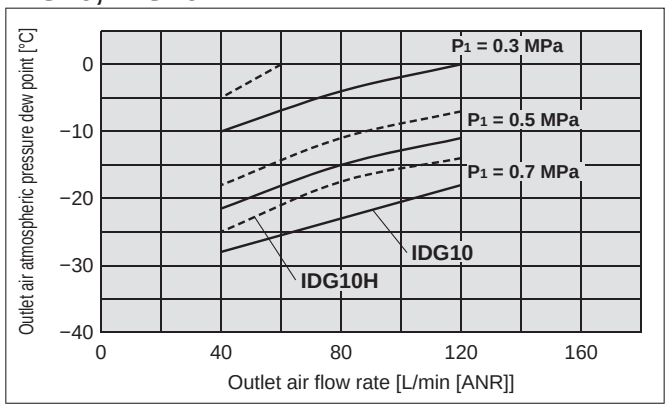

### IDG3, IDG3H



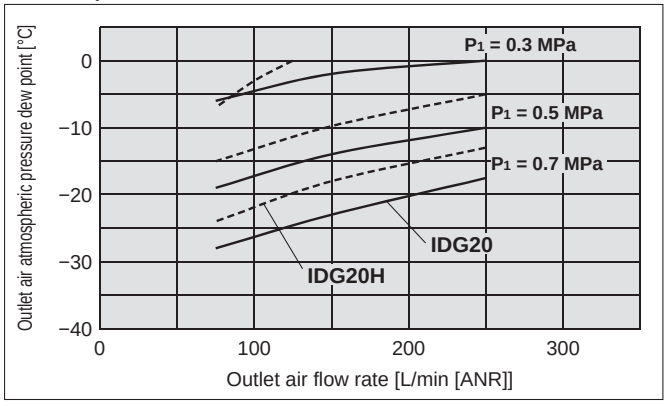

### IDG5, IDG5H



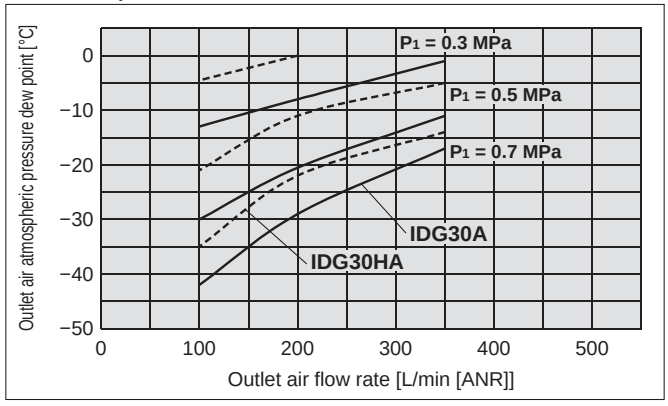

### IDG10, IDG10H



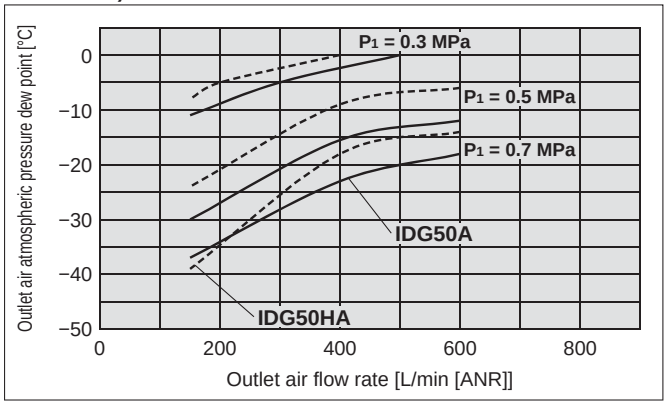

### IDG20, IDG20H



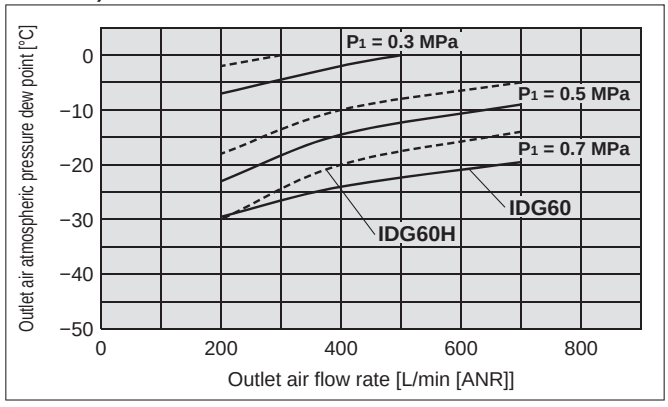

### IDG30A, IDG30HA




### IDG50A, IDG50HA

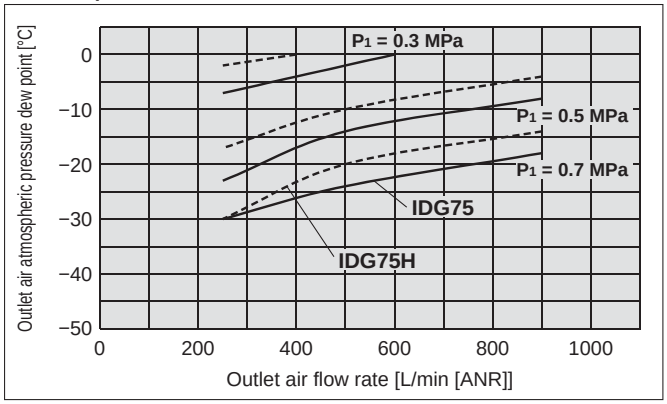



### IDG60, IDG60H

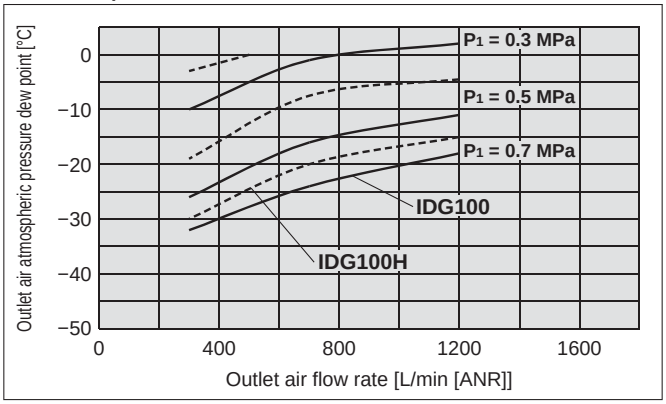


## Performance Chart

### IDG75, IDG75H

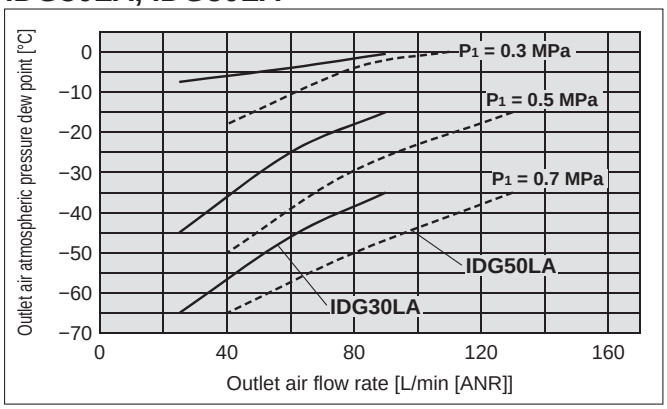



### IDG100, IDG100H

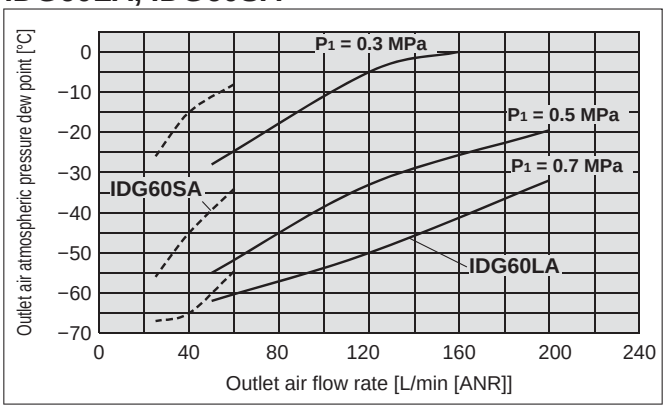



**Standard dew point···−40°C [Symbol: L], −60°C [Symbol: S]**

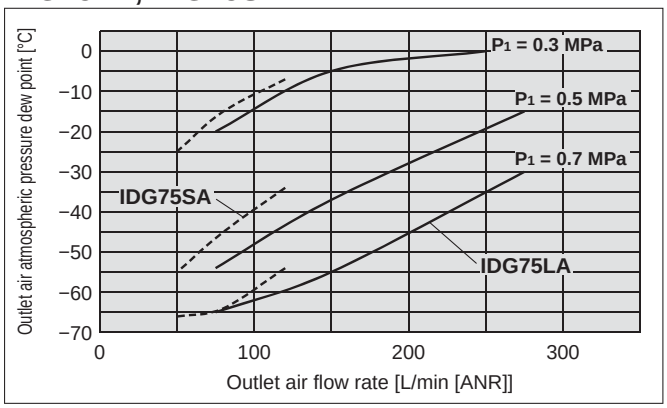
### IDG30LA, IDG50LA



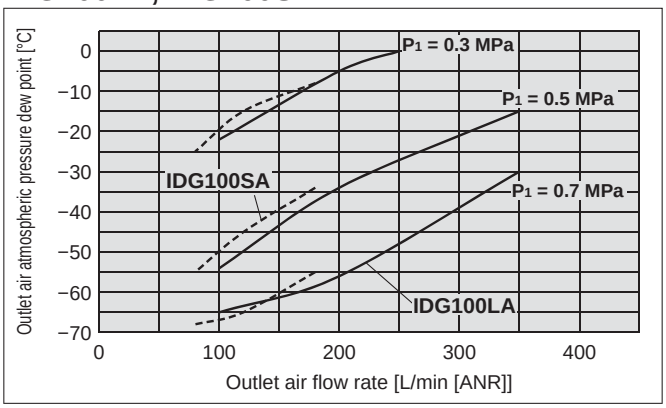

### IDG60LA, IDG60SA




### IDG75LA, IDG75SA




### IDG100LA, IDG100SA

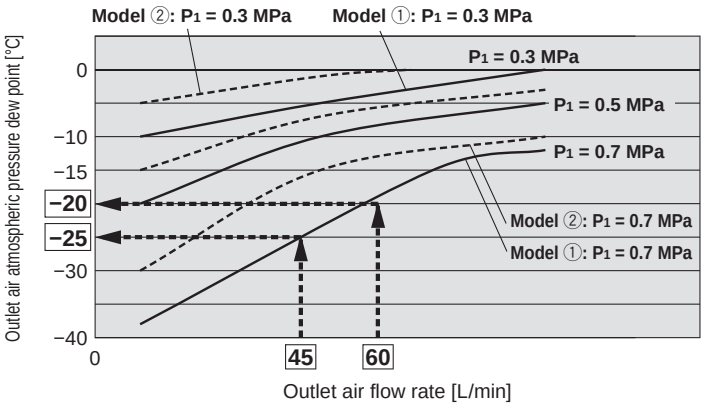



### How to read the Performance Chart and select the model

Solid lines and dashed lines beginning at the top indicate the performance of inlet air temperature at 25°C and inlet air pressure $P_1$ = 0.3 MPa, 0.5 MPa, 0.7 MPa respectively.

- For the inlet air temperature at 25°C and outlet air flow rate at 45 (L/min)
  Model ①: The outlet air atmospheric pressure dew point at $P_1$ = 0.7 MPa: –25 (°C).

- For the inlet air temperature at 45°C and outlet air flow rate at 45 (L/min)
  Example) Outlet air flow rate correction factor: 0.75
  (The correction factor differs depending on the model. Refer to page 31 or after for details.)
  Corrected outlet air flow rate: 45 ÷ 0.75 = 60 (L/min).
  Model ①: Performing corresponding to the outlet air atmospheric pressure dew point –20 (°C) at $P_1$ = 0.7 MPa.

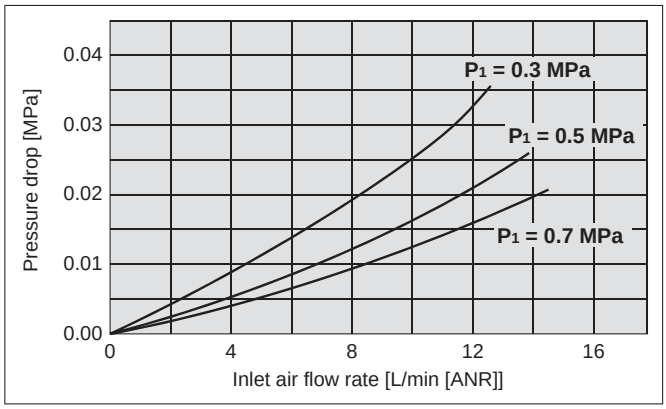


## Single Unit Type/Flow-rate Characteristics

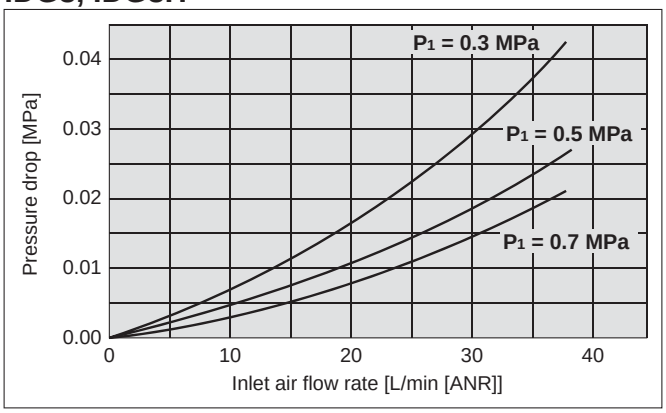
Conditions: Inlet air temperature 25°C, $P_1$: Inlet air pressure

**Standard dew point···−20°C [Symbol: —], −15°C [Symbol: H]**

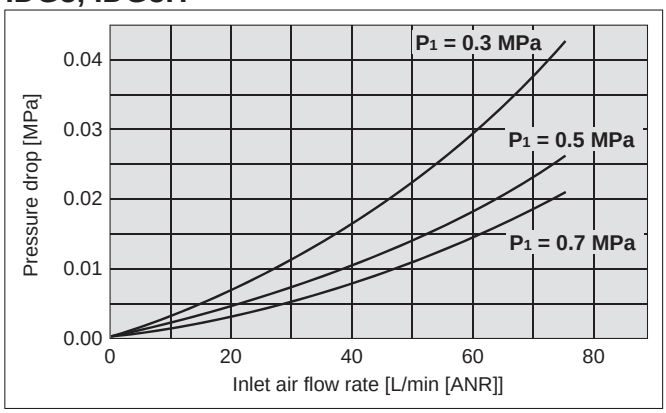
### IDG1



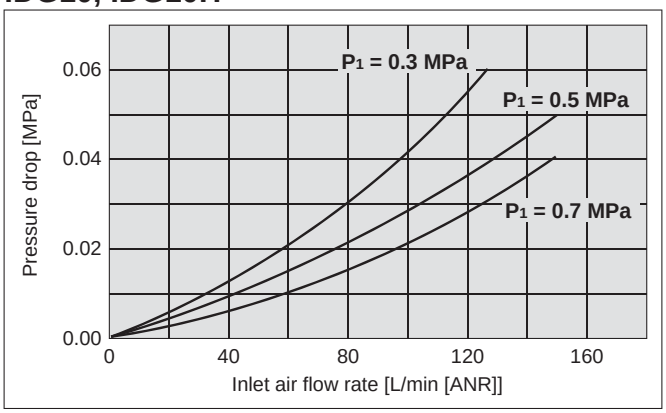

### IDG3, IDG3H



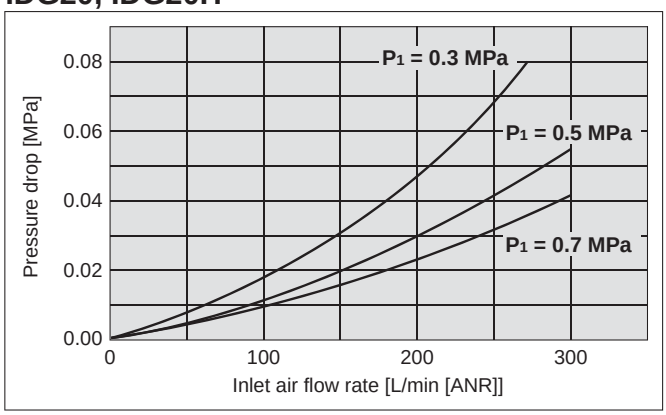

### IDG5, IDG5H



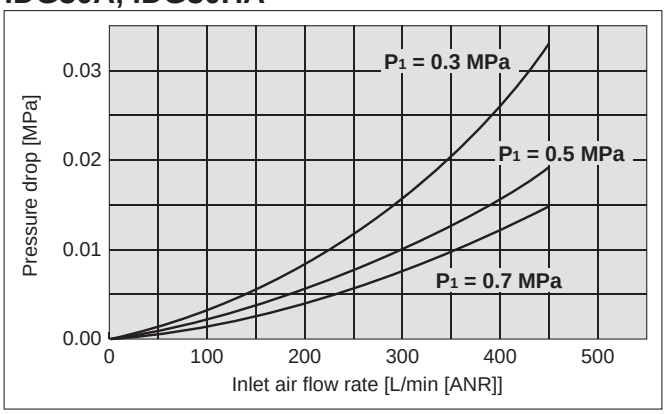

### IDG10, IDG10H



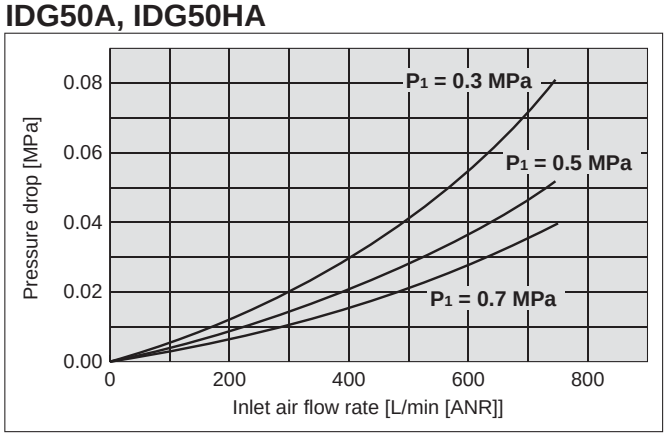

### IDG20, IDG20H



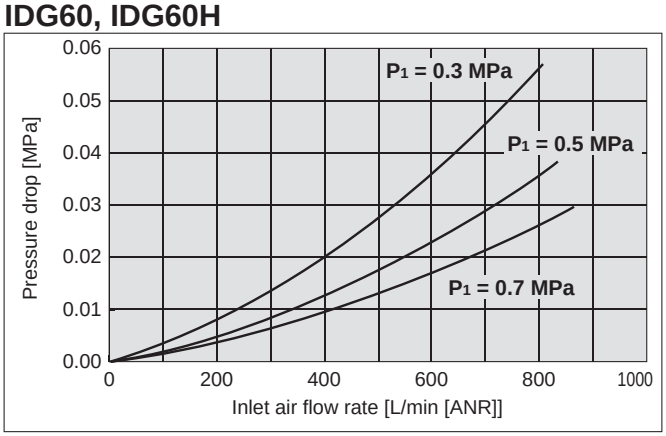

### IDG30A, IDG30HA




### IDG50A, IDG50HA




### IDG60, IDG60H

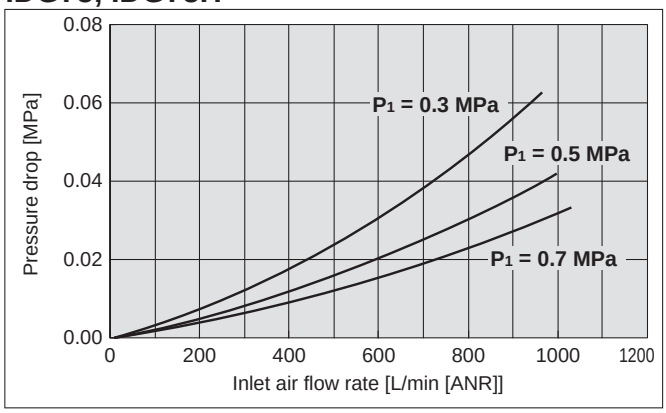


## Single Unit Type/Flow-rate Characteristics

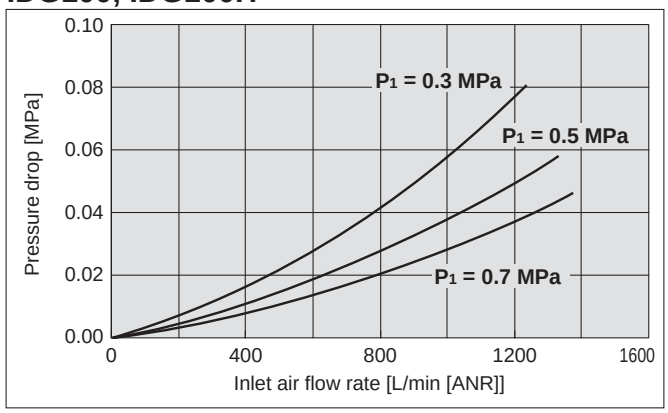
Conditions: Inlet air temperature 25°C, $P_1$: Inlet air pressure

**Standard dew point···−20°C [Symbol: —], −15°C [Symbol: H]**

### IDG75, IDG75H

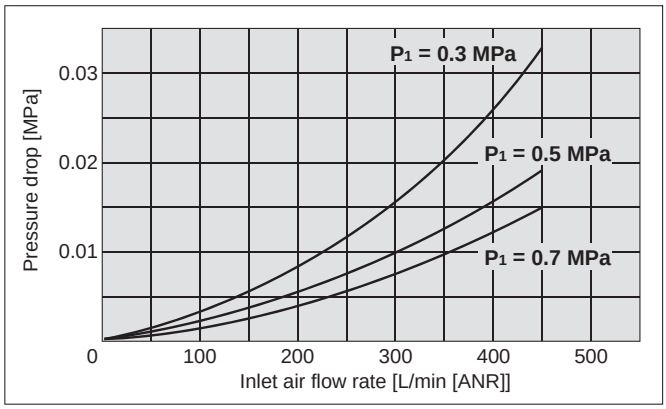



### IDG100, IDG100H

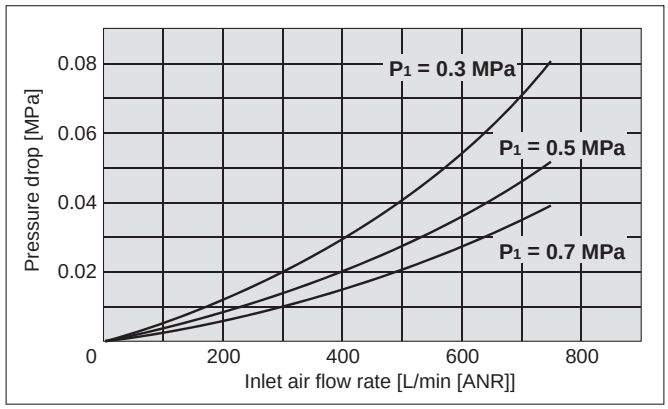



**Standard dew point···−40°C [Symbol: L], −60°C [Symbol: S]**

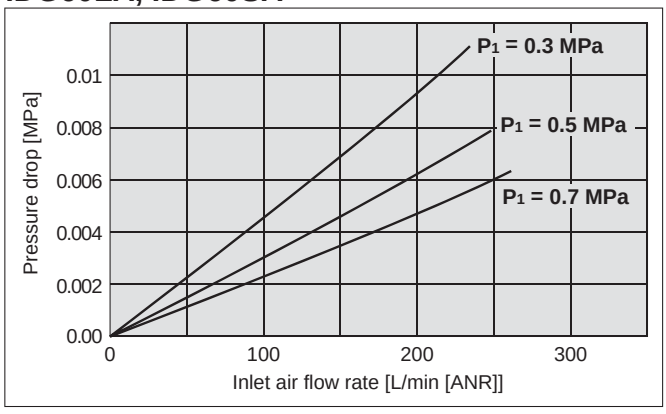
### IDG30LA



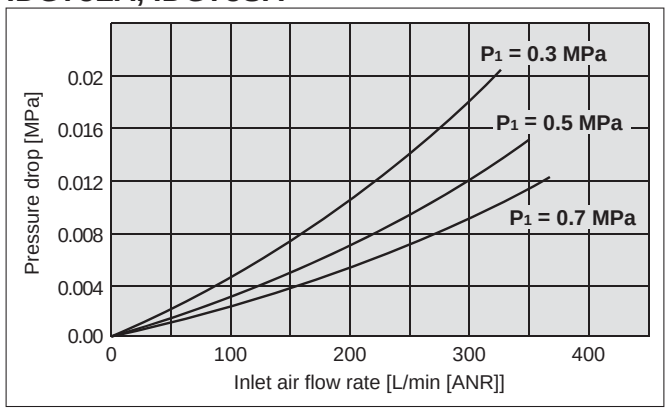

### IDG50LA



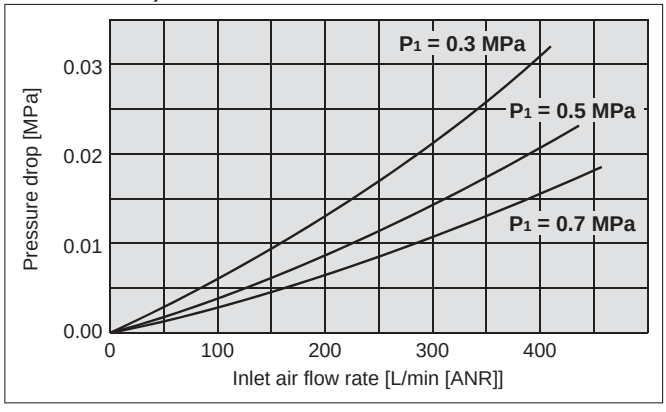

### IDG60LA, IDG60SA




### IDG75LA, IDG75SA




### IDG100LA, IDG100SA




### With fitting for purge air discharge (Semi-standard: P)

As the tube length for purge air discharge becomes longer, the outlet air atmospheric pressure dew point becomes higher. Refer to the table below.

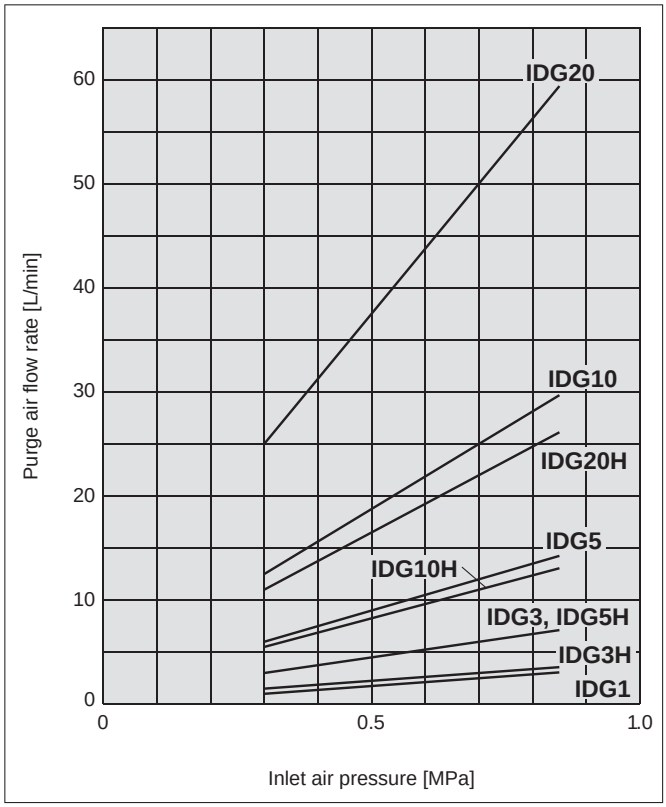
| Tube length | IDG30A | IDG30LA |
|---|---|---|
| 0 m | −20 | −40 |
| 1 m | −19 | −39 |
| 3 m | −17 | −38 |
| 5 m | −16 | |

**■Conditions**

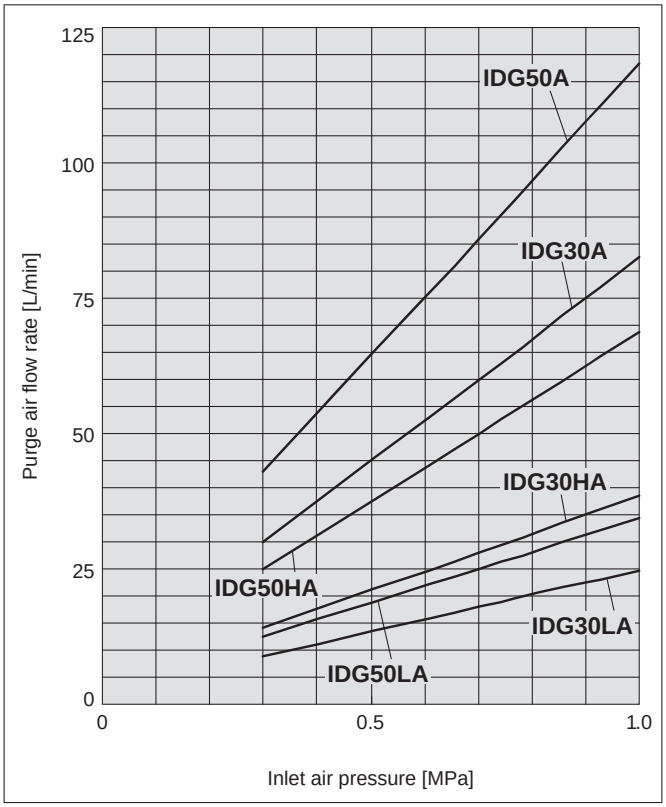
Inlet air temperature : 25°C (Saturated)
Ambient temperature : 25°C
Inlet air pressure : 0.7 MPa
Outlet air flow rate : Flow gained under conditions of the standard performance. (Refer to pages 3 and 4.)
Tube size : O.D. ø12 x I.D. ø9

## Purge Air Flow-rate Characteristics

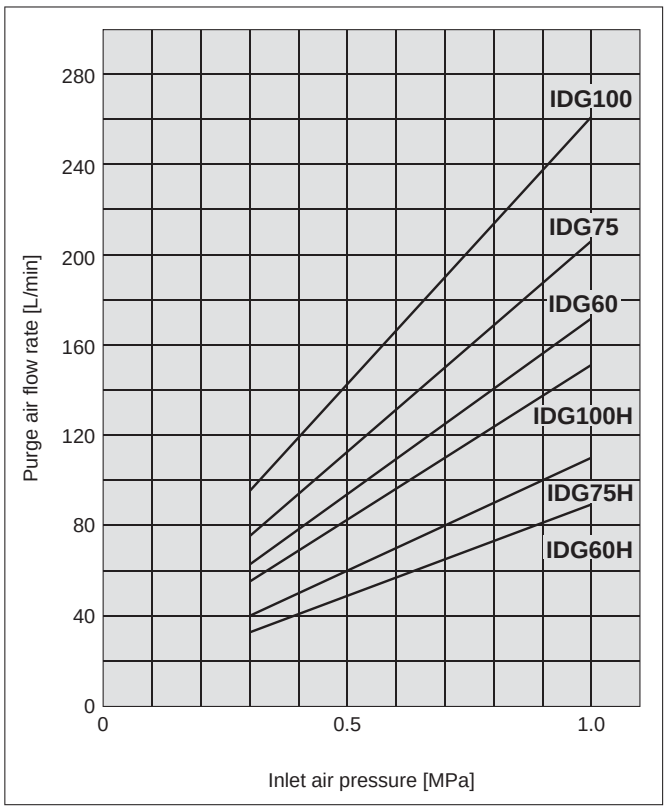
**IDG1, 3, 5, 10, 20** (Standard dew point −20°C)
**IDG3H, 5H, 10H, 20H** (Standard dew point −15°C)



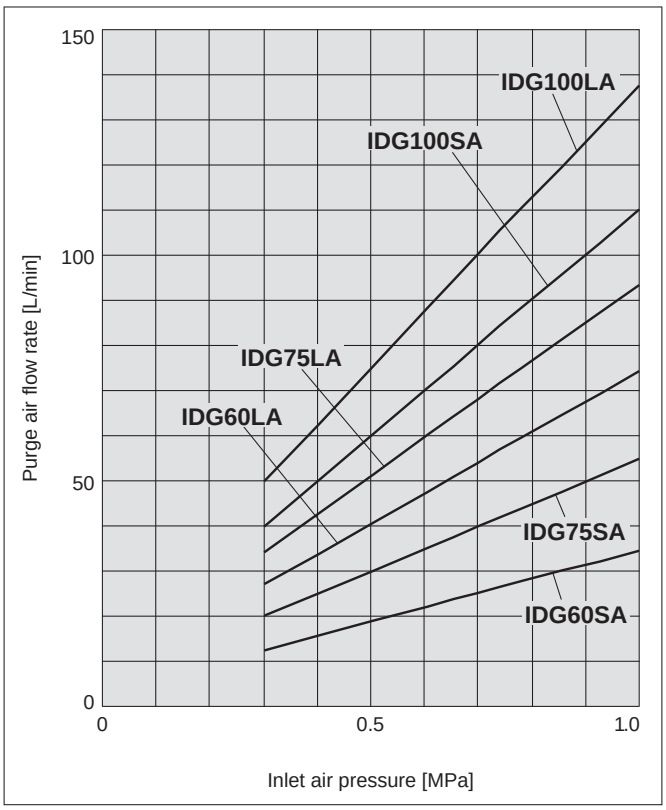

**IDG30A, 50A** (Standard dew point −20°C)
**IDG30HA, 50HA** (Standard dew point −15°C)
**IDG30LA, 50LA** (Standard dew point −40°C)




**IDG60, 75, 100** (Standard dew point −20°C)
**IDG60H, 75H, 100H** (Standard dew point −15°C)

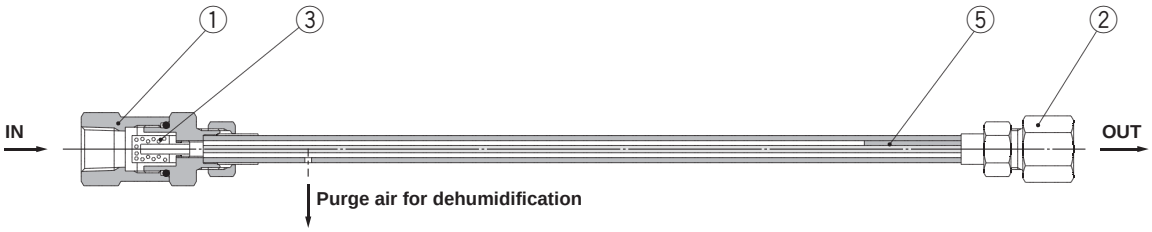



**IDG60LA, 75LA, 100LA** (Standard dew point −40°C)
**IDG60SA, 75SA, 100SA** (Standard dew point −60°C)

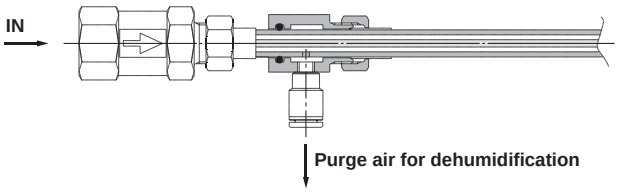


## Construction

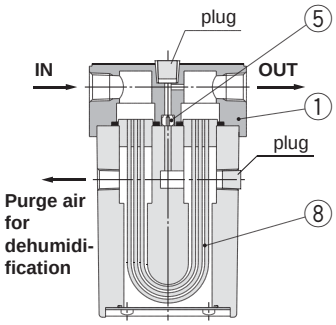
### IDG1




**Semi-standard**
**With fitting for purge air discharge (Semi-standard: P)**

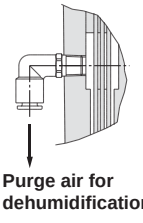



### IDG3, 5
### IDG3H, 5H

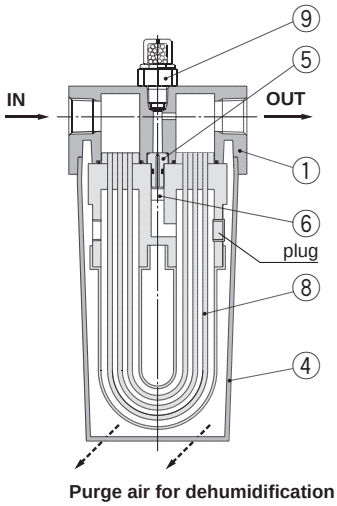



**Semi-standard**

**With fitting for purge air discharge (Semi-standard: P)**

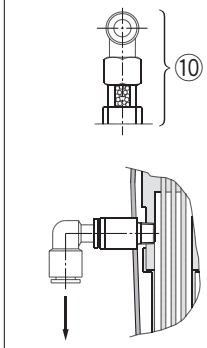



### IDG10, 20
### IDG10H, 20H




**Semi-standard**

**With fitting for purge air discharge (Semi-standard: P)**




### Component Parts

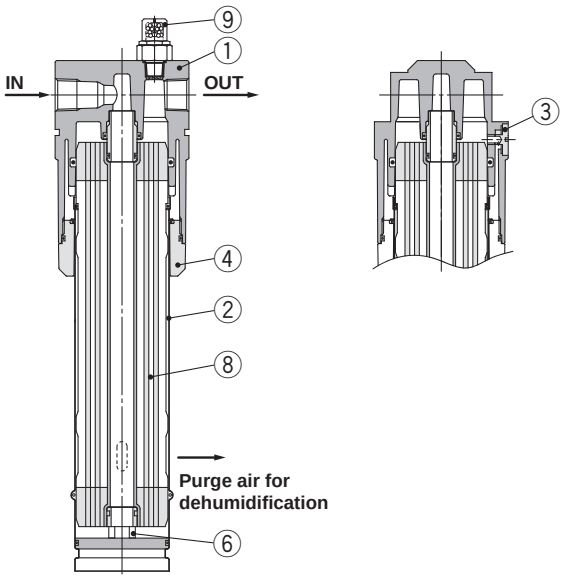
| No. | Description | Material | | | | | Note |
|---|---|---|---|---|---|---|---|
| | | IDG1 | IDG3, 3H | IDG5, 5H | IDG10, 10H | IDG20, 20H | |
| 1 | **Body** | Brass | Aluminium alloy | | | | Platinum silver coated (IDG1 is electroless nickel plated.) |
| 2 | **Female connector** | Brass | — | | | | Electroless nickel plated |
| 3 | **Strainer** | Brass | — | | | | |
| 4 | **Case** | — | — | | Resin | | |
| 5 | **Orifice** | Resin | Stainless steel | | | | |
| 6 | **Silencer** | — | — | | Bronze | | |

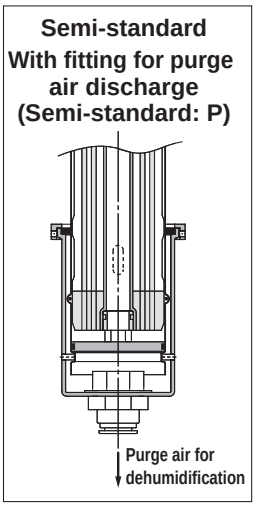
### Replacement Parts

| No. | Description | Part no. | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | IDG1 | IDG3 | IDG3H | IDG5 | IDG5H | IDG10 | IDG10H | IDG20 | IDG20H |
| 8 | **Membrane module kit** | — | IDG-EL3 | IDG-EL3H | IDG-EL5 | IDG-EL5H | IDG-EL10 | IDG-EL10H | IDG-EL20 | IDG-EL20H |
| | | | With Orifice (1 pc.), O-ring (3 pcs.), Gasket (1 pc.) | | | | With Orifice (1 pc.), Silencer (1 pc.), O-ring (4 pcs.) | | | |
| 9 | **Dew point indicator kit** | — | IDG-DP01 (Semi-standard: S) | | | | IDG-DP01 | | | |
| | | | With O-ring (1 pc.) | | | | | | | |
| 10 | | — | IDG-DP01-X001 (Semi-standard: PS) | | | | IDG-DP01-X001 (Semi-standard: P) | | | |
| | | | With O-ring (1 pc.) | | | | | | | |

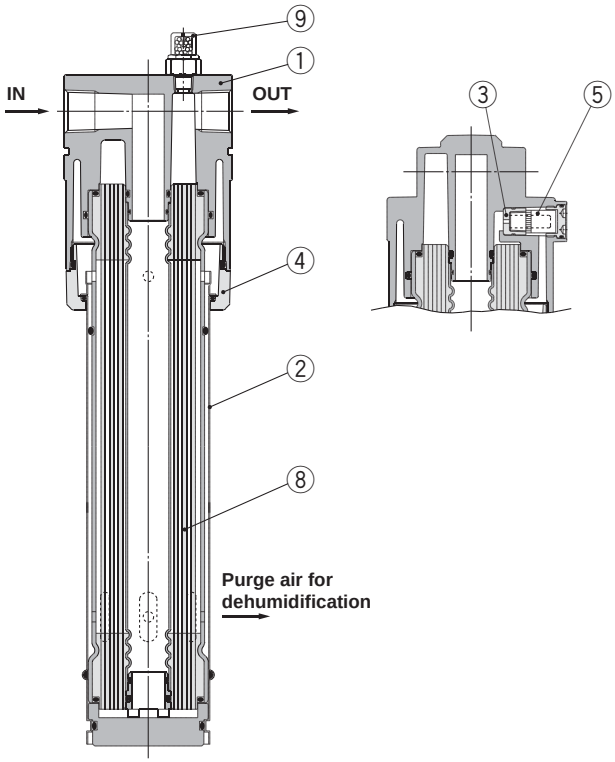
## Construction

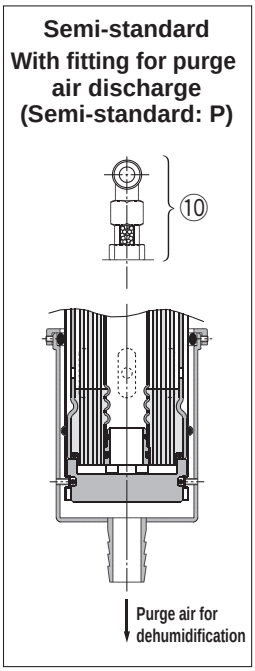
### IDG30□A
### IDG50□A




### IDG60□, 75□, 100□
### IDG60□A, 75□A, 100□A




### Component Parts

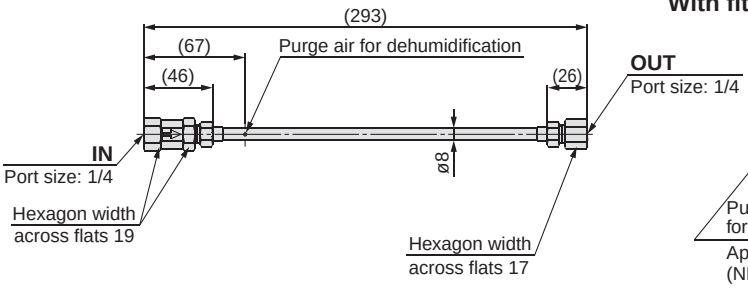
| No. | Description | Material | | | | | | | | Note |
|---|---|---|---|---|---|---|---|---|---|---|
| | | IDG30□A | IDG50□A | IDG60, 60H* | IDG60LA, 60SA | IDG75, 75H* | IDG75LA, 75SA | IDG100, 100H* | IDG100LA, 100SA | |
| 1 | Body | Aluminium alloy/White | | | | | | | | *Platinum silver coated |
| 2 | Case | Stainless steel | | | | | | | | |
| 3 | Orifice | Stainless steel | | | | | | | | |
| 4 | Holder | Aluminium alloy | | Aluminium alloy | | | | | | |
| 5 | Silencer | — | | Resin + Bronze | Resin | Resin + Bronze | Resin | Resin + Bronze | Resin | |
| 6 | Adapter | Resin | | — | | | | | | |

### Replacement Parts

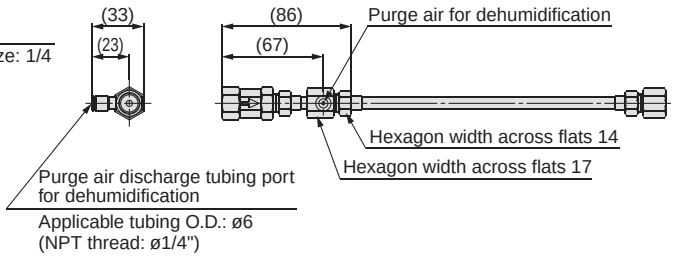
| No. | Description | Part no. | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | IDG30□A | IDG50□A | IDG60, 60H | IDG60LA, 60SA | IDG75, 75H | IDG75LA, 75SA | IDG100, 100H | IDG100LA, 100SA |
| 8 | Membrane module kit | IDG-EL30A | IDG-EL50A | IDG-EL60 | IDG-EL60LA | IDG-EL75 | IDG-EL75LA | IDG-EL100 | IDG-EL100LA |
| | | With Nozzle (1 pc.), Adapter (1 pc.), O-ring (1 pc.) | | With O-ring (1 pc.) | | | | | |
| 9 | Dew point indicator kit | IDG-DP01 | | | | | | | |
| 10 | | IDG-DP01-X001 (Semi-standard: P) | | | | | | | |

## Dimensions/Single Unit Type

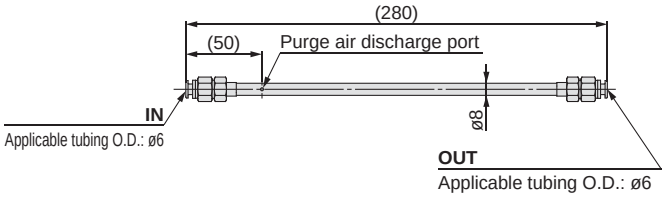
### IDG1



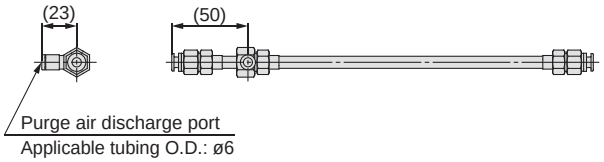

**With fitting for purge air discharge (Semi-standard: P)**



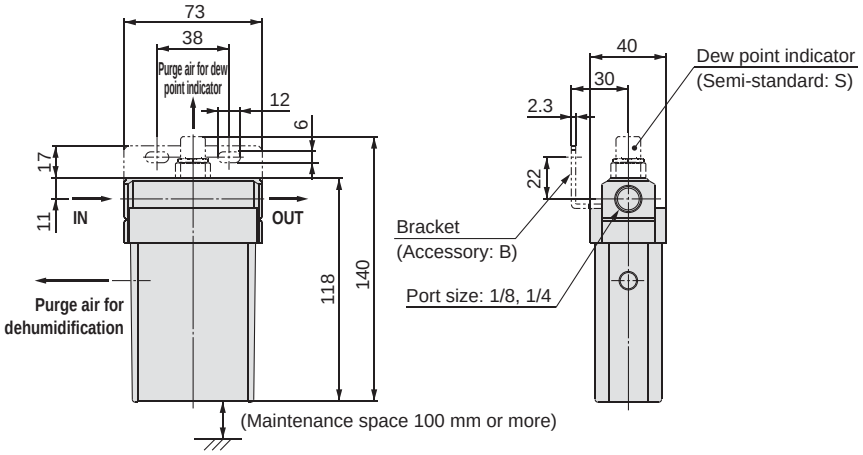

### IDG1-C06: With One-touch fitting



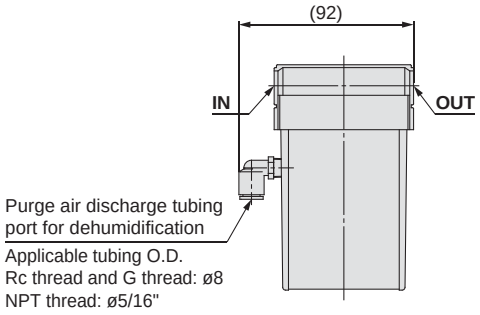

**With fitting for purge air discharge (Semi-standard: P)**



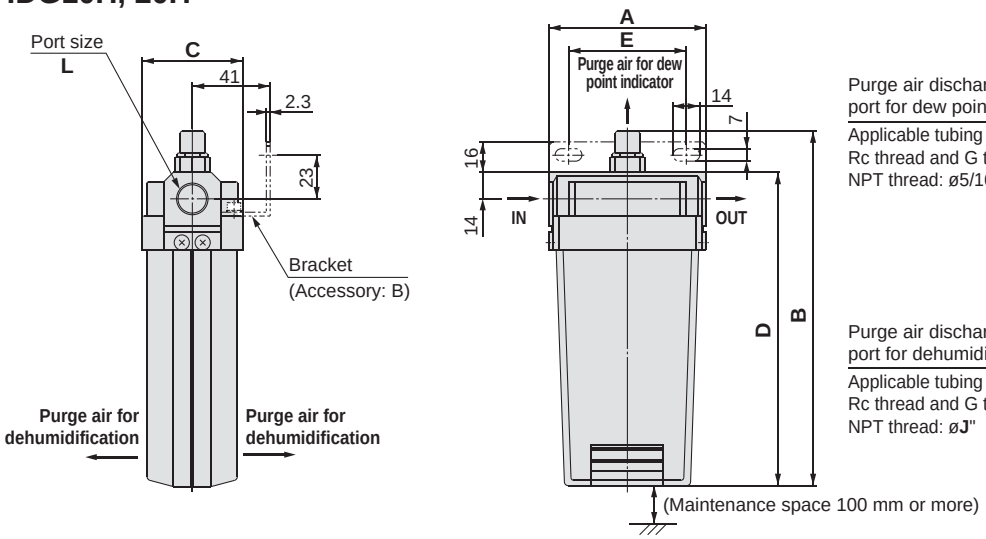

### IDG3, 5
### IDG3H, 5H



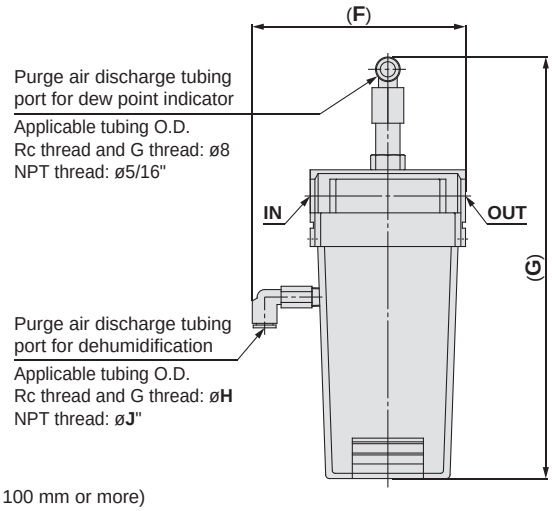

**With fitting for purge air discharge (Semi-standard: P)**




### IDG10, 20
### IDG10H, 20H




**With fitting for purge air discharge (Semi-standard: P)**

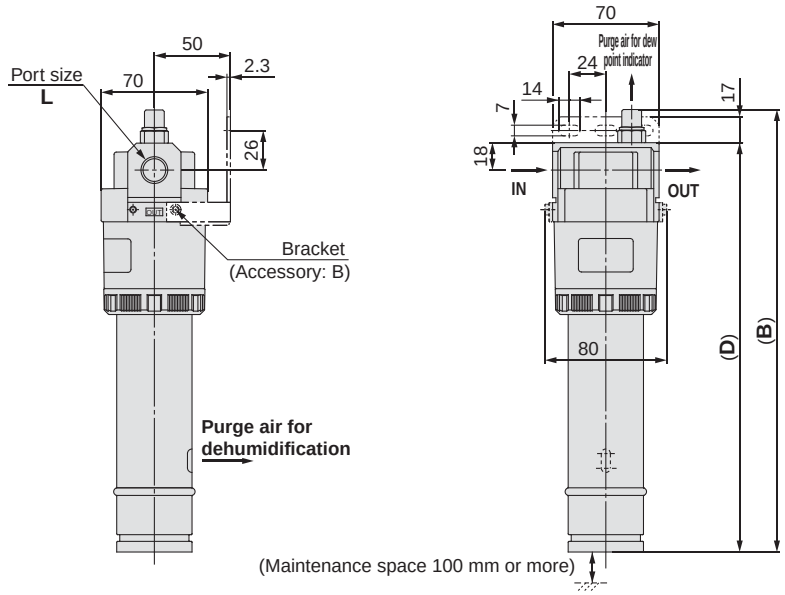



| Model | Port size L | A | B | C | D | E | Semi-standard: P | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | F | G | H | J |
| **IDG10, 10H** | 1/4, 3/8 | 83 | 187 | 53 | 165 | 62 | 109 | 225 | 8 | 5/16 |
| **IDG20, 20H** | | 113 | 212 | 54 | 190 | 82 | 140 [139] | 250 | 10 | 3/8 |

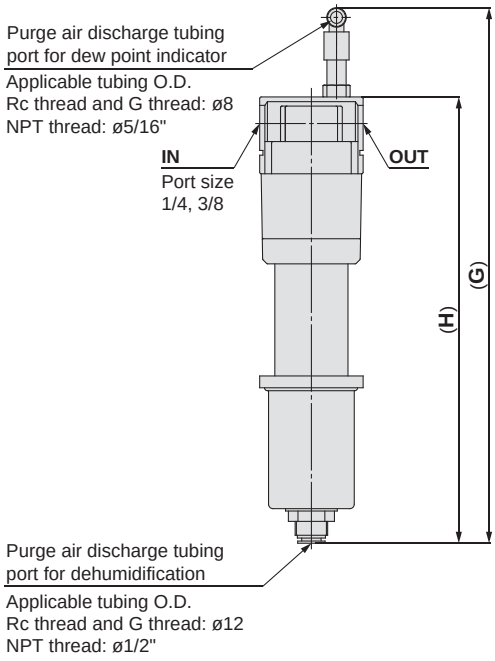
Values inside [ ] are for NPT thread.

## Dimensions/Single Unit Type

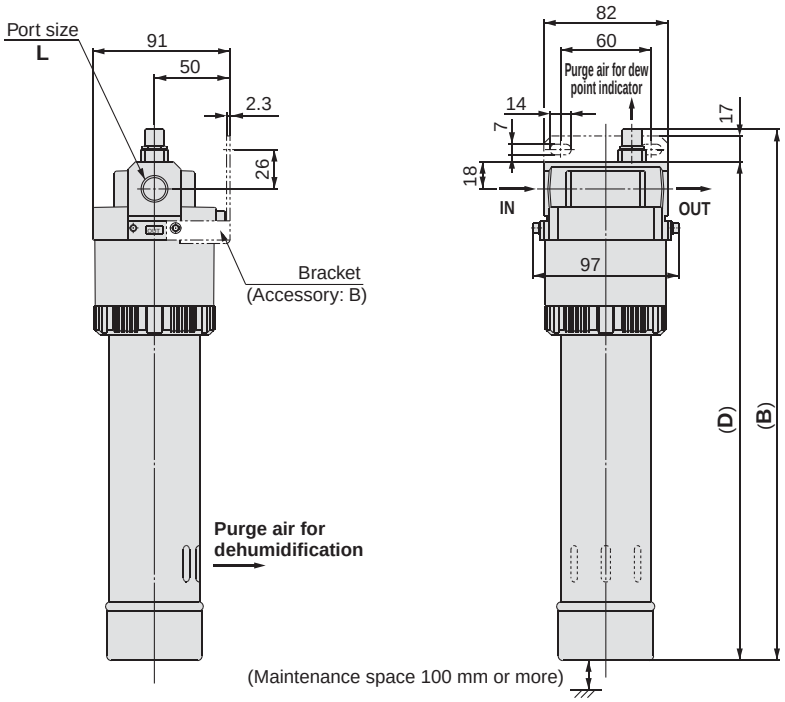
### IDG30□A
### IDG50□A



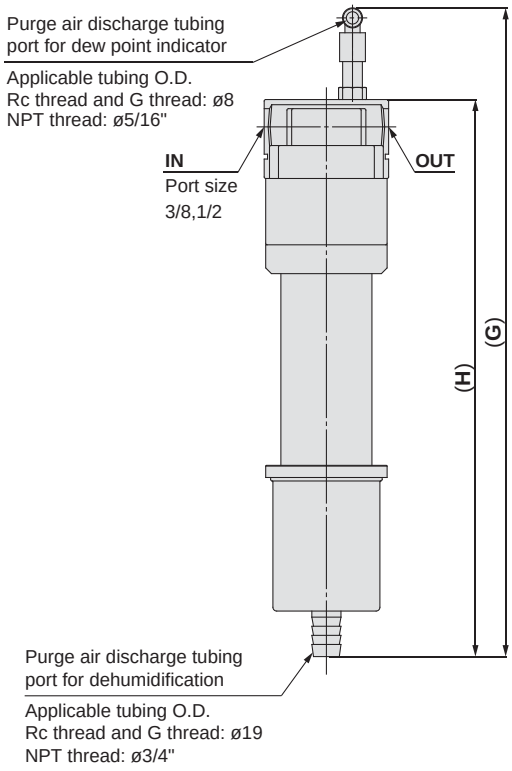

**With fitting for purge air discharge (Semi-standard: P)**




### IDG60□, 75□, 100□
### IDG60□A, 75□A, 100□A




**With fitting for purge air discharge (Semi-standard: P)**




| Model | Port size L | B | D | Semi-standard: P | |
|---|---|---|---|---|---|
| | | | | G | H |
| **IDG30□A** | 1/4, 3/8 | 291 | 269 | 362 | 302 |
| **IDG50□A** | | 330 | 308 | 401 | 341 |
| **IDG60□** | 3/8, 1/2 | 352 | 330 | 429 | 369 |
| **IDG75□, 100□** | 1/2 | | | | |
| **IDG60□A** | 3/8, 1/2 | 348 | 326 | 427 | 367 |
| **IDG75□A** | | 418 | 396 | 496 | 436 |
| **IDG100□A** | | 483 | 461 | 561 | 501 |

# Membrane Air Dryer
# Unit Type
# Series IDG□A

RoHS

## Type M, Type V

### How to Order

IDG 30 H A M 4 – □ 03 □ – □ – □

**Size**

| |
|---|
| 30 |
| 50 |
| 60 |
| 75 |
| 100 |

**Standard dew point temperature/Outlet air flow rate**

| Symbol | Standard dew point [°C] | Flow rate by size, Outlet air flow rate [L/min [ANR]] | | | | |
|---|---|---|---|---|---|---|
| | | 30 | 50 | 60 | 75 | 100 |
| — | −20 | 300 | 500 | Select from Series IDG | | |
| H | −15 | 300 | 500 | | | |
| L | −40 | 75 | 110 | 170 | 240 | 300 |
| S | −60 | — | — | 50 | 100 | 150 |

**Components**

| Symbol | Mist separator | Micro mist separator | Membrane air dryer | Regulator |
|---|---|---|---|---|
| M | ● | ● | ● | — |
| V | ● | ● | ● | ● |

**Equipment connection**

| Symbol | Components | Contents |
|---|---|---|
| 4 | M | Modular conection |
| | V | |

**Thread type**

| Symbol | Type |
|---|---|
| — | Rc |
| N | NPT |
| F | G |

**Port size**

| Symbol | Port size | Size | | | | |
|---|---|---|---|---|---|---|
| | | 30 | 50 | 60 | 75 | 100 |
| 02 | 1/4 | ● | ● | — | — | — |
| 03 | 3/8 | ● | ● | ● | ● | ● |
| 04 | 1/2 | — | — | ● | ● | ● |

**Drain discharge method***

| Symbol | Drain discharge method | Note |
|---|---|---|
| — | Manual valve | Combination with semi-standard symbol: P is not available. |
| C | N.C. auto-drain | Auto-drains listed on page 17 are attached. |
| D | N.O. auto-drain | |
| J | Drain guide | — |

* For model selection of an auto-drain, refer to the Selection Precautions on page 45.

**Semi-standard***

| Symbol | Specifications | Note |
|---|---|---|
| — | None (Standard) | — |
| P | With fitting for purge air discharge | • Combination with drain discharge method symbol: — is not available.<br>• Combination with Type V is not available.Note) |
| R | Flow direction (Right → Left) | — |

* In the case of more than one symbol, indicate them alphabetically.

Note) Type V is not applicable because it is equipped with a relief type regulator.

**Made to Order**

Refer to pages 33 to 44 for details.

RoHS

# Membrane Air Dryer
# Unit Type
# Series IDG



## How to Order

IDG **10** **H** **M** **4** – □ **02** □ – □ – □□

**Size**

| |
|---|
| 3 |
| 5 |
| 10 |
| 20 |
| 60 |
| 75 |
| 100 |

**Made to Order**
Refer to pages 33 to 44 for details.

**Semi-standard***

| Symbol | Specifications | Size | | | | | | | Note |
|---|---|---|---|---|---|---|---|---|---|
| | | 3 | 5 | 10 | 20 | 60 | 75 | 100 | |
| — | Standard | ● | ● | ● | ● | ● | ● | ● | — |
| P | With fitting for purge air discharge Note 2) | ● | ● | ● | ● | ● | ● | ● | • Combination with drain discharge method symbol: — is not available.<br>• Combination with Type V is not available. Note 1) |
| R | Flow direction (Right → Left) | ● | ● | ● | ● | ● | ● | ● | — |
| S | With dew point indicator Note 3) | ● | ● | Standard equipment | | | | | — |

* In the case of more than one symbol, indicate them alphabetically.
Note 1) Type V is not applicable because it is equipped with a relief type regulator. (Symbol: P is used when it is undesirable for the air to be discharged into the main body of the IDG. Therefore, it is not possible to use it in combination with a separator with manual valve, which discharges air around it, or Type V with a relief type regulator.)
Note 2) They are not applicable in case the thread symbol is N or F when the size is 3, 5, 10, 20. (Because barrel nipples are used for equipment connections.)
Note 3) Select the option when the size is 3 or 5. The option is the standard equipment for other sizes.

**Standard dew point temperature/Outlet air flow rate**

| Symbol | Standard dew point [°C] | Flow rate by size, Outlet air flow rate [L/min [ANR]] | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 3 | 5 | 10 | 20 | 60 | 75 | 100 |
| — | −20 | 25 | 50 | 100 | 200 | 600 | 750 | 1000 |
| H | −15 | 25 | 50 | 100 | 200 | 600 | 750 | 1000 |

**Components**

| Symbol | Size | Mist separator | Micro mist separator | Micro mist separator with pre-filter | Membrane air dryer | Regulator |
|---|---|---|---|---|---|---|
| M | 3 | ● | ● | — | ● | — |
| | 5 | ● | ● | — | ● | — |
| | 10 | ● | ● | — | ● | — |
| | 20 | ● | ● | — | ● | — |
| | 60 | — | — | ● | ● | — |
| | 75 | — | — | ● | ● | — |
| | 100 | — | — | ● | ● | — |
| V | 3 | ● | ● | — | ● | ● |
| | 5 | ● | ● | — | ● | ● |
| | 10 | ● | ● | — | ● | ● |
| | 20 | ● | ● | — | ● | ● |
| | 60 | — | — | ● | ● | ● |
| | 75 | — | — | ● | ● | ● |
| | 100 | — | — | ● | ● | ● |

**Drain discharge method***
**(Mist separator, Micro mist separator, Micro mist separator with pre-filter)**

| Symbol | Drain discharge method | Size | | | | | | | Note |
|---|---|---|---|---|---|---|---|---|---|
| | | 3 | 5 | 10 | 20 | 60 | 75 | 100 | |
| — | Manual valve | ● | ● | ● | ● | ● | ● | ● | Combination with semi-standard symbol: P is not available. |
| C | N.C. auto-drain | ● | ● | ● | ● | — | — | — | Auto-drains listed on page 17 are attached. |
| D | N.O. auto-drain | — | — | ● | ● | ● | ● | ● | |
| J | Drain guide | ● | ● | ● | ● | ● | ● | ● | — |

* For model selection of an auto-drain, refer to the Selection Precautions on page 45.

**Equipment connection**

| Symbol | Compo-nents | Contents | Size | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | 3 | 5 | 10 | 20 | 60 | 75 | 100 |
| 4 | M | Modular connection | ● | ● | ● | ● | — | — | — |
| | V | | ● | ● | ● | ● | ● | ● | ● |
| 2 | M | Nipple connection | — | — | — | — | ● | ● | ● |

* Some parts of the connected contents are exceptions. Check the equipment composition (described later) or the external dimension drawing for details of the connection method and the contents of the equipmentent.

**Thread type**

| Symbol | Type |
|---|---|
| — | Rc |
| N | NPT |
| F | G |

**Port size**

| Symbol | Port size | Size | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 3 | 5 | 10 | 20 | 60 | 75 | 100 |
| 01 | 1/8 | ● | ● | — | — | — | — | — |
| 02 | 1/4 | ● | ● | ● | ● | — | — | — |
| 03 | 3/8 | — | — | ● | ● | ● | — | — |
| 04 | 1/2 | — | — | — | — | ● | ● | ● |

## Auto-drain, Bowl Assembly, Pressure Gauge/Part No.

| Description | | IDG3M4 / IDG3V4 | IDG3HM4 / IDG3HV4 | IDG5M4 / IDG5V4 | IDG5HM4 / IDG5HV4 | IDG10M4 / IDG10V4 | IDG10HM4 / IDG10HV4 | IDG20M4 / IDG20V4 | IDG20HM4 / IDG20HV4 | IDG30AM4 / IDG30AV4 | IDG30HAM4 / IDG30HAV4 | IDG50AM4 / IDG50AV4 | IDG50HAM4 / IDG50HAV4 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Float type auto-drain | N.C. | AD27-C-A | | | | AD37-A | | | | AD47-A | | | |
| | N.O. | — | | — | | AD38-A | | | | AD48-A | | | |
| Pressure gauge (Type V only) | | GC3-10AS | | | | | | | | | | | |

| Description | IDG60M2 / IDG60V4 | IDG60HM2 / IDG60HV4 | IDG75M2 / IDG75V4 | IDG75HM2 / IDG75HV4 | IDG100M2 / IDG100V4 | IDG100HM2 / IDG100HV4 |
|---|---|---|---|---|---|---|
| Bowl assembly (N.O.) | AMH-CA350C-D | | AMH-CA450C-D | | | |
| Pressure gauge (Type V only) | GC3-10AS | | | | | |

| Description | | IDG30LAM4 / IDG30LAV4 | IDG50LAM4 / IDG50LAV4 | IDG60LAM4 / IDG60LAV4 | IDG60SAM4 / IDG60SAV4 | IDG75LAM4 / IDG75LAV4 | IDG75SAM4 / IDG75SAV4 | IDG100LAM4 / IDG100LAV4 | IDG100SAM4 / IDG100SAV4 |
|---|---|---|---|---|---|---|---|---|---|
| Float type auto-drain | N.C. | AD47-A | | | | | | | |
| | N.O. | AD48-A | | | | | | | |
| Pressure gauge (Type V only) | | GC3-10AS | | | | | | | |

### Replacement Parts (Element for mist separator, micro mist separator, micro mist separator with pre-filter)

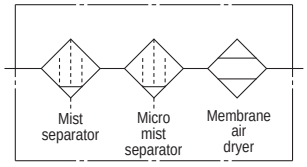
| Description | AFM20-A | AFD20-A | AFM30-A | AFD30-A | AFM40-A | AFD40-A | AMH350C | AMH450C |
|---|---|---|---|---|---|---|---|---|
| Element assembly | AFM20P-060AS | AFD20P-060AS | AFM30P-060AS | AFD30P-060AS | AFM40P-060AS | AFD40P-060AS | AMH-EL350 | AMH-EL450 |

Type M

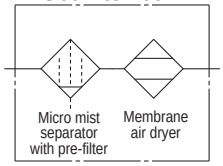
Type V

**Symbol**

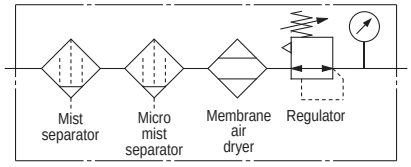
**(Type M)**



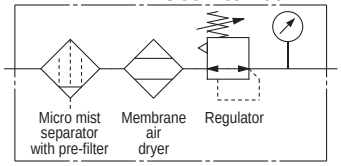

**IDG60 to 100M2**
**IDG60H to 100HM2**



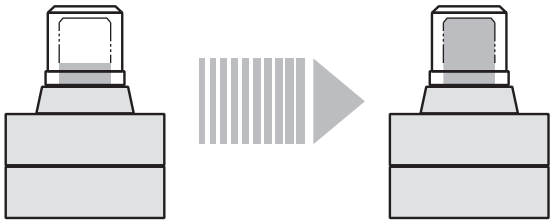

**(Type V)**




**IDG60 to 100V4**
**IDG60H to 100HV4**



## Clogging Indication



When the differential air is 0.05 MPa or less
(The tip of the indicator is just visible.)

When the differential air is 0.1 MPa or more
(The indicator is completely up to the top.)

Replace the element when the element service indicator's red indication reaches completely to the top.
The top of the indication window shows differential pressure of approximately 0.1 MPa. Replace the element after two years of use, even if the element service indicator's red indication does not reach the top.

**The element service indicator is shipped mounted to the micro mist separator with pre-filter, and cannot be retrofitted or used individually.**

## Standard Specifications/Unit [Type M, Type V] (Standard dew point: −20°C, −15°C)

| Model | | | Standard dew point: −20°C | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | IDG3M4 | IDG5M4 | IDG10M4 | IDG20M4 | IDG30AM4 | IDG50AM4 | IDG60M2 | IDG75M2 | IDG100M2 |
| | | | IDG3V4 | IDG5V4 | IDG10V4 | IDG20V4 | IDG30AV4 | IDG50AV4 | IDG60V4 | IDG75V4 | IDG100V4 |
| Components | Mist separator | | AFM20-A | | AFM30-A | | AFM40-A | | — | | |
| | Micro mist separator | | AFD20-A | | AFD30-A | | AFD40-A | | — | | |
| | Micro mist separator with pre-filter | | — | | | | | | AMH350C | AMH450C | |
| | Regulator (Type V only) Note 1) | | AR20-B Note 2) | | AR25-B Note 2) | | AR40-B Note 2) | | | | |
| | Spacer | | Y200T-A<br>Y200-A (Type V only) | | Y300T-A<br>Y300-A (Type V only) | | Y400T-A<br>Y400-A (Type V only) | | Y400-A (Type V only) | | |
| Range of operating conditions | Fluid Note 3) | | Compressed air | | | | | | | | |
| | Inlet air pressure (MPa) | | 0.3 to 0.85 | | | | 0.3 to 1.0 | | | | |
| | Inlet air temperature (°C) | | −5 to 55 (No freezing) | | | | −5 to 50 (No freezing) | | 5 to 50 | | |
| | Ambient temperature (°C) | | −5 to 55 (No freezing) | | | | −5 to 50 (No freezing) | | 5 to 50 | | |
| Standard performance | Outlet air atmospheric pressure dew point [°C] | | −20 | | | | | | | | |
| Standard performance conditions | Inlet air flow rate [L/min [ANR]] Note 5) | | 31 | 62 | 125 | 250 | 360 | 586 | 720 | 888 | 1185 |
| | Outlet air flow rate [L/min [ANR]] | | 25 | 50 | 100 | 200 | 300 | 500 | 600 | 750 | 1000 |
| | Purge air flow rate [L/min [ANR]] Note 6) | | 6 | 12 | 25 | 50 | 60 | 86 | 120 | 138 | 185 |
| | Inlet air pressure [MPa] | | 0.7 | | | | | | | | |
| | Inlet air temperature [°C] | | 25 | | | | | | | | |
| | Inlet air saturation temperature [°C] | | 25 | | | | | | | | |
| | Ambient temperature [°C] | | 25 | | | | | | | | |
| Dew point indicator purge air flow rate | | | 1 L/min [ANR] (Inlet air pressure at 0.7 MPa) | | | | | | | | |
| Regulator construction (Type V only) | | | Relief type | | | | | | | | |
| Port size | | | 1/8, 1/4 | | 1/4, 3/8 | | | | 3/8, 1/2 | 1/2 | |
| Weight [kg] | | Type M | 0.6 | | 1.0 | 1.3 | 1.8 | 1.9 | 2.7 | 3.2 | 3.3 |
| | | Type V | 0.9 | | 1.3 | 1.5 | 2.4 | 2.5 | 3.1 | 3.7 | 3.8 |

| Model | | | Standard dew point: −15°C | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | IDG3HM4 | IDG5HM4 | IDG10HM4 | IDG20HM4 | IDG30HAM4 | IDG50HAM4 | IDG60HM2 | IDG75HM2 | IDG100HM2 |
| | | | IDG3HV4 | IDG5HV4 | IDG10HV4 | IDG20HV4 | IDG30HAV4 | IDG50HAV4 | IDG60HV4 | IDG75HV4 | IDG100HV4 |
| Components | Mist separator | | AFM20-A | | AFM30-A | | AFM40-A | | — | | |
| | Micro mist separator | | AFD20-A | | AFD30-A | | AFD40-A | | — | | |
| | Micro mist separator with pre-filter | | — | | | | | | AMH350C | AMH450C | |
| | Regulator (Type V only) Note 1) | | AR20-B Note 2) | | AR25-B Note 2) | | AR40-B Note 2) | | | | |
| | Spacer | | Y200T-A<br>Y200-A (Type V only) | | Y300T-A<br>Y300-A (Type V only) | | Y400T-A<br>Y400-A (Type V only) | | Y400-A (Type V only) | | |
| Range of operating conditions | Fluid | | Compressed air | | | | | | | | |
| | Inlet air pressure [MPa] | | 0.3 to 0.85 | | | | 0.3 to 1.0 | | | | |
| | Inlet air temperature [°C] | | −5 to 55 Note 3) | | | | −5 to 50 Note 3) | | 5 to 50 | | |
| | Ambient temperature [°C] | | −5 to 55 Note 3) | | | | −5 to 50 Note 3) | | 5 to 50 | | |
| Standard performance | Outlet air atmospheric pressure dew point [°C] | | −15 | | | | | | | | |
| Standard performance conditions | Inlet air flow rate [L/min [ANR]] Note 5) | | 28 | 56 | 111 | 222 | 329 | 550 | 665 | 818 | 1100 |
| | Outlet air flow rate [L/min [ANR]] | | 25 | 50 | 100 | 200 | 300 | 500 | 600 | 750 | 1000 |
| | Purge air flow rate [L/min [ANR]] Note 6) | | 3 | 6 | 11 | 22 | 29 | 50 | 65 | 68 | 100 |
| | Inlet air pressure [MPa] | | 0.7 | | | | | | | | |
| | Inlet air temperature [°C] | | 25 | | | | | | | | |
| | Inlet air saturation temperature [°C] | | 25 | | | | | | | | |
| | Ambient temperature [°C] | | 25 | | | | | | | | |
| Dew point indicator purge air flow rate | | | 1 L/min [ANR] (Inlet air pressure at 0.7 MPa) | | | | | | | | |
| Regulator construction (Type V only) | | | Relief type | | | | | | | | |
| Port size | | | 1/8, 1/4 | | 1/4, 3/8 | | | | 3/8, 1/2 | 1/2 | |
| Weight [kg] | | Type M | 0.6 | | 1.0 | 1.3 | 1.8 | 1.9 | 2.7 | 3.2 | 3.3 |
| | | Type V | 0.9 | | 1.3 | 1.5 | 2.4 | 2.5 | 3.1 | 3.7 | 3.8 |

## Standard Specifications/Unit [Type M, Type V] (Standard dew point: −40°C, −60°C)

| Model | | | Standard dew point: −40°C | | | | | Standard dew point: −60°C | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | IDG30LAM4 | IDG50LAM4 | IDG60LAM4 | IDG75LAM4 | IDG100LAM4 | IDG60SAM4 | IDG75SAM4 | IDG100SAM4 |
| | | | IDG30LAV4 | IDG50LAV4 | IDG60LAV4 | IDG75LAV4 | IDG100LAV4 | IDG60SAV4 | IDG75SAV4 | IDG100SAV4 |
| Components | Mist separator | | AFM40-A | | | | | AFM40-A | | |
| | Micro mist separator | | AFD40-A | | | | | AFD40-A | | |
| | Regulator (Type V only) Note 1) | | AR40-B Note 2) | | | | | AR40-B Note 2) | | |
| | Spacer | | Y400T-A<br>Y400-A (Type V only) | | | | | Y400T-A<br>Y400-A (Type V only) | | |
| Range of operating conditions | Fluid Note 3) | | Compressed air | | | | | Compressed air | | |
| | Inlet air pressure (MPa) | | 0.3 to 1.0 | | | | | 0.3 to 1.0 | | |
| | Inlet air temperature (°C) | | −5 to 50 (No freezing) | | | | | −5 to 50 (No freezing) | | |
| | Ambient temperature (°C) | | −5 to 50 (No freezing) | | | | | −5 to 50 (No freezing) | | |
| Standard performance | Outlet air atmospheric pressure dew point [°C] | | −40 Note 4) | | | | | −60 Note 4) | | |
| Standard performance conditions | Inlet air flow rate [L/min [ANR]] Note 5) | | 93 | 135 | 224 | 308 | 400 | 75 | 140 | 230 |
| | Outlet air flow rate [L/min [ANR]] | | 75 | 110 | 170 | 240 | 300 | 50 | 100 | 150 |
| | Purge air flow rate [L/min [ANR]] Note 6) | | 18 | 25 | 54 | 68 | 100 | 25 | 40 | 80 |
| | Inlet air pressure [MPa] | | 0.7 | | | | | 0.7 | | |
| | Inlet air temperature [°C] | | 25 | | | | | 25 | | |
| | Inlet air saturation temperature [°C] | | 25 | | | | | 25 | | |
| | Ambient temperature [°C] | | 25 | | | | | 25 | | |
| Dew point indicator purge air flow rate | | | 1 L/min [ANR] (Inlet air pressure at 0.7 MPa) | | | | | 1 L/min [ANR] (Inlet air pressure at 0.7 MPa) | | |
| Regulator construction (Type V only) | | | Relief type | | | | | Relief type | | |
| Port size | | | 1/4, 3/8 | | 3/8, 1/2 | | | 3/8, 1/2 | | |
| Weight [kg] | | Type M | 1.8 | 1.9 | 2.6 | 2.8 | 2.9 | 2.6 | 2.8 | 2.9 |
| | | Type V | 2.4 | 2.5 | 3.1 | 3.3 | 3.4 | 3.1 | 3.3 | 3.4 |

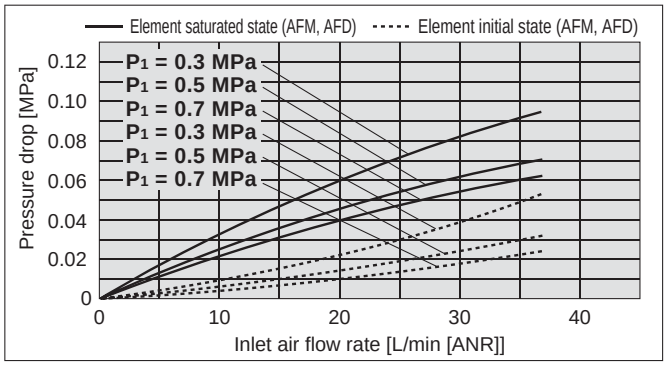
Note 1) For flow-rate characteristics and pressure characteristics of regulator, refer to the Best Pneumatics No. 5.
Note 2) It will come with Option E (With square-shaped, embedded type of a pressure regulator). Refer to our website www.smc.eu for details of regulators such as set pressure range etc.
Note 3) Prevent water droplets from entering the inlet port.
Note 4) Refer to the Piping Precautions (Piping material for low dew point air) on page 46.
Note 5) “ANR” indicates the flow rate converted to the value at 20°C, under the atmospheric pressure and the state of relative humidity 65%.
Note 6) Includes 1 L/min [ANR] of purge air flow (Inlet air pressure at 0.7 MPa) for the dew point indicator.
Note 7) When highly purified air is required, refer to the Design 3. on page 45.

## Unit Type/Flow-rate Characteristics

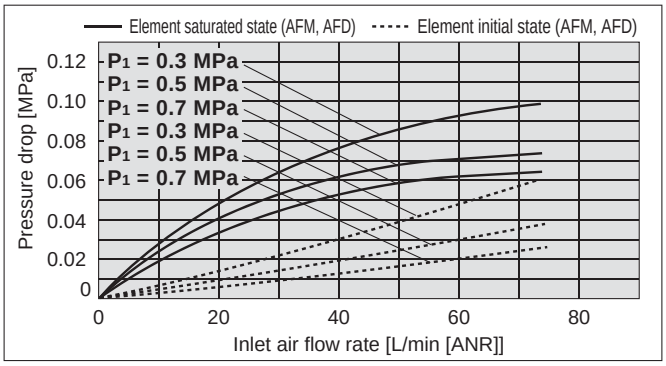
Conditions: Inlet air temperature 25°C, $P_1$: Inlet air pressure

**Standard dew point···−20°C [Symbol: —], −15°C [Symbol: H]**

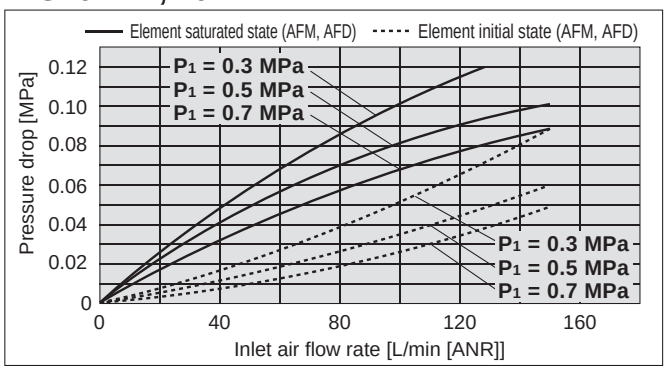
### IDG3M4, 3V4
### IDG3HM4, 3HV4



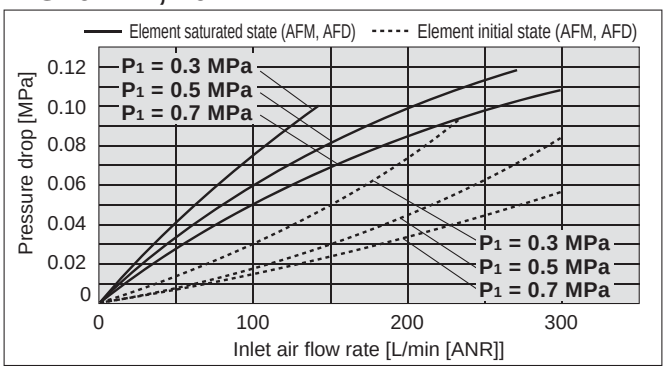

### IDG5M4, 5V4
### IDG5HM4, 5HV4



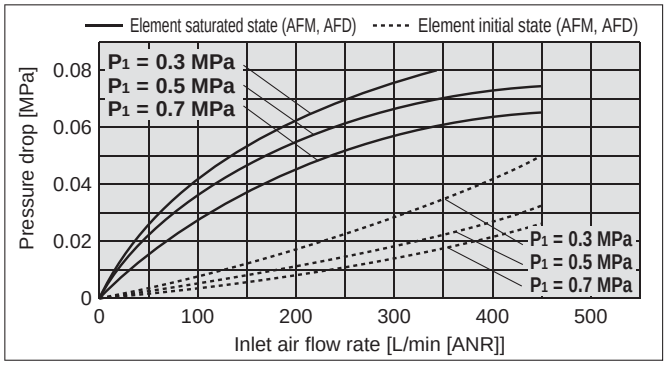

### IDG10M4, 10V4
### IDG10HM4, 10HV4



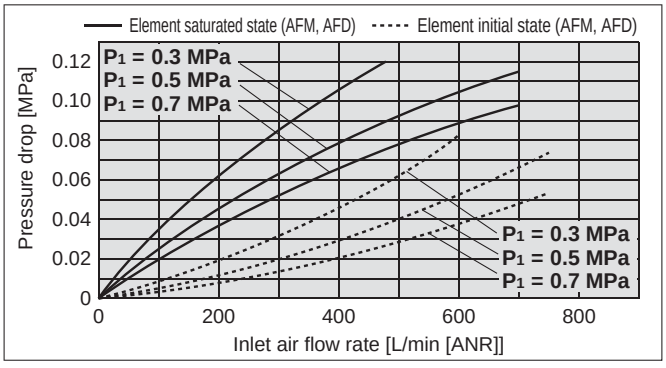

### IDG20M4, 20V4
### IDG20HM4, 20HV4



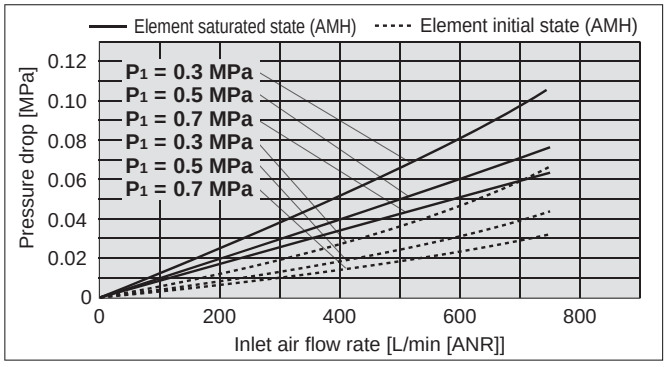

### IDG30AM4, IDG30HAV4



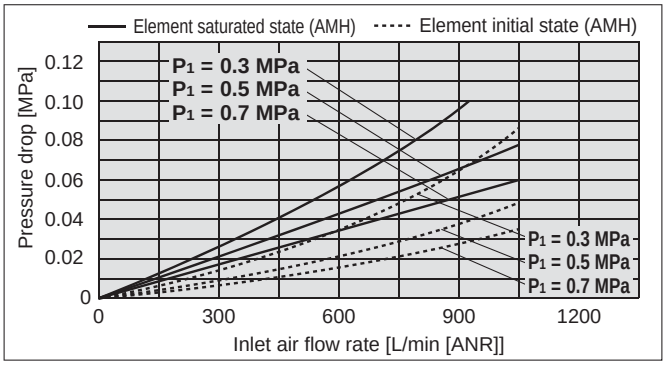

### IDG50AM4, IDG50HAV4




### IDG60M2, 60HM2
### IDG60V4, 60HV4



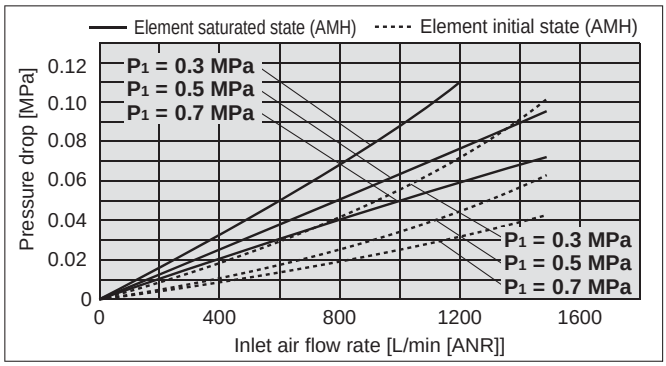

### IDG75M2, 75HM2
### IDG75V4, 75HV4



## Unit Type/Flow-rate Characteristics

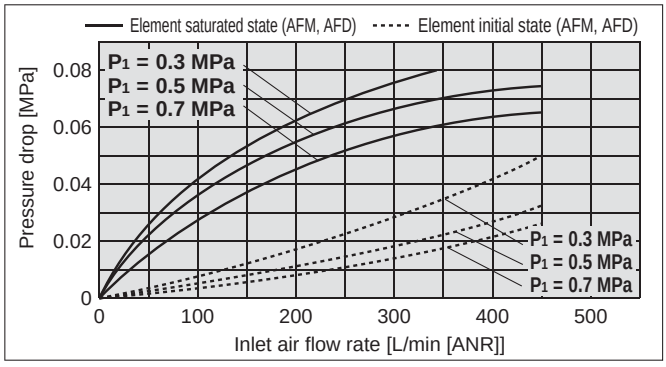
Conditions: Inlet air temperature 25°C, $P_1$: Inlet air pressure

### IDG100M2, 100HM2
### IDG100V4, 100HV4

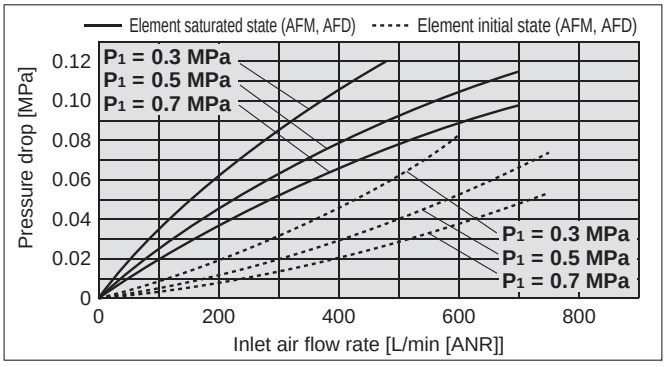



**Standard dew point···−40°C [Symbol: L], −60°C [Symbol: S]**

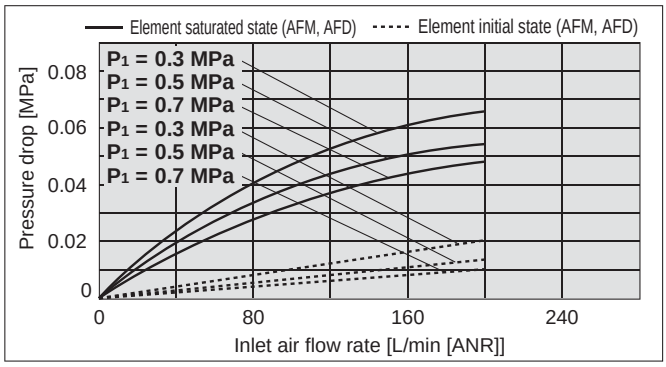
### IDG30LAM4, IDG30LAV4



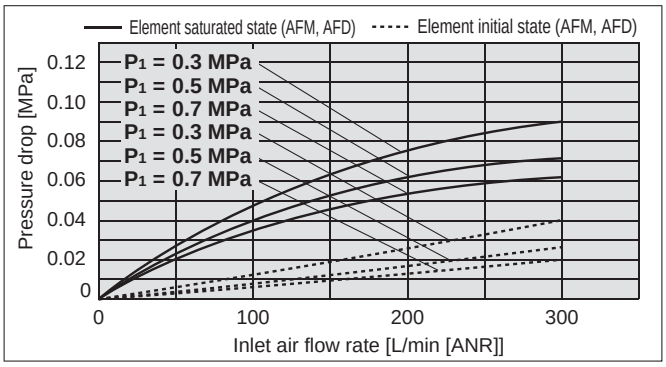

### IDG50LAM4, IDG50LAV4



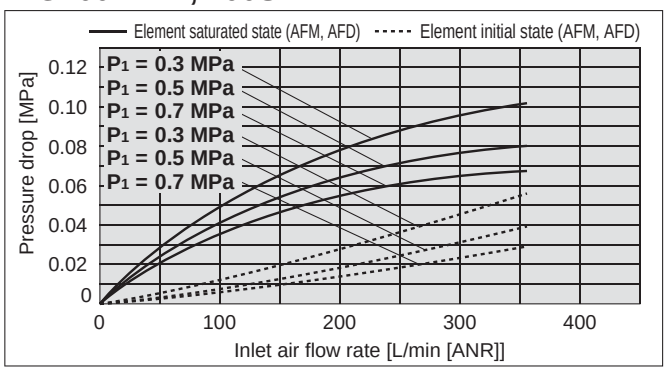

### IDG60LAM4, 60SAM4
### IDG60LAV4, 60SAV4




### IDG75LAM4, 75SAM4
### IDG75LAV4, 75SAV4

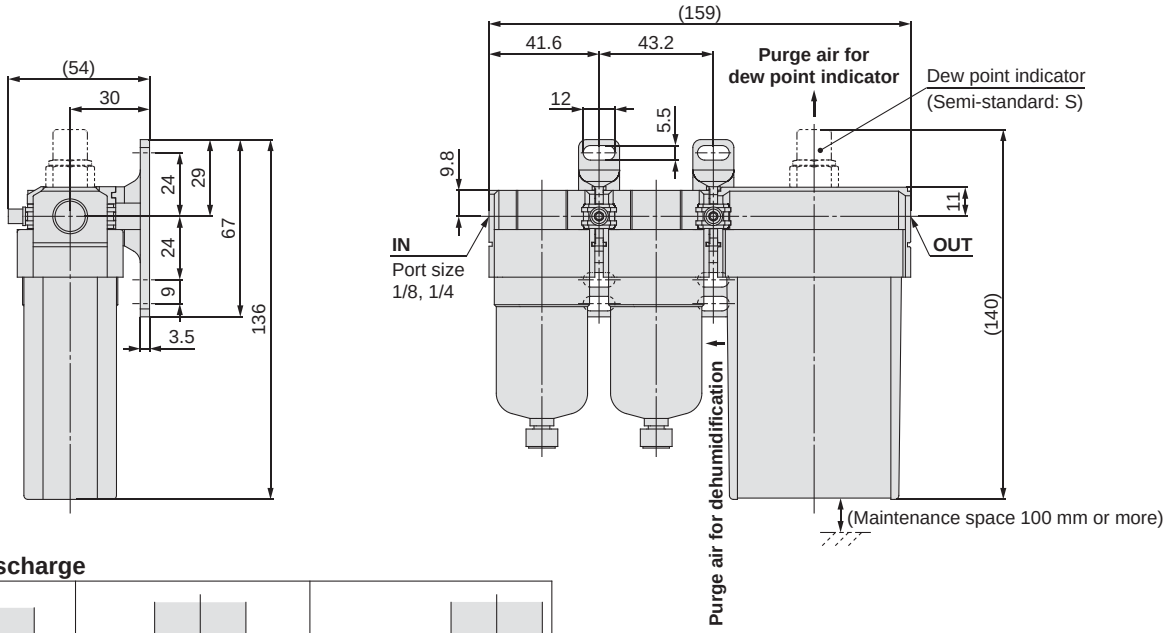



### IDG100LAM4, 100SAM4
### IDG100LAV4, 100SAV4

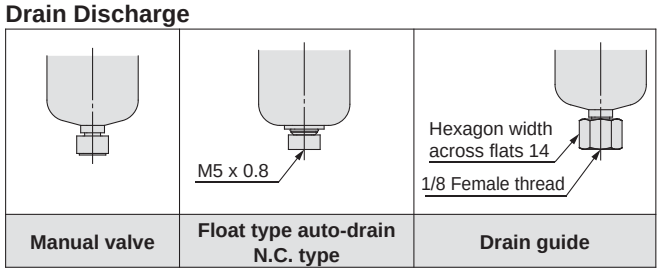


## Dimensions/Type M

### IDG3M4, 5M4
### IDG3HM4, 5HM4

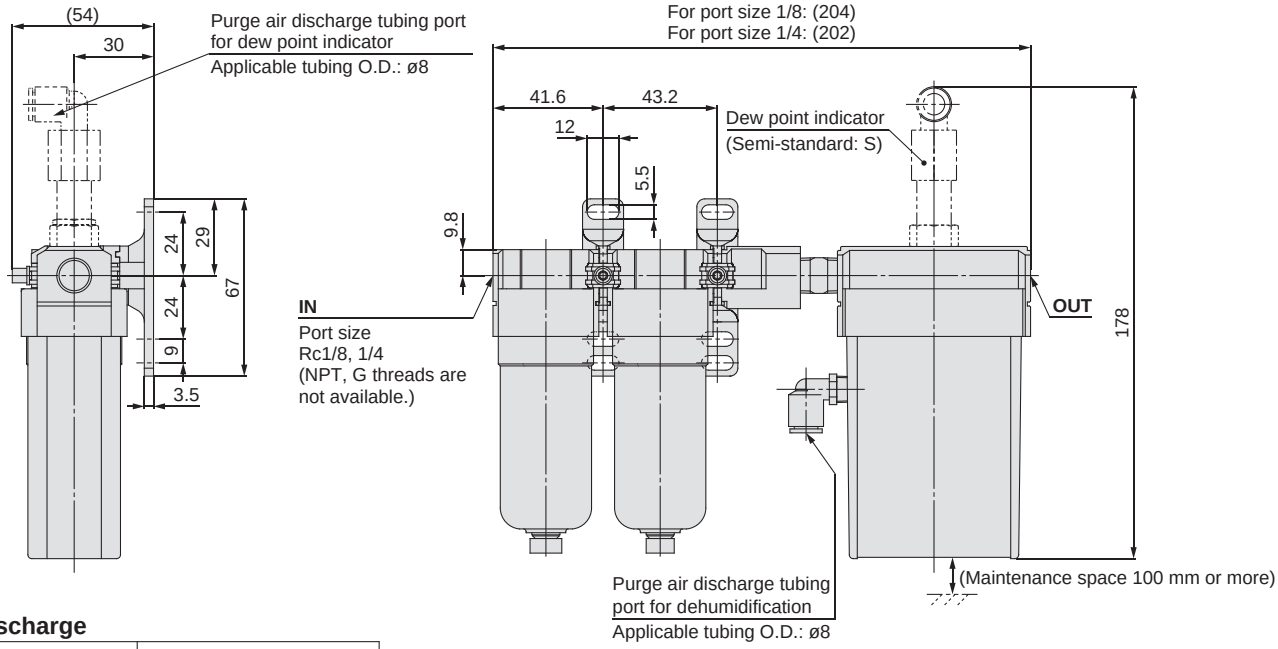



**Drain Discharge**

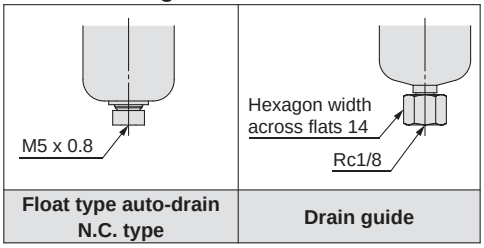



| Manual valve | Float type auto-drain N.C. type | Drain guide |
|---|---|---|

**With fitting for purge air discharge (Semi-standard: P)**



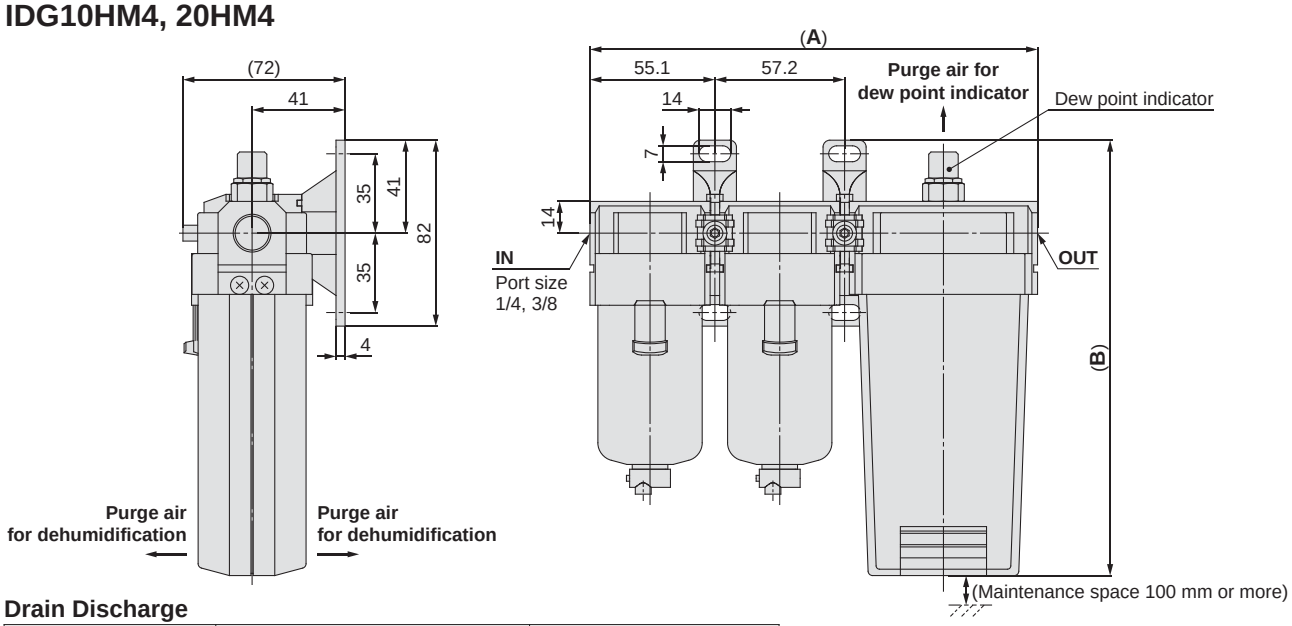

**Drain Discharge**



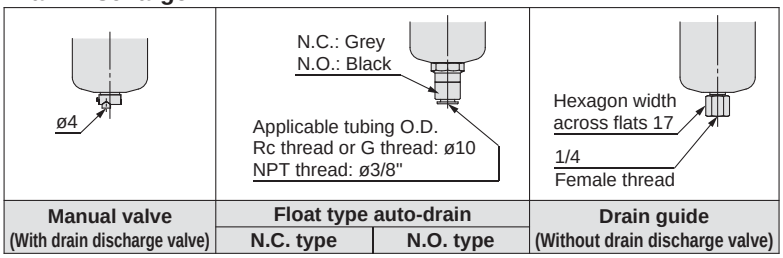

| Float type auto-drain N.C. type | Drain guide |
|---|---|

## Dimensions/Type M

### IDG10M4, 20M4
### IDG10HM4, 20HM4



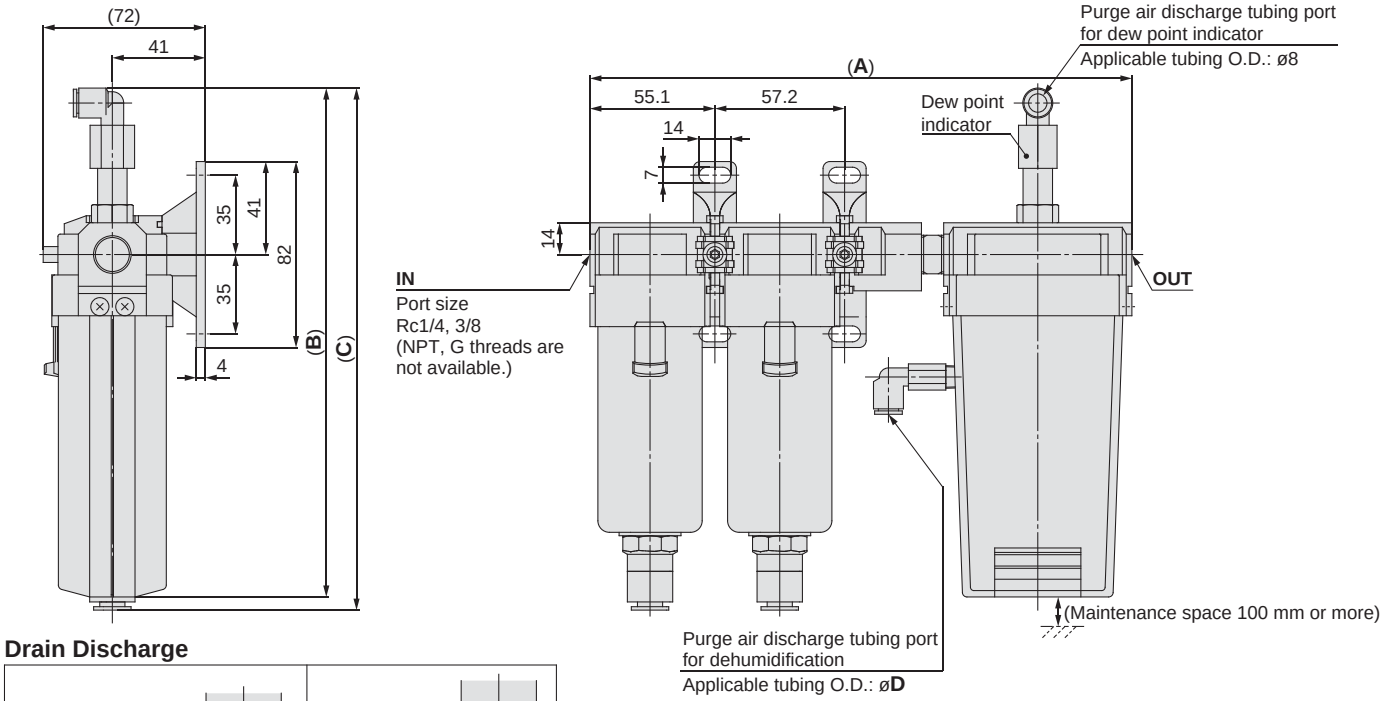

**Drain Discharge**



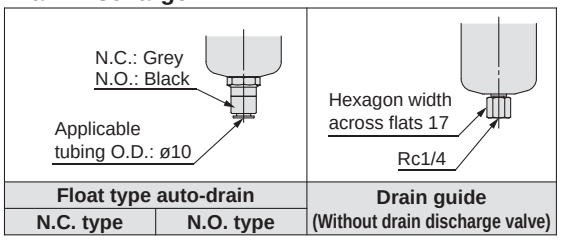

| Manual valve (With drain discharge valve) | Float type auto-drain | | Drain guide (Without drain discharge valve) |
|---|---|---|---|
| | N.C. type | N.O. type | |

| Model | A | B |
|---|---|---|
| **IDG10M4, 10HM4** | 197 | 192 |
| **IDG20M4, 20HM4** | 227 | 217 |

**With fitting for purge air discharge (Semi-standard: P)**




**Drain Discharge**

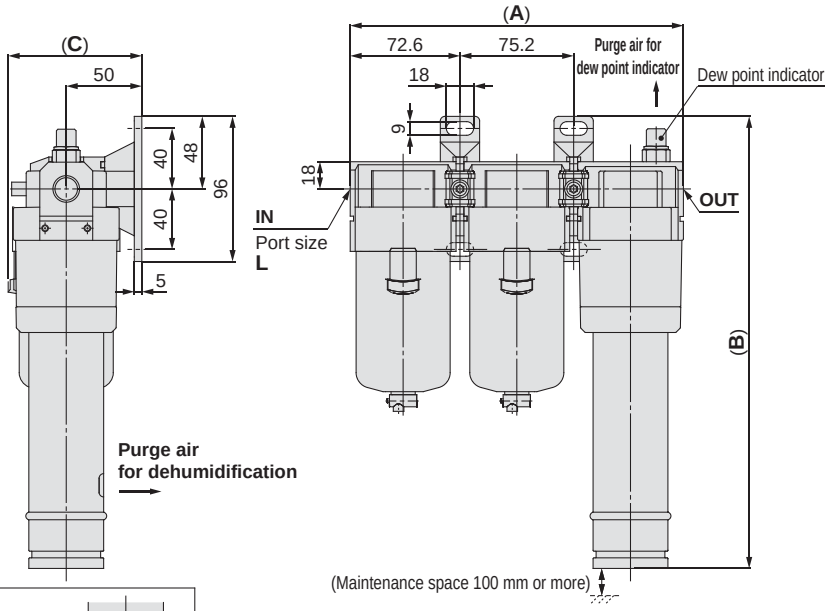



| Float type auto-drain | | Drain guide (Without drain discharge valve) |
|---|---|---|
| N.C. type | N.O. type | |

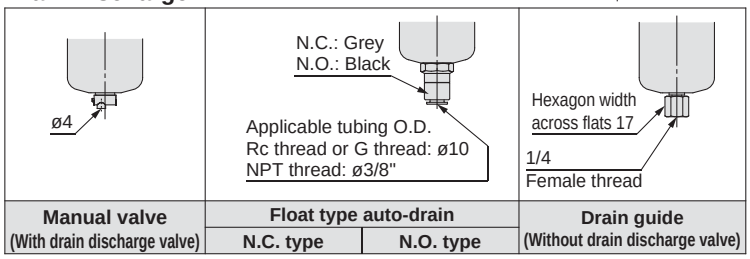
| Model | Port size | A | B | C |
|---|---|---|---|---|
| **IDG10M4, 10HM4** | 1/4 | 242 | 225 | 231 |
| | 3/8 | 243 | | |
| **IDG20M4, 20HM4** | 1/4 | 272 | 250 | — |
| | 3/8 | 273 | | |

## Dimensions/Type M

**IDG30□AM4**
**IDG50□AM4**
**IDG60□AM4**
**IDG75□AM4**
**IDG100□AM4**

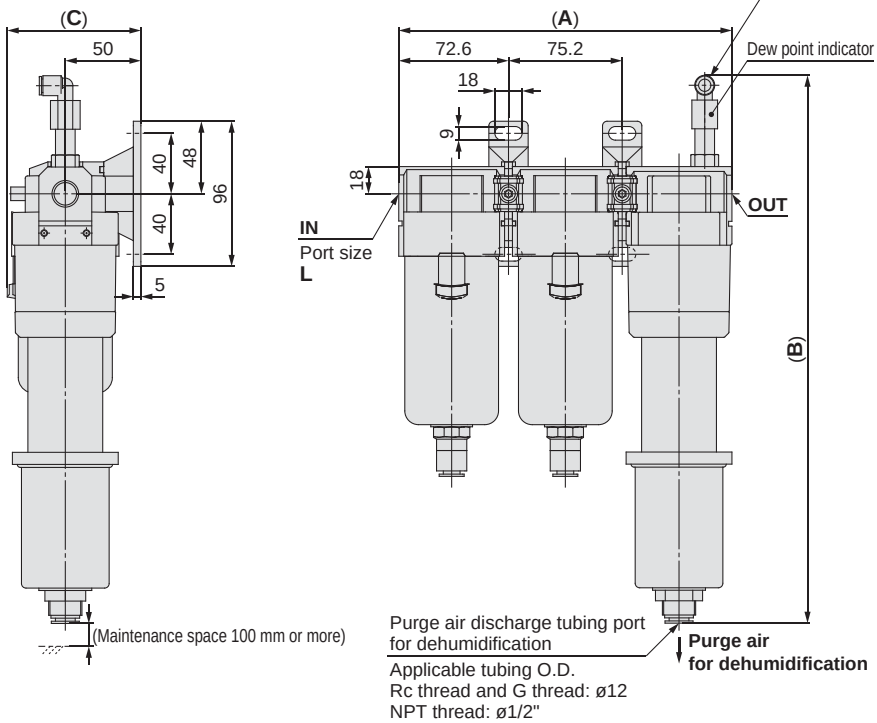



### Drain Discharge

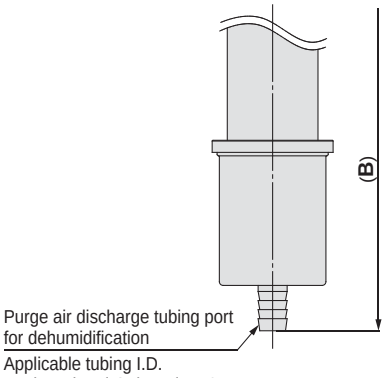



| Manual valve (With drain discharge valve) | Float type auto-drain | | Drain guide (Without drain discharge valve) |
|---|---|---|---|
| | N.C. type | N.O. type | |

### With fitting for purge air discharge (Semi-standard: P)

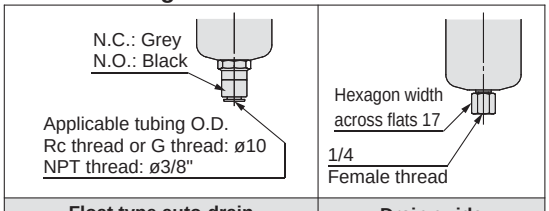



**IDG60LAM4, 75LAM4, 100LAM4**
**IDG60SAM4, 75SAM4, 100SAM4**




| Model | Port size L | A | B Standard | B Semi-standard: P | C |
|---|---|---|---|---|---|
| **IDG30□AM4** | 1/4, 3/8 | 220 | 299 | 362 | 88 |
| **IDG50□AM4** | | | 338 | 401 | |
| **IDG60LAM4, 60SAM4** | 3/8, 1/2 | 232 | 356 | 427 | 91 |
| **IDG75LAM4, 75SAM4** | | | 426 | 496 | |
| **IDG100LAM4, 100SAM4** | | | 491 | 561 | |

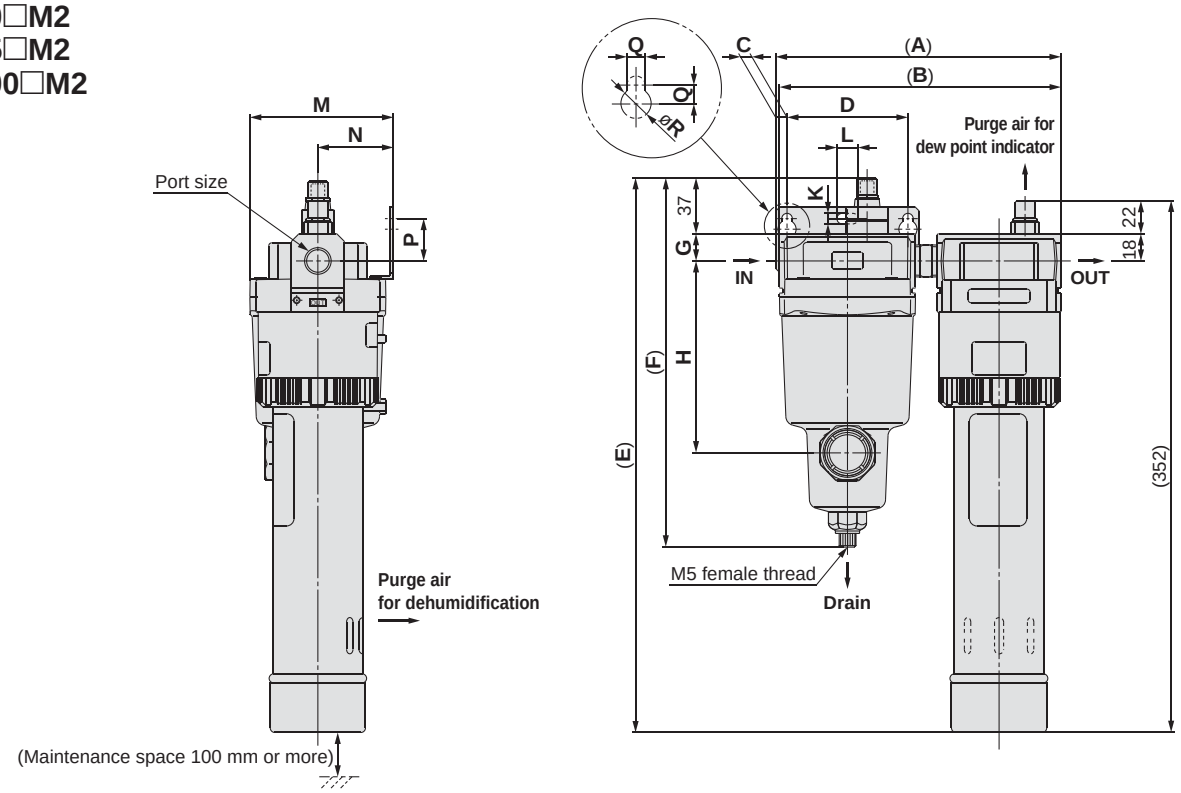
### Drain Discharge



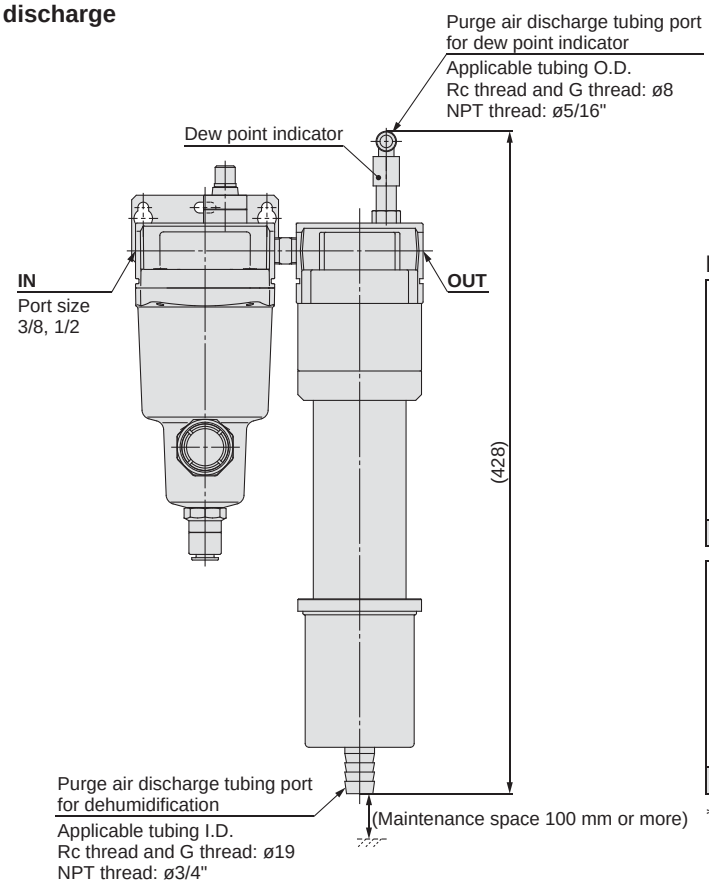

| Float type auto-drain | | Drain guide (Without drain discharge valve) |
|---|---|---|
| N.C. type | N.O. type | |

## Dimensions/Type M

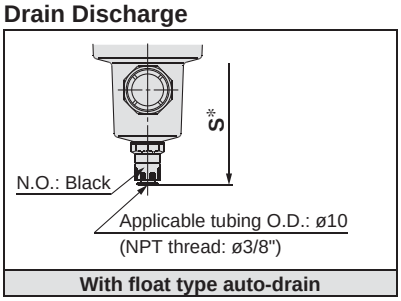
**IDG60□M2**
**IDG75□M2**
**IDG100□M2**



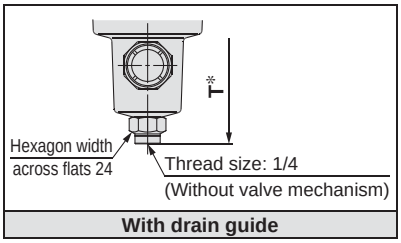

**With fitting for purge air discharge (Semi-standard: P)**




**Drain Discharge**




**With float type auto-drain**



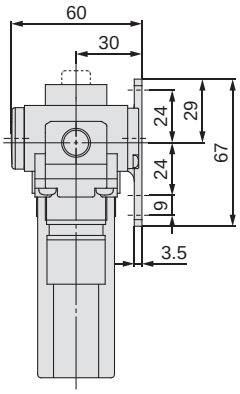

**With drain guide**

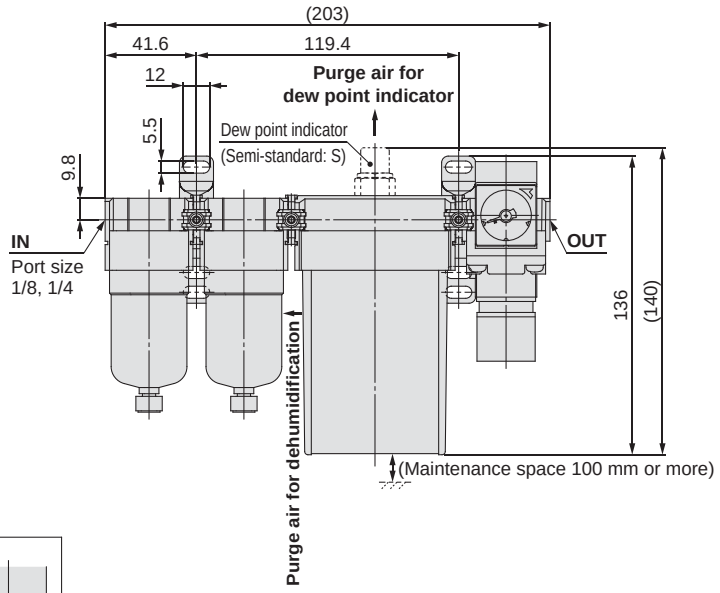
∗ Total length of the separator

| Model | Port size | A | B | C | D | E | F | G | H | K | L | M | N | P | Q | R | With float type auto-drain S | With drain guide T |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **IDG60□M2** | 3/8, 1/2 | 189 | 186 | 7.5 | 80 | 367 | 244 | 18 | 127 | 7 | 14 | 95 | 50 | 28 | 7 | 12 | 255 | 241 |
| **IDG75□M2** | 1/2 | 206 | 204 | 10.5 | 90 | 369 | 262 | 20 | 146 | 9 | 18 | 108 | 55 | 31 | 9 | 15 | 276 | 262 |
| **IDG100□M2** | | | | | | | | | | | | | | | | | | |

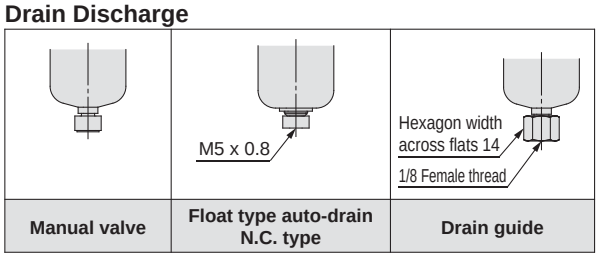
## Dimensions/Type V

### IDG3V4, 5V4
### IDG3HV4, 5HV4



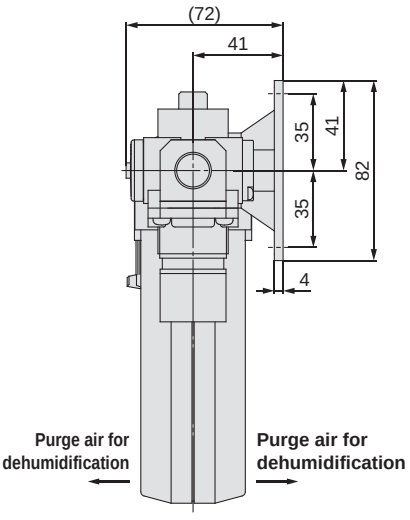



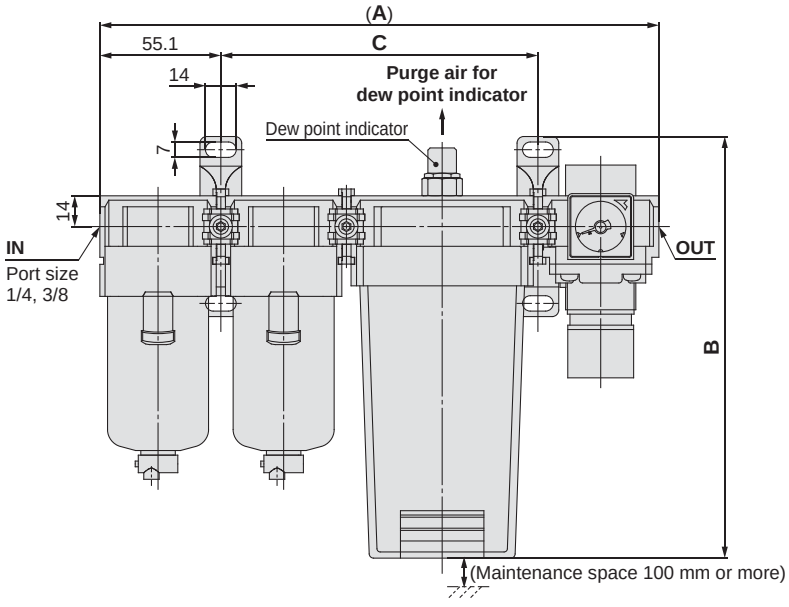

**Drain Discharge**



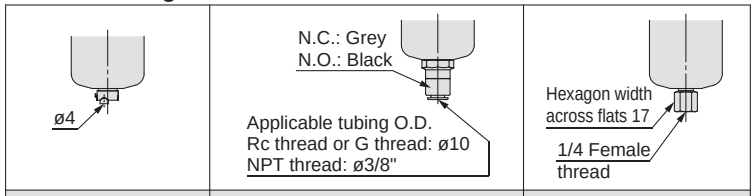

| Manual valve | Float type auto-drain N.C. type | Drain guide |
|---|---|---|

### IDG10V4, 20V4
### IDG10HV4, 20HV4




**Drain Discharge**

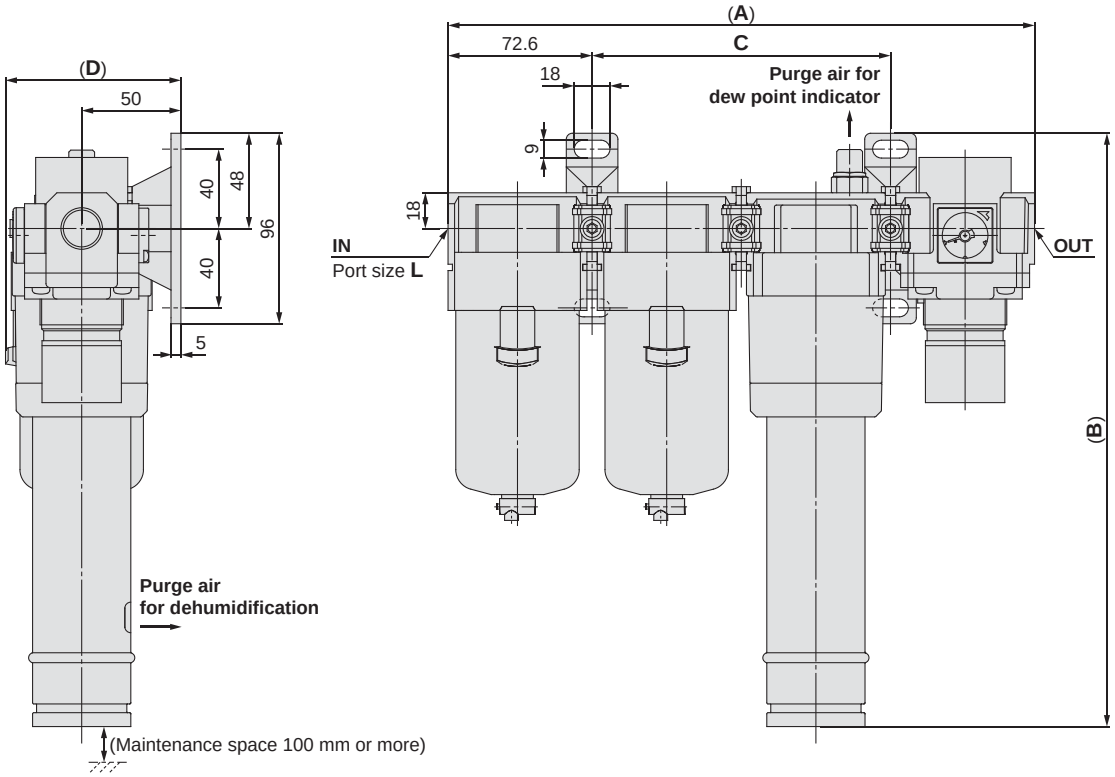



| Manual valve (With drain discharge valve) | Float type auto-drain | | Drain guide (Without drain discharge valve) |
|---|---|---|---|
| | N.C. type | N.O. type | |

| Model | A | B | C |
|---|---|---|---|
| **IDG10V4, 10HV4** | 255 | 192 | 144.4 |
| **IDG20V4, 20HV4** | 285 | 217 | 174.4 |

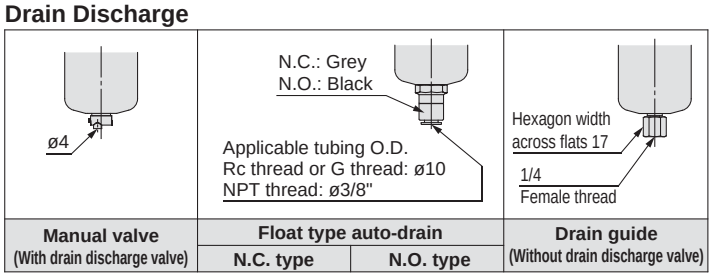
## Dimensions/Type V

**IDG30□AV4**
**IDG50□AV4**
**IDG60□AV4**
**IDG75□AV4**
**IDG100□AV4**




| Model | Port size L | A | B | C | D |
|---|---|---|---|---|---|
| **IDG30□AV4** | 1/4, 3/8 | 296 | 299 | 150.4 | 88 |
| **IDG50□AV4** | | | 338 | | |
| **IDG60LAV4, 60SAV4** | 3/8, 1/2 | 308 | 356 | 162.4 | 91 |
| **IDG75LAV4, 75SAV4** | | | 426 | | |
| **IDG100LAV4, 100SAV4** | | | 491 | | |

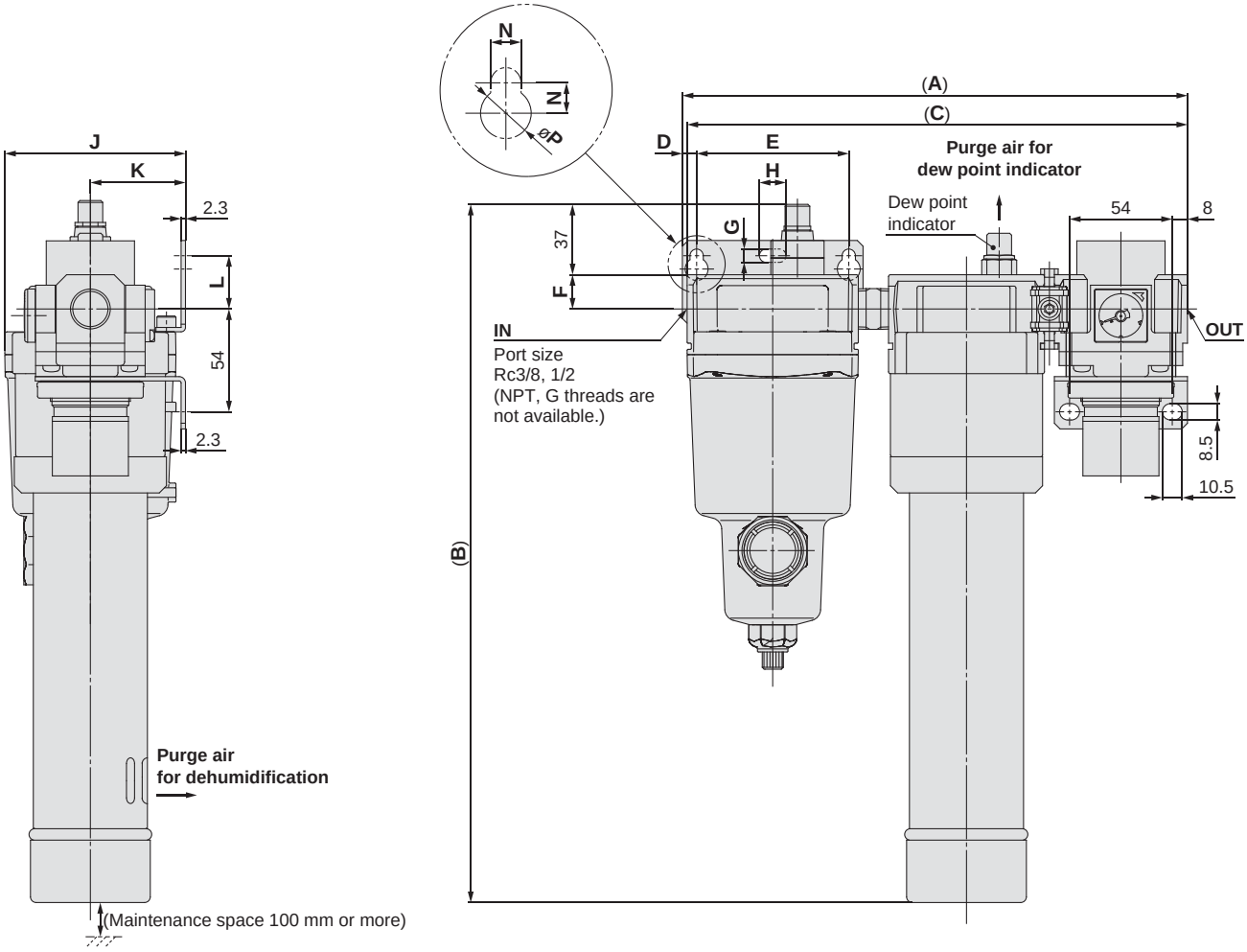
**Drain Discharge**



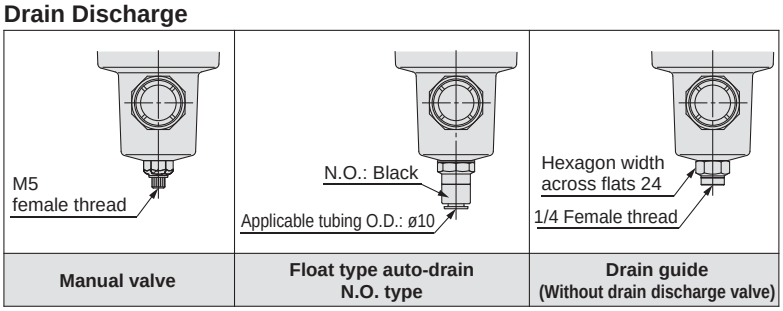

| Manual valve (With drain discharge valve) | Float type auto-drain | | Drain guide (Without drain discharge valve) |
|---|---|---|---|
| | N.C. type | N.O. type | |

## Dimensions/Type V

### IDG60V4, 75V4, 100V4
### IDG60HV4, 75HV4, 100HV4




**Drain Discharge**




| Manual valve | Float type auto-drain N.O. type | Drain guide (Without drain discharge valve) |
|---|---|---|

| Model | Port size | A | B | C | D | E | F | G | H | J | K | L | N | P |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| IDG60V4, 60HV4 | 3/8 | 264 | 367 | 261 | 7.5 | 80 | 18 | 7 | 14 | 95 | 50 | 28 | 7 | 12 |
| | 1/2 | 266 | | 263 | | | | | | | | | | |
| IDG75V4, 75HV4<br>IDG100V4, 100HV4 | 1/2 | 281 | 369 | 279 | 10.5 | 90 | 20 | 9 | 18 | 108 | 55 | 31 | 9 | 15 |

# Model Selection

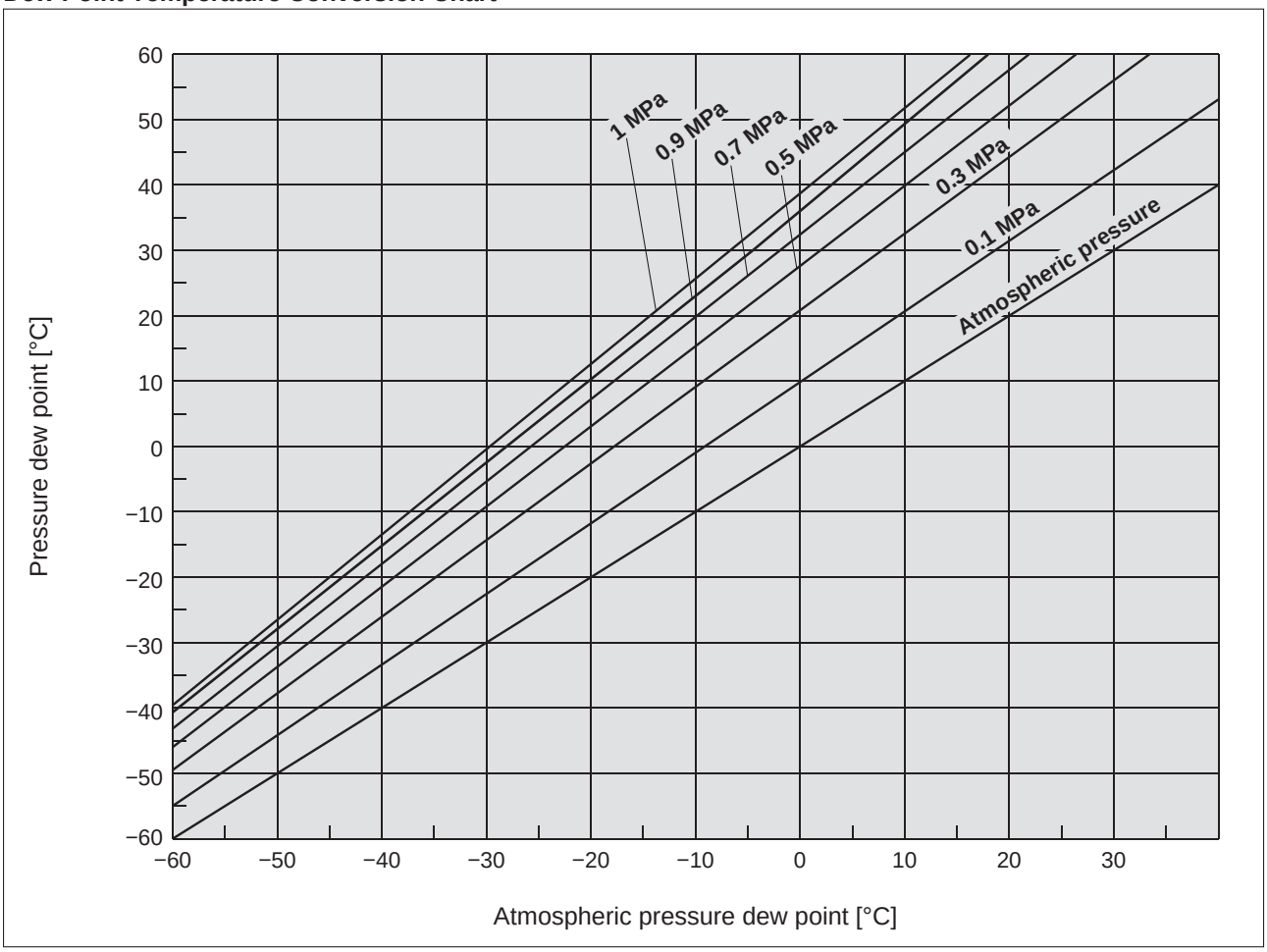
**Step 1** **Check the operating conditions.**

Outlet air flow rate [L/min [ANR]]
Outlet air atmospheric pressure dew point [°C]
(When it is necessary to convert from the pressurized dew point, refer to the conversion chart for dew point temperature below.)
Inlet air pressure [MPa]
Inlet air temperature [°C]
Allowable pressure drop **ΔP** [MPa]
Compressed air supply capacity **Q** [L/min [ANR]]

[Example]

| | |
|---|---|
| Outlet air flow rate | 150 L/min[ANR] |
| Outlet air atmospheric pressure dew point | −15 °C |
| Inlet air pressure | 0.5 MPa |
| Inlet air temperature | 35 °C |
| Allowable pressure drop | 0.03 MPa |
| Compressed air supply capacity | 300 L/min [ANR] |

**Dew Point Temperature Conversion Chart**



**Step 2** **Correction of the outlet air flow rate influenced by the inlet air temperature**

(When the inlet air temperature is 25°C, proceed to **Step 4**)

When the inlet air temperature is not the same temperature (25°C) on the performance charts, calculate the correction factor for the outlet air flow rate from the table below to compensate the outlet air flow rate.

Example:
Inlet air temperature 35°C
Outlet air flow rate 150 L/min [ANR]

From the table below (Inlet Air Temperature – Correction Factor for Outlet Air Flow Rate), correction factors for outlet air flow rate are as follows.
Series IDG□A: 0.86
Series IDG: 0.40
Therefore, corrected outlet air flow rate can be determined.
[Series IDG□A] 150 ÷ 0.86 = 175 L/min [ANR]
[Series IDG] 150 ÷ 0.4 = 375 L/min [ANR]

**Inlet Air Temperature — Correction Factor for Outlet Air Flow Rate**

| Inlet air temperature [°C] | Series IDG□A | Series IDG |
|---|---|---|
| 10 | 1.35 | 3.00 |
| 15 | 1.22 | 2.17 |
| 20 | 1.10 | 1.52 |
| 25 | 1.00 | 1.00 |
| 30 | 0.92 | 0.65 |
| 35 | 0.86 | 0.40 |
| 40 | 0.80 | 0.25 |
| 45 | 0.75 | 0.19 |
| 50 | 0.70 | 0.14 |

Note) Correction factors between Series IDG□A and Series IDG are different from each other, because the membrane module characteristics are different.

**Step 3** **Model selection based on corrected outlet air flow rate**

Based on the corrected outlet air flow rate calculated by **Step 2**, select a model from the performance charts on pages 5 and 6.

Example:
Corrected outlet air flow rate 175 L/min [ANR] [Series IDG□A]
Corrected outlet air flow rate 375 L/min [ANR] [Series IDG]
Inlet air pressure 0.5 MPa
Outlet air atmospheric pressure dew point –15°C

With the conditions of the corrected outlet air flow rate and the inlet air pressure mentioned to the left, when selecting a model which satisfies the specifications that the outlet air atmospheric pressure dew point –15°C or less,
[Series IDG□A] IDG30A, IDG50HA
[Series IDG] IDG60

**Step 4** **Check the purge air flow rate.**

Read out from the purge air flow-rate characteristics on page 9.

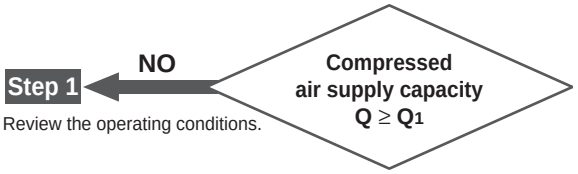
Example:
Inlet air pressure 0.5 MPa
Selected model IDG30A For the IDG30A 45 L/min [ANR]
IDG50HA For the IDG50HA 38 L/min [ANR]
IDG60 For the IDG60 94 L/min [ANR]

**Step 5** **Calculate the inlet air flow rate $Q_1$, and check the compressed air supply capacity.**

Inlet air flow rate $Q_1$ [L/min [ANR]] =
Outlet air flow rate [L/min [ANR]] + Purge air flow rate [L/min [ANR]]

Example: Assuming that the IDG30A is chosen by **Step 4**
Outlet air flow rate 150 L/min [ANR]
Purge air flow rate 45 L/min [ANR]
Compressed air supply capacity **Q** 300 L/min [ANR]

Inlet air flow rate $Q_1$ = 150 + 45 = 195 L/min [ANR]




**Step 1** Review the operating conditions.

300 ≥ 195, therefore proceed to **Step 6**

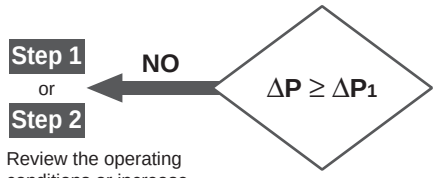
**Step 6**

**Step 6** **Check the pressure drop $\Delta P_1$ [MPa].**

Single Unit (Refer to pages 7 and 8.)
Unit (Refer to pages 21 and 22.)

Example: Selected model: IDG30A
Inlet air pressure 0.5 MPa
Inlet air flow rate 195 L/min [ANR]
Allowable pressure drop **ΔP** 0.03 MPa

- Single Unit: IDG30A
  Based on the flow-rate characteristics (page 7), $\Delta P_1$ = 0.006 MPa
- Unit: IDG30AM4
  $\Delta P_1$ = 0.01 MPa (Element initial state)




**Step 1** or **Step 2** Review the operating conditions or increase size.

For the IDG30A and IDG30AM4 (element initial state), $\Delta P \geq \Delta P_1$, therefore proceed to **Step 7**

**Step 7** **Consider the drain discharge method (in the case of Unit), accessory and semi-standard specification.**

Example:
For the IDG30A
Accessory: With bracket
Semi-standard: None
For the IDG30AM4
Drain discharge method: N.O. auto-drain
Semi-standard: None

Single Unit (Refer to pages 1 and 2.)
Unit (Refer to pages 15 and 16.)

Refer to Selection in the Specific Product Precautions 1 on page 45.

**Model selected**

<Single Unit>
**IDG30A-03B**
<Unit>
**IDG30AM4-03D**

# Made to Order 1

Please contact SMC for further details about dimensions, specifications and delivery.

Made to Order

## 1 With Element Service Indicator

Symbol **-X016**

**An element service indicator is mounted on the micro mist separator with pre-filter (Series AMH) to allow visual management of the element's clogging life. In addition, combination with a micro mist separator with pre-filter also provides a spatially compact design.**


### How to Order

Reduced purge IDG□A Series

**IDG 30 □ A M2 – □ 03 □ – □ – X016**

**Size**

| |
|---|
| 30 |
| 50 |
| 60 |
| 75 |
| 100 |

**With element service indicator**

**Semi-standard**

| Symbol | Specifications |
|---|---|
| — | None (Standard) |
| R | Flow direction (Right → Left) |

**Standard dew point temperature/Outlet air flow rate**

| Symbol | Standard dew point [°C] | Flow rate by size, Outlet air flow rate [L/min [ANR]] | | | | |
|---|---|---|---|---|---|---|
| | | 30 | 50 | 60 | 75 | 100 |
| — | −20 | 300 | 500 | — | — | — |
| H | −15 | 300 | 500 | — | — | — |
| L | −40 | 75 | 110 | 170 | 240 | 300 |
| S | −60 | — | — | — | — | 150 |

**Drain discharge method**

| Symbol | Drain discharge method |
|---|---|
| — | Manual valve |
| C | N.C. auto-drain |
| D | N.O. auto-drain |
| J | Drain guide (Port size 1/4 without valve) |

∗ For model selection of an auto-drain, refer to the Selection Precautions on page 45.

**Thread type**

| Symbol | Type |
|---|---|
| — | Rc |
| N | NPT |
| F | G |

**Port size**

| Symbol | Port size | 30 | | | 50 | | | 60 | 75 | 100 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | — | H | L | — | H | L | L | L | L | S |
| 02 | 1/4 | ● | ● | ● | — | — | ● | — | — | — | — |
| 03 | 3/8 | ● | ● | — | ● | ● | — | ● | ● | ● | ● |

**Components**

| Components | 30 | | | 50 | | | 60 | 75 | 100 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | — | H | L | — | H | L | L | L | L | S |
| Micro mist separator with pre-filter (AMH) | AMH250C | | AMH150C | AMH350C | | AMH150C | AMH250C | AMH250C | AMH250C | |

**Replacement Parts (Element for micro mist separator with pre-filter)**

| Description | AMH150C | AMH250C | AMH350C |
|---|---|---|---|
| **Element assembly** | AMH-EL150 | AMH-EL250 | AMH-EL350 |

**Refer to page 18 for the clogging indication of the element service indicator.**

## How to Order

**IDG 10 □ M2 − □ 02 □ − □ − X016**

**Size**

| |
|---|
| 3 |
| 5 |
| 10 |
| 20 |

**Standard dew point temperature/Outlet air flow rate**

| Symbol | Standard dew point [°C] | Flow rate by size, Outlet air flow rate [L/min [ANR]] | | | |
|---|---|---|---|---|---|
| | | 3 | 5 | 10 | 20 |
| — | −20 | 25 | 50 | 100 | 200 |
| H | −15 | 25 | 50 | 100 | 200 |

**With element service indicator**

**Semi-standard**

| Symbol | Specifications | Size | | | |
|---|---|---|---|---|---|
| | | 3 | 5 | 10 | 20 |
| — | None (Standard) | ● | ● | ● | ● |
| R | Flow direction (Right → Left) | ● | ● | ● | ● |
| S | With dew point indicator | ● | ● | Standard equipment | |

**Drain discharge method**

| Symbol | Drain discharge method | Size | | | |
|---|---|---|---|---|---|
| | | 3 | 5 | 10 | 20 |
| — | Manual valve | ● | ● | ● | ● |
| C | N.C. auto-drain | ● | ● | ● | ● |
| J | Drain guide (Port size 1/4 without valve) | — | — | ● | ● |

* For model selection of an auto-drain, refer to the Selection Precautions on page 45.
* Drain discharge method does not need to be selected for N.O. auto-drain type.

**Port size**

| Symbol | Port size | 3 | | 5 | | 10 | | 20 | |
|---|---|---|---|---|---|---|---|---|---|
| | | — | H | — | H | — | H | — | H |
| 01 | 1/8 | ● | ● | ● | ● | — | — | — | — |
| 02 | 1/4 | ● | ● | ● | ● | ● | ● | ● | ● |
| 03 | 3/8 | — | — | — | — | ● | ● | ● | ● |

**Thread type**

| Symbol | Type |
|---|---|
| — | Rc |
| N | NPT |
| F | G |

**Components**

| Components | 3 | | 5 | | 10 | | 20 | |
|---|---|---|---|---|---|---|---|---|
| | — | H | — | H | — | H | — | H |
| Micro mist separator with pre-filter (AMH) | AMH150C | | | | | | AMH250C | |

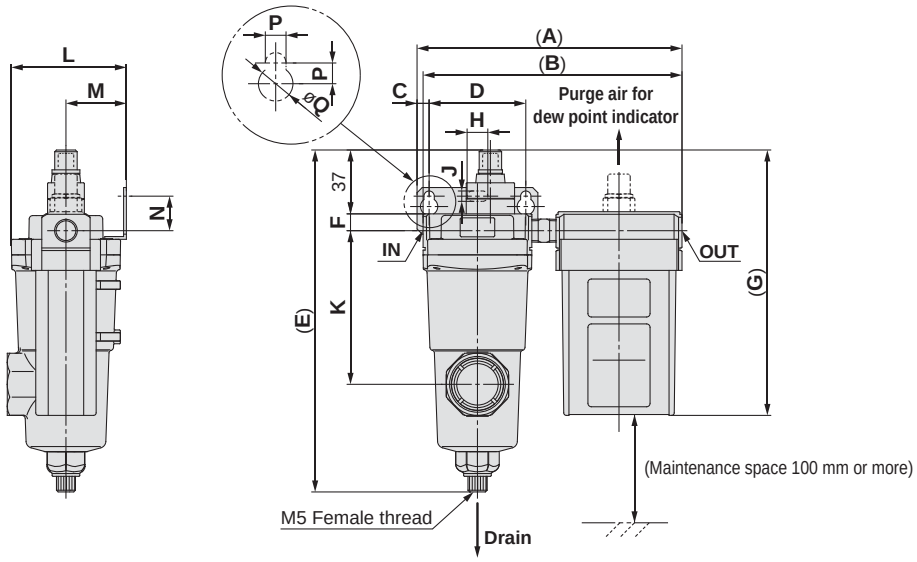
**Replacement Parts (Element for micro mist separator with pre-filter)**

| Description | AMH150C | AMH250C |
|---|---|---|
| **Element assembly** | AMH-EL150 | AMH-EL250 |

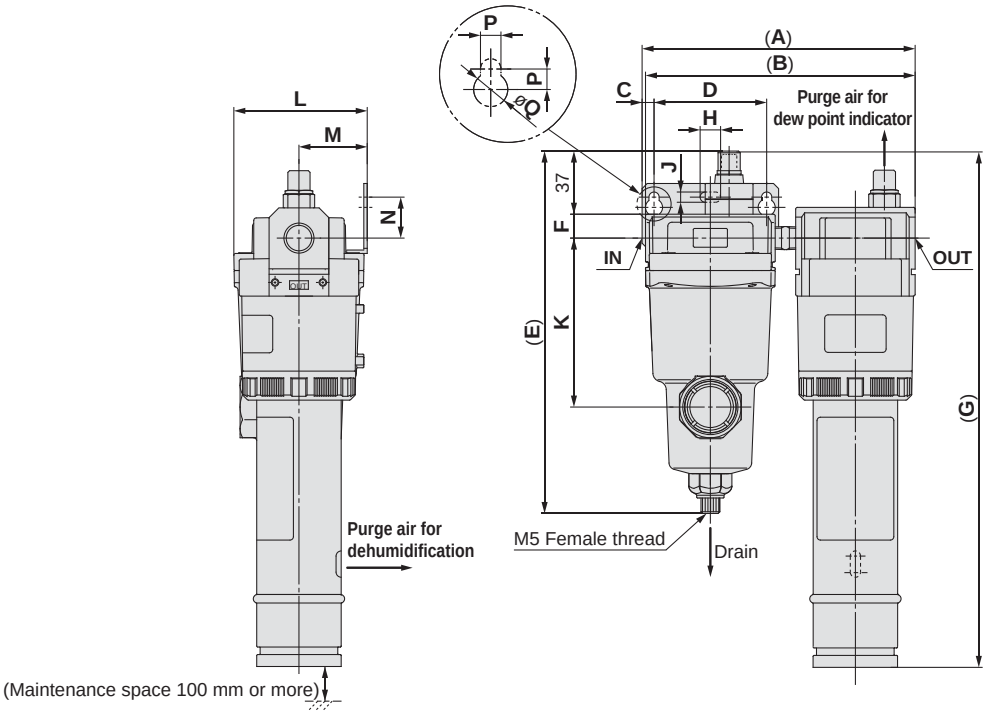
**Refer to page 18 for the clogging indication of the element service indicator.**

## Dimensions

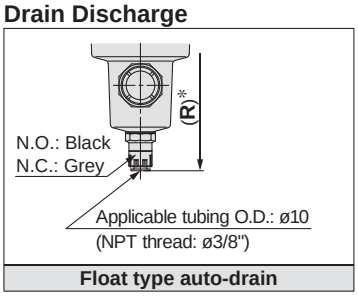
### IDG3M2, 5M2, 10M2, 20M2
### IDG3HM2, 5HM2, 10HM2, 20HM2



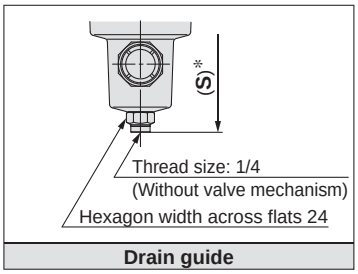

### IDG30AM2, 50AM2
### IDG30HAM2, 50HAM2
### IDG30LAM2, 50LAM2




**Drain Discharge**




**Float type auto-drain**



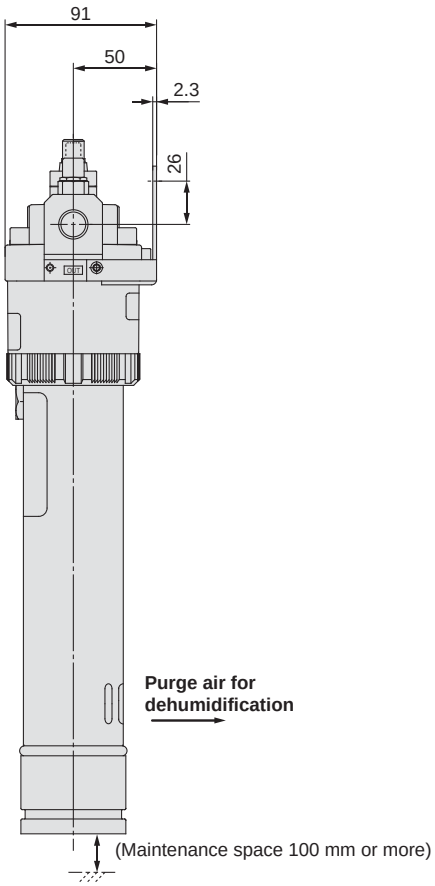

**Drain guide**

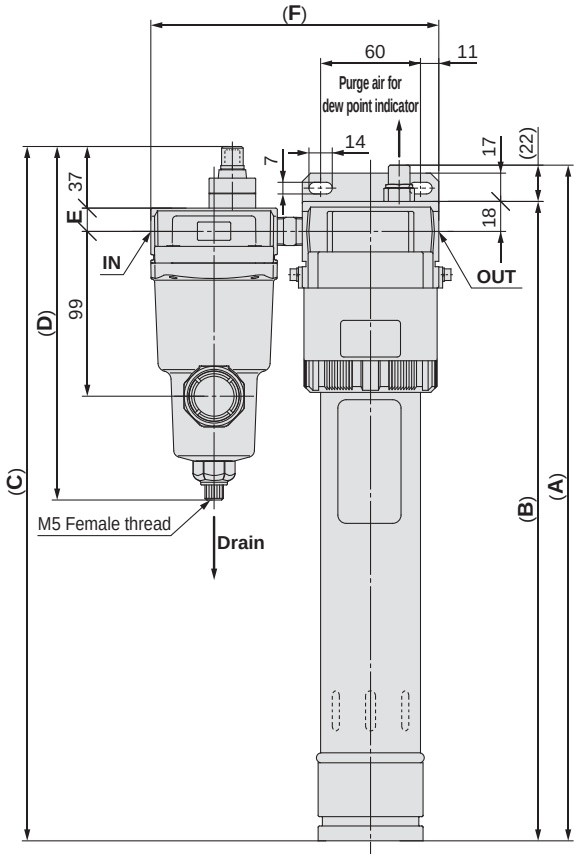
∗ Total length of the separator

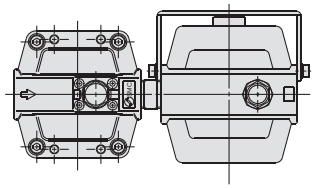
| Model | Port size | A | B | C | D | E | F | G | H | J | K | L | M | N | P | Q | With float type auto-drain | With drain guide |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | R | S |
| **IDG3M2, 3HM2, 5M2, 5HM2** | 1/8 | 155.5 | 152 | 7 | 56 | 198 | 10 | 154 | 12 | 6 | 89 | 66.5 | 35 | 20 | 6 | 10 | 209 | — |
| | 1/4 | 153.5 | 150 | | | | | | | | | | | | | | | |
| **IDG10M2, 10HM2** | 1/4 | 163.5 | 160 | | | | | 198 | | | | | | | | | | 195 |
| **IDG20M2, 20HM2** | 1/4 | 205 | 203 | | 66 | 212 | 14 | 227 | | | 99 | 78 | 40 | 24 | | | 223 | 209 |
| | 3/8 | 206 | 204 | | | | | | | | | | | | | | | |
| **IDG30AM2, 30HAM2** | 1/4, 3/8 | 160 | 158 | | | | | 302 | | | | | | | | | | |
| **IDG30LAM2** | 1/4 | 150.5 | 147 | | 56 | 198 | 10 | 298 | | | 89 | 69 | 35 | 20 | | | 209 | 195 |
| **IDG50AM2, 50HAM2** | 3/8 | 175 | 172 | 7.5 | 80 | 244 | 18 | 345 | 14 | 7 | 127 | 95 | 50 | 28 | 7 | 12 | 255 | 241 |
| **IDG50LAM2** | 1/4 | 150.5 | 147 | 7 | 56 | 198 | 10 | 337 | 12 | 6 | 89 | 69 | 35 | 20 | 6 | 10 | 209 | 195 |

## Dimensions

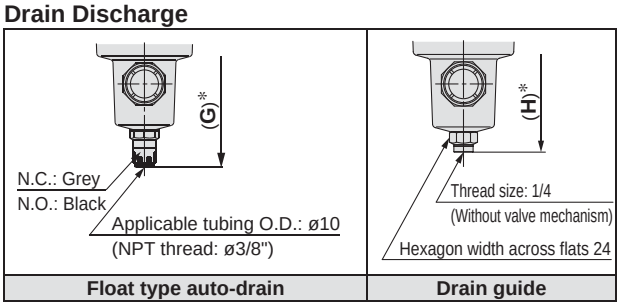
### IDG60LAM2
### IDG75LAM2
### IDG100LAM2, IDG100SAM2



**Drain Discharge**




| Float type auto-drain | Drain guide |
|---|---|

* Total length of the separator

| Model | Port size | A | B | C | D | E | F | With float type auto-drain G | With drain guide H |
|---|---|---|---|---|---|---|---|---|---|
| IDG60LAM2 | 3/8 | 348 | 326 | 359 | 212 | 14 | 170 | 223 | 209 |
| IDG75LAM2 | | 418 | 396 | 429 | | | | | |
| IDG100LAM2, IDG100SAM2 | | 483 | 461 | 494 | | | | | |

# Made to Order 2

Please contact SMC for further details about dimensions, specifications and delivery.

Made to Order

## 2 With Micro Mist Separator Regulator (Series AWD)

Symbol **-X017**

**This can be used when highly purified air is required (supply for air bearings, semiconductor parts blow, etc.). Unit Type V regulator (AR) is changed to the micro mist separator regulator (AWD).**


### How to Order

Reduced purge IDG□A Series

**IDG 30 □ A V4 − □ 03 □ − □ − X017**

**Size**

| |
|---|
| 30 |
| 50 |
| 60 |
| 75 |
| 100 |

**With micro mist separator regulator**

**Semi-standard**

| Symbol | Specifications |
|---|---|
| — | None (Standard) |
| R | Flow direction (Right → Left) |

**Standard dew point temperature/Outlet air flow rate**

| Symbol | Standard dew point [°C] | Flow rate by size, Outlet air flow rate [L/min [ANR]] | | | | |
|---|---|---|---|---|---|---|
| | | 30 | 50 | 60 | 75 | 100 |
| — | −20 | 300 | 500 | — | — | — |
| H | −15 | 300 | 500 | — | — | — |
| L | −40 | 75 | 110 | 170 | 240 | 300 |
| S | −60 | — | — | 50 | 100 | 150 |

**Drain discharge method**

| Symbol | Drain discharge method |
|---|---|
| — | Manual valve |
| C | N.C. auto-drain |
| D | N.O. auto-drain |
| J | Drain guide (Port size 1/4 without valve) |

∗ For model selection of an auto-drain, refer to the Selection Precautions on page 45.

**Thread type**

| Symbol | Type |
|---|---|
| — | Rc |
| N | NPT |
| F | G |

**Port size**

| Symbol | Port size | 30 | | | 50 | | | 60 | | 75 | | 100 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | — | H | L | — | H | L | L | S | L | S | L | S |
| 02 | 1/4 | ● | ● | ● | ● | ● | ● | — | — | — | — | — | — |
| 03 | 3/8 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| 04 | 1/2 | — | — | — | — | — | — | ● | ● | ● | ● | ● | ● |

**Components**

| Components | 30 | | | 50 | | | 60 | | 75 | | 100 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | — | H | L | — | H | L | L | S | L | S | L | S |
| Mist separator | AFM40-A | | | | | | | | | | | |
| Micro mist separator | AFD40-A | | | | | | | | | | | |
| Micro mist separator regulator | AWD40 | | | | | | | | | | | |

### Replacement Parts (Element for mist separator, micro mist separator, micro mist separator regulator)

| Description | AFM40-A | AFD40-A | AWD40 |
|---|---|---|---|
| **Element assembly** | AFM40P-060AS | AFD40P-060AS | AFD40P-060AS |

## How to Order

**IDG 10 □ V4 − □ 02 □ − □ − X017**

**Size**

| |
|---|
| 3 |
| 5 |
| 10 |
| 20 |

**With micro mist separator regulator**

**Semi-standard**

| Symbol | Specifications | Size | | | |
|---|---|---|---|---|---|
| | | 3 | 5 | 10 | 20 |
| — | None (Standard) | ● | ● | ● | ● |
| R | Flow direction (Right → Left) | ● | ● | ● | ● |
| S | With dew point indicator | ● | ● | Standard equipment | |

**Standard dew point temperature/Outlet air flow rate**

| Symbol | Standard dew point [°C] | Flow rate by size, Outlet air flow rate [L/min [ANR]] | | | |
|---|---|---|---|---|---|
| | | 3 | 5 | 10 | 20 |
| — | −20 | 25 | 50 | 100 | 200 |
| H | −15 | 25 | 50 | 100 | 200 |

**Drain discharge method**

| Symbol | Drain discharge method |
|---|---|
| — | Manual valve |
| C | N.C. auto-drain |
| D | N.O. auto-drain |
| J | Drain guide |

∗ For model selection of an auto-drain, refer to the Selection Precautions on page 45.

**Port size**

| Symbol | Port size | 3 | | 5 | | 10 | | 20 | |
|---|---|---|---|---|---|---|---|---|---|
| | | — | H | — | H | — | H | — | H |
| 01 | 1/8 | ● | ● | ● | ● | — | — | — | — |
| 02 | 1/4 | ● | ● | ● | ● | ● | ● | ● | ● |
| 03 | 3/8 | — | — | — | — | ● | ● | ● | ● |

**Thread type**

| Symbol | Type |
|---|---|
| — | Rc |
| N | NPT |
| F | G |

**Components**

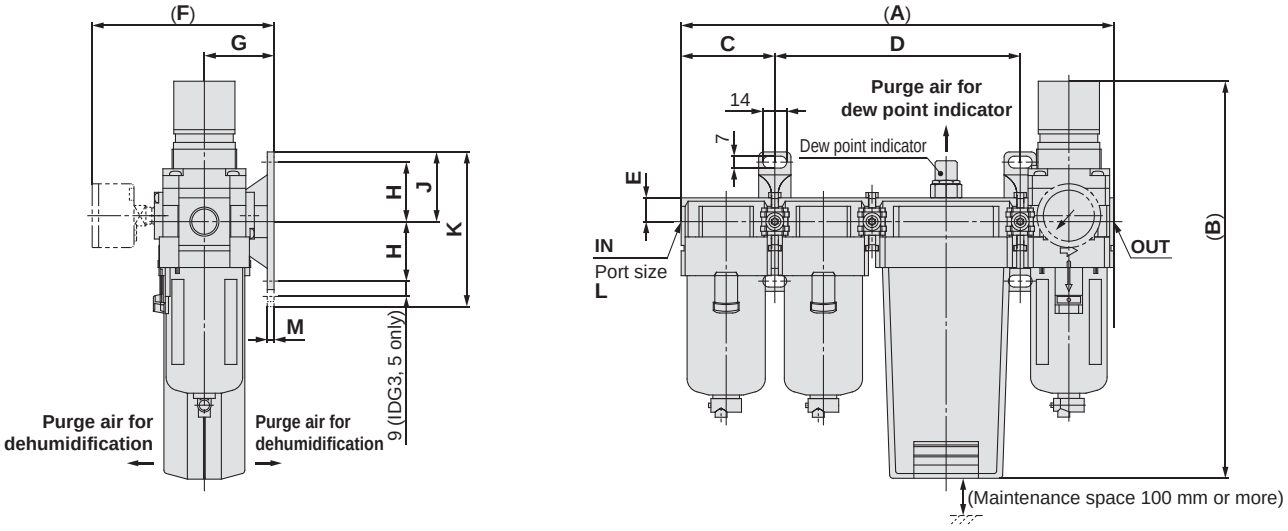
| Components | 3 | | 5 | | 10 | | 20 | |
|---|---|---|---|---|---|---|---|---|
| | — | H | — | H | — | H | — | H |
| Mist separator | AFM20-A | | | | AFM30-A | | | |
| Micro mist separator | AFD20-A | | | | AFD30-A | | | |
| Micro mist separator regulator | AWD20 | | | | AWD30 | | | |

**Replacement Parts (Element for mist separator, micro mist separator, micro mist separator regulator)**

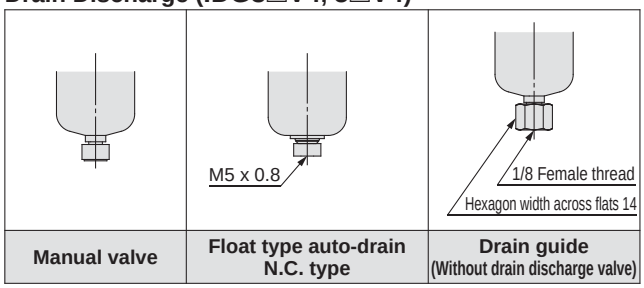
| Description | AFM20-A | AFM30-A | AFD20-A | AFD30-A | AWD20 | AWD30 |
|---|---|---|---|---|---|---|
| **Element assembly** | AFM20P-060AS | AFM30P-060AS | AFD20P-060AS | AFD30P-060AS | AFD20P-060AS | AFD30P-060AS |

## Dimensions

### IDG3V4, 5V4, 10V4, 20V4
### IDG3HV4, 5HV4, 10HV4, 20HV4

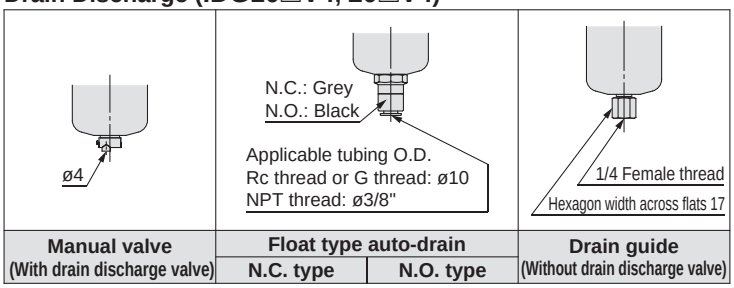



**Drain Discharge (IDG3□V4, 5□V4)**




| Manual valve | Float type auto-drain N.C. type | Drain guide (Without drain discharge valve) |
|---|---|---|

**Drain Discharge (IDG10□V4, 20□V4)**

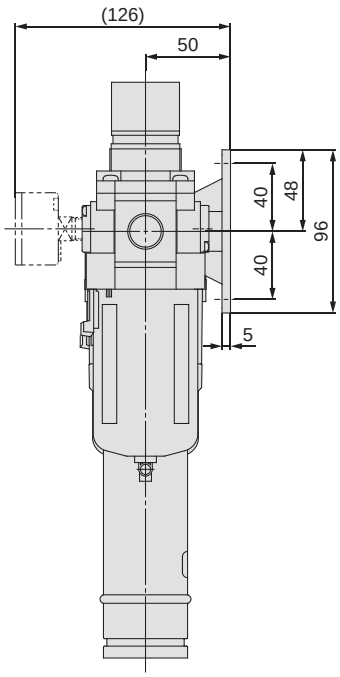


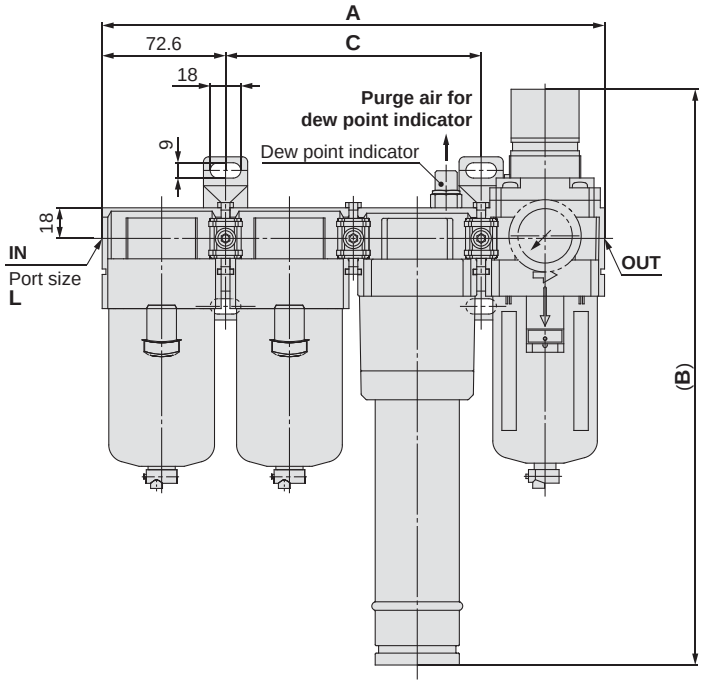

| Manual valve (With drain discharge valve) | Float type auto-drain | | Drain guide (Without drain discharge valve) |
|---|---|---|---|
| | N.C. type | N.O. type | |

| Model | Port size L | A | B | C | D | E | F | G | H | J | K | M |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| IDG3V4, 3HV4, 5V4, 5HV4 | 1/8, 1/4 | 203 | 180 | 41.6 | 119.4 | 9.8 | 93 | 30 | 24 | 29 | 67 | 3.5 |
| IDG10V4, 10HV4 | 1/4, 3/8 | 255 | 237 | 55.1 | 144.4 | 14 | 107 | 41 | 35 | 41 | 82 | 4 |
| IDG20V4, 20HV4 | | 285 | 262 | | 174.4 | | | | | | | |

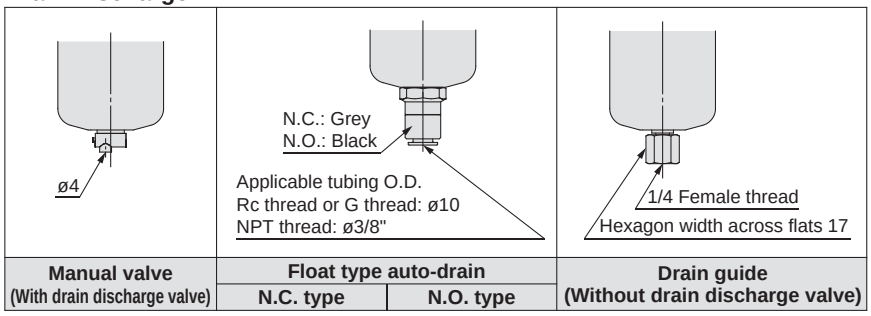
## Dimensions

**IDG30AV4, 50AV4**
**IDG30HAV4, 50HAV4**
**IDG30LAV4, 50LAV4, 60LAV4, 75LAV4, 100LAV4**
**IDG60SAV4, 75SAV4, 100SAV4**




**Drain Discharge**




| Manual valve (With drain discharge valve) | Float type auto-drain | | Drain guide (Without drain discharge valve) |
|---|---|---|---|
| | N.C. type | N.O. type | |

| Model | Port size L | A | B | C |
|---|---|---|---|---|
| IDG30□AV4 | 1/4, 3/8 | 296 | 343 | 150.4 |
| IDG50□AV4 | | | 382 | |
| IDG60LAV4, 60SAV4 | 3/8, 1/2 | 308 | 400 | 162.4 |
| IDG75LAV4, 75SAV4 | | | 470 | |
| IDG100LAV4, 100SAV4 | | | 535 | |

# Made to Order 3

Please contact SMC for further details about dimensions, specifications and delivery.

Made to Order

## 3 With Differential Pressure Gauge

Symbol **-X032**

**The service life of the element service indicator can be controlled with differential pressure.**


### How to Order

Reduced purge IDG□A Series

**IDG 30 □ A V4 − □ 03 □ − □ − X032**

**Size**

| |
|---|
| 30 |
| 50 |
| 60 |
| 75 |
| 100 |

**With differential pressure gauge**

**Semi-standard**

| Symbol | Specifications |
|---|---|
| — | None (Standard) |
| R | Flow direction (Right → Left) |

**Standard dew point temperature/Outlet air flow rate**

| Symbol | Standard dew point [°C] | Flow rate by size, Outlet air flow rate [L/min [ANR]] | | | | |
|---|---|---|---|---|---|---|
| | | 30 | 50 | 60 | 75 | 100 |
| — | −20 | 300 | 500 | — | — | — |
| H | −15 | 300 | 500 | — | — | — |
| L | −40 | 75 | 110 | 170 | 240 | 300 |
| S | −60 | — | — | 50 | 100 | 150 |

**Drain discharge method**

| Symbol | Drain discharge method | Note |
|---|---|---|
| — | Manual valve | — |
| C | N.C. auto-drain | Auto-drains listed on page 17 are attached. |
| D | N.O. auto-drain | |
| J | Drain guide | — |

∗ For model selection of an auto-drain, refer to the Selection Precautions on page 45.

**Thread type**

| Symbol | Type |
|---|---|
| — | Rc |
| N | NPT |
| F | G |

**Port size**

| Symbol | Port size | 30 | | | 50 | | | 60 | | 75 | | 100 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | — | H | L | — | H | L | L | S | L | S | L | S |
| 02 | 1/4 | ● | ● | ● | ● | ● | ● | — | — | — | — | — | — |
| 03 | 3/8 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| 04 | 1/2 | — | — | — | — | — | — | ● | ● | ● | ● | ● | ● |

**Components**

| Components | 30 | | | 50 | | | 60 | | 75 | | 100 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | — | H | L | — | H | L | L | S | L | S | L | S |
| Mist separator | AFM40-A | | | | | | | | | | | |
| Micro mist separator | AFD40-A | | | | | | | | | | | |
| Differential pressure gauge | GD40-2-01-X29 | | | | | | | | | | | |
| Regulator | AR40-B | | | | | | | | | | | |

**Replacement Parts (Element for mist separator, micro mist separator)**

| Description | AFM40-A | AFD40-A |
|---|---|---|
| **Element assembly** | AFM40P-060AS | AFD40-060AS |

## How to Order

**IDG 10 □ V4 − □ 02 □ − □ − X032**

**Size**

| |
|---|
| 3 |
| 5 |
| 10 |
| 20 |

**With differential pressure gauge**

**Semi-standard**

| Symbol | Specifications | Size | | | |
|---|---|---|---|---|---|
| | | 3 | 5 | 10 | 20 |
| — | None (Standard) | ● | ● | ● | ● |
| R | Flow direction (Right → Left) | ● | ● | ● | ● |
| S | With dew point indicator | ● | ● | Standard equipment | |

**Standard dew point temperature/Outlet air flow rate**

| Symbol | Standard dew point [°C] | Flow rate by size, Outlet air flow rate [L/min [ANR]] | | | |
|---|---|---|---|---|---|
| | | 3 | 5 | 10 | 20 |
| — | −20 | 25 | 50 | 100 | 200 |
| H | −15 | 25 | 50 | 100 | 200 |

**Drain discharge method**

| Symbol | Drain discharge method | Note |
|---|---|---|
| — | Manual valve | — |
| C | N.C. auto-drain | Auto-drains listed on page 17 are attached. |
| D | N.O. auto-drain | |
| J | Drain guide | — |

∗ For model selection of an auto-drain, refer to the Selection Precautions on page 45.

**Port size**

| Symbol | Port size | 3 | | 5 | | 10 | | 20 | |
|---|---|---|---|---|---|---|---|---|---|
| | | — | H | — | H | — | H | — | H |
| 01 | 1/8 | ● | ● | ● | ● | — | — | — | — |
| 02 | 1/4 | ● | ● | ● | ● | ● | ● | ● | ● |
| 03 | 3/8 | — | — | — | — | ● | ● | ● | ● |

**Thread type**

| Symbol | Type |
|---|---|
| — | Rc |
| N | NPT |
| F | G |

**Components**

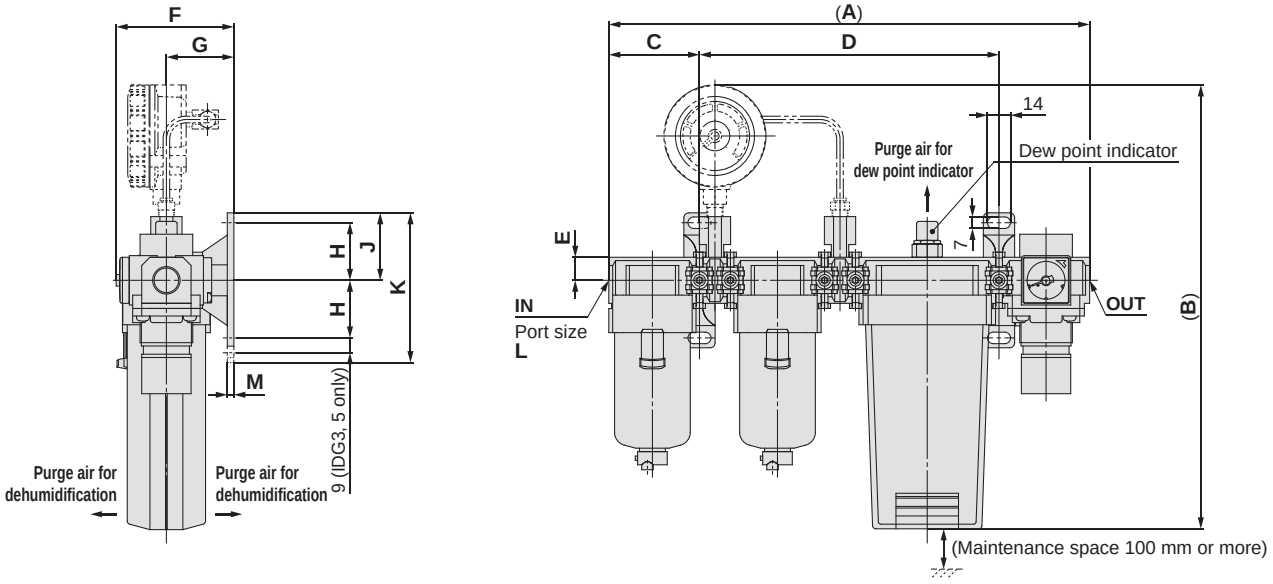
| Components | 3 | | 5 | | 10 | | 20 | |
|---|---|---|---|---|---|---|---|---|
| | — | H | — | H | — | H | — | H |
| Mist separator | AFM20-A | | | | AFM30-A | | | |
| Micro mist separator | AFD20-A | | | | AFD30-A | | | |
| Differential pressure gauge | GD40-2-01-X29 | | | | | | | |
| Regulator | AR20-B | | | | AR25-B | | | |

**Replacement Parts (Element for mist separator, micro mist separator)**

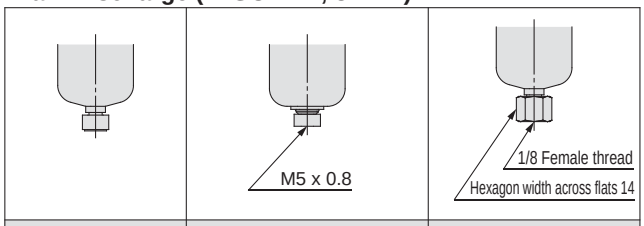
| Description | AFM20-A | AFM30-A | AFD20-A | AFD30-A |
|---|---|---|---|---|
| **Element assembly** | AFM20P-060AS | AFM30P-060AS | AFD20P-060AS | AFD30P-060AS |

## Dimensions

### IDG3V4, 5V4, 10V4, 20V4
### IDG3HV4, 5HV4, 10HV4, 20HV4

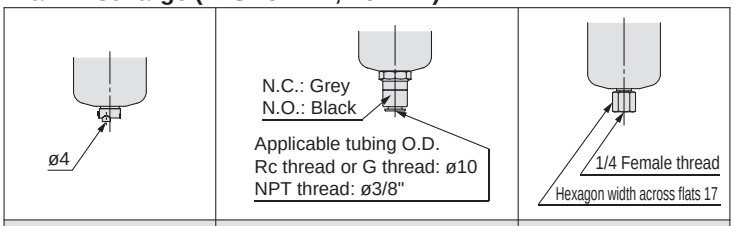



**Drain Discharge (IDG3□V4, 5□V4)**




| Manual valve | Float type auto-drain N.C. type | Drain guide (Without drain discharge valve) |
|---|---|---|

**Drain Discharge (IDG10□V4, 20□V4)**

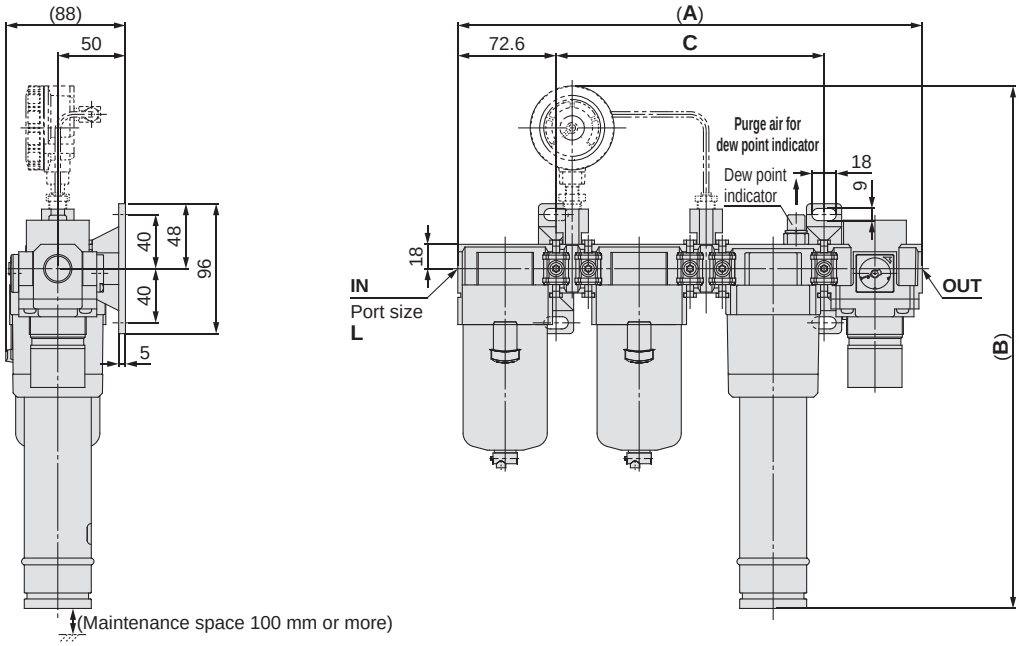



| Manual valve (With drain discharge valve) | Float type auto-drain | | Drain guide (Without drain discharge valve) |
|---|---|---|---|
| | N.C. type | N.O. type | |

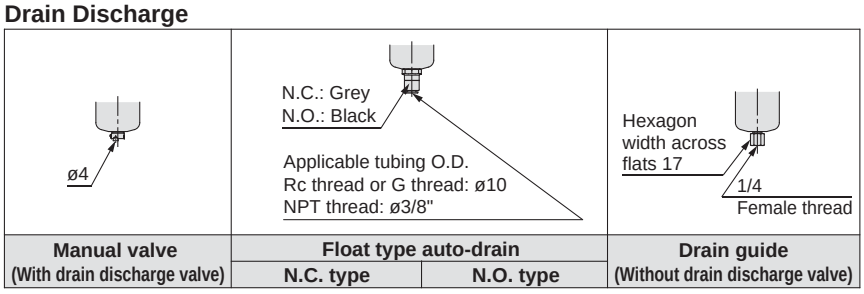
| Model | Port size L | A | B | C | D | E | F | G | H | J | K | M |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| IDG3V4, 3HV4, 5V4, 5HV4 | 1/8, 1/4 | 238 | 219 | 41.6 | 155 | 9.8 | 60 | 30 | 24 | 29 | 67 | 3.5 |
| IDG10V4, 10HV4 | 1/4, 3/8 | 292 | 270 | 55.1 | 182 | 14 | 72 | 41 | 35 | 41 | 82 | 4 |
| IDG20V4, 20HV4 | | 322 | 295 | | 212 | | | | | | | |

## Dimensions

**IDG30AV4, 50AV4**
**IDG30HAV4, 50HAV4**
**IDG30LAV4, 50LAV4, 60LAV4, 75LAV4, 100LAV4**
**IDG60SAV4, 75SAV4, 100SAV4**




**Drain Discharge**




| Manual valve (With drain discharge valve) | Float type auto-drain | | Drain guide (Without drain discharge valve) |
|---|---|---|---|
| | N.C. type | N.O. type | |

| Model | Port size L | A | B | C |
|---|---|---|---|---|
| **IDG30□AV4** | 1/4 | 343 | 387 | 198 |
| **IDG50□AV4** | 3/8 | | 423 | |
| **IDG60LAV4, 60SAV4** | 3/8 | 355 | 441 | 210 |
| **IDG75LAV4, 75SAV4** | 1/2 | | 511 | |
| **IDG100LAV4, 100SAV4** | | | 576 | |

# Series IDG□A/IDG
# Specific Product Precautions 1

**Be sure to read before handling. Refer to back cover for Safety Instructions and "Handling Precautions for SMC Products" (M-E03-3) for Air Preparation Equipment Precautions.**

## Design

## ⚠ Warning

**1. Depending on the model and operating conditions, the oxygen ratio of the outlet air may drop.**
Do not use standard dew point –40°C (symbol: L) type, standard dew point –60°C (symbol: S) type and IDG30A, 50A, 30HA, 50HA for dehumidifying breathing air. Do not use only outlet air (dry air) in a closed room.

**2. Do not exert intermittent pressure on this product.**
(Example: Frequently operating solenoid valves installed on the primary side) Intermittent pressure damages the product.

## ⚠ Caution

**1. Install a regulator on the outlet side of the membrane air dryer.**
If it is installed on the inlet side, dehumidification performance will be reduced.

**2. Devise a layout which considers the position of purge air discharge ports.**
Purge air is humid air. Devise a layout in which purge air will not cause trouble such as corrosion or malfunction of peripheral equipment.

**3. When highly purified air is required**
(Supply to air bearings, blowing of semiconductor parts, etc.)
Install a micro mist separator or super mist separator on the outlet side (end terminal) of the membrane air dryer (unit).
Grease is applied inside a regulator used in the unit (Type V).
When highly purified air is required, please either mount the above separator on the outlet side or use a made-to-order product (refer to pages 37 and 38), which is provided with a micro mist separator (Series AWD) instead of a regulator.

**4. Time to reach the standard dew point**
A certain amount of time is required to achieve the standard dew point after the air begins flowing into the membrane air dryer. Using the times below as a guide, begin operating outlet side equipment after the standard dew point is achieved.

Standard dew point −20°C, −15°C : about 10 minutes
Standard dew point −40°C : about 30 minutes *
Standard dew point −60°C : about 60 minutes *

* This time can be shortened as described below.
1) Provide a valve on the outlet side of the membrane air dryer.
2) Supply air with the valve closed. Only purge air flows into the membrane air dryer.
3) After 15 minutes or more, open the valve and let air flow to the outlet side equipment.

**5. Dehumidification performance when inlet air temperature changes**
Performance chart shows the case at an inlet air temperature of 25°C. In other cases, refer to "Model Selection" (page 31) for proper selection.

**6. Do not use for applications such as repeatedly bending or stretching (IDG1). This may cause damage to the product.**

## Selection

## ⚠ Caution

**1. Consider the purge air flow rate.**
Find the purge air flow rate from the charts and calculate the "required outlet air flow rate + purge air flow rate". The air supply capacity must be at least equal to the calculated flow or the required outlet air flow rate cannot be obtained.

**2. Selection for a compressed air line in which a mist separator or micro mist separator is already installed**
Verify the operating air flow rate and air pressure, and select a membrane air dryer in accordance with "Model Selection" (page 31). If a membrane air dryer is selected using the port size of the equipment that is already installed as a reference, it could result in the selection of a model that is too small and has an insufficient dehumidification capacity.

**3. With fitting for purge air discharge (Semi-standard: P)**
The dehumidification capacity decreases in proportion to the length of the tube for discharging purge air. Use a tube of the specified size and keep its length within 5 meters. For the outlet air atmospheric pressure dew point in relation to the length of the tube for discharging purge air, refer to the table "regarding the outlet air atmospheric dew point in relation to the tube length for purge air discharge" on page 8.

**4. Auto-drain selection for the unit type**
When the compressor in use is for 2.2 kW (300 L/min [ANR]) or less, use an N.C. auto-drain (symbol: C). If an N.O. auto-drain (symbol: D) is used when the compressor is for 2.2 kW or less, pressure inside the mist separator may not increase and remain in the state of blowing off. Auto-drain with differential pressure type can be used in 2.2 kW or less.

## Mounting

## ⚠ Caution

**1. Do not obstruct the purge air discharge ports.**
The product may be damaged. And if purge air back pressure becomes too high or purge air stops flowing, dehumidification performance will decrease or may become impossible.

**2. Be sure to install a mist separator and micro mist separator or a micro mist separator with pre-filter on the inlet side of the membrane air dryer.**
If the inlet air contains oil, performance will be reduced. (A mist separator and micro mist separator or a micro mist separator with pre-filter are already installed on the unit types.)

**3. Remove water droplets from the inlet air.**
Water droplets in the air can lower performance and cause malfunction.

**4. Large quantities of dust (solid foreign matter) are contained in the supply air.**
When there are large quantities of dust (solid foreign matter), install an air filter or main line filter to the inlet side of the mist separator in addition to 2 above.

**5. Take sufficient care in handling.**
There is a danger of damage if dropped.

**6. When using a fixture, fix it on the metal part of the product.**
Using a fixture on the resin part may cause damage to the product.

# Specific Product Precautions 2

**Be sure to read before handling. Refer to back cover for Safety Instructions and "Handling Precautions for SMC Products" (M-E03-3) for Air Preparation Equipment Precautions.**



## Piping

### ⚠ Warning

**1. Check for locking of case and body.**

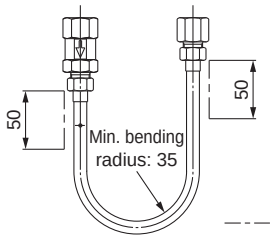
When using in a unit, be sure to set the air pressure to zero before using a mist separator or micro mist separator with modular connections. Also, confirm that the body and case are locked together with a click before starting the flow of compressed air.

**2. Check for tightening of the holder.**
**(for IDG30A to IDG100, IDG30HA to IDG100H, IDG30LA to IDG100LA, IDG60SA to IDG100SA)**

Before starting the flow of compressed air, turn the membrane air dryer's holder in its tightening direction, confirming that it is completely tightened and that the case will not come off.

**3. Minimum bending radius (for IDG1)**

Maintain a minimum bending radius of 35 mm or more and do not bend the sections that are within 50 mm from the nuts. Furthermore, do not twist the product.




— - — sections cannot be bent.

**4. With fitting for purge air discharge (Semi-standard: P)**

The piping of purge air for dehumidification and for the dew point indicator can be combined, but do not combine it with compressed air lines or drain piping or merge the purge air with exhaust air from other equipment. As this can cause damage.

### ⚠ Caution

**1. Use of tools**

Hold the upper portion of the body (aluminium die-casted section) with a wrench or adjustable angle wrench. Do not turn it while holding the case section.

**2. Drain piping for separators**

When installing drain piping for mist separators or micro mist separators, use a tube of the prescribed size and keep the length within 5 meters. Also, be sure that the tube does not rise up or become folded over.

**3. Piping materials for low dew point air**

If air of a low dew point (–40°C or less) is required, do not use a nylon tube piping and resin fittings (except fluoropolymer) for the outlet side of the membrane air dryer. Due to the nature of the nylon tube, it could be affected by the ambient air, and it might not be possible to achieve the prescribed low dew point at the end of the tube. Therefore, for low dew point air, use a stainless steel or fluoropolymer piping.

## Piping

### ⚠ Caution

**4. With fitting for purge air discharge (Semi-standard: P) (for IDG60 to IDG100, IDG60H to IDG100H, IDG60LA to IDG100LA, IDG60SA to IDG100SA)**

To install piping for dehumidification purge air discharge, attach tubing of the prescribed size to the hose nipple section and then secure it with tubing bands.

**5. Before piping is connected, flush the piping.**

Be sure to remove chips, cutting oil and other debris. If they get into the product, unexpected malfunction or damage to the product may occur.

## Air Supply

### ⚠ Caution

**1. Compressed air supply capacity**

An air source that has a supply capacity that is larger than the "required outlet air flow rate (dry air flow rate) + purge air flow rate" is required. Verify the purge air flow rate in "Purge Air Flow-rate Characteristics." (page 9)

**2. Chemicals with a negative effect on this product**

Chemicals listed in the table below in the compressed air can lower performance and damage the element. Do not use the product in environments including these chemicals.

| Category | Chemicals not to be included |
|---|---|
| Solvents | Acetone, benzene, phenol, toluene, trichloroethylene, xylene, cresol, thinner, aniline, chloroform, chlorobenzene, trichloroethane, ethylbenzene, ethyl alcohol, methyl alcohol, isopropyl alcohol, dioxin, tetrahydrofuran, methylene chloride, cyclohexane, carbon tetrachloride, methyl ketone, ethyl ketone, hexafluoroisopropanol, and others |
| Acids | Sulfuric acid, nitric acid, hydrochloric acid, acetic acid, lactic acid, chromic acid, and others |
| Gases | Chlorine gas, sulfurous acid gas, hydrogen chloride, bromine, ozone, ammonia, and others |
| Oils | Phosphoric-ester hydraulic oil, fuel oil, water soluble cutting oil (alkaline), kerosene, and others |
| Strong bases | Lithium hydroxide, sodium hydroxide, potassium hydroxide, calcium hydroxide, and others |
| Others | Anaerobic adhesive, anaerobic sealant, and others |

# Series IDG□A/IDG
# Specific Product Precautions 3

**Be sure to read before handling. Refer to back cover for Safety Instructions and "Handling Precautions for SMC Products" (M-E03-3) for Air Preparation Equipment Precautions.**

## Operating Environment

## ⚠ Caution

**1. Do not use at temperatures (fluid or ambient temperatures) higher than the prescribed operating conditions.**

Resin is used in the membrane module, and it can be damaged by operation at high temperatures. Especially when installed immediately after a reciprocating type air compressor, confirm that the fluid temperature does not exceed the range of operating conditions during use.

**2. Keep the inlet air temperature lower than the ambient temperature.**

If the membrane air dryer body is cooled by the surrounding air, water drops may accumulate inside and reduce its dehumidification capacity.

**3. Do not use in the following environments, as this can cause failure.**

1) In locations having corrosive gases, organic solvents, and chemicals, or in locations where these elements are likely to adhere to the equipment.

2) In locations where salt water, water, or water vapor could come in contact with the equipment.

3) In locations that is exposed to shocks and vibrations.

## Maintenance

## ⚠ Caution

**1. Confirm that the equipment's pressure is at zero and no longer in a pressurized state before removing any parts or piping. Performing any work while pressure remains in the equipment may lead to injury or product damage.**

**2. When replacing the membrane module**

For modular connections, be sure to remove the membrane air dryer before attempting any replacement work.

**3. About the dew point indicator**

You can use the dew point indicator to confirm the state of the outlet air of the membrane air dryer.

· When the absorbent is blue or pink
[Dew point indicator is blue]····· Dry state
[Dew point indicator is pink]····· Wet state

· When the absorbent is green or yellow
[Dew point indicator is green] ····· Dry state
[Dew point indicator is yellow] ····· Wet state

It takes time for the dew point indicator's color to change.
Absorbent is used in the dew point indicator. When it absorbs vaporized oil content or other gaseous components in the compressed air, it may turn a color other than blue (green) or pink (yellow).

## ⚠ 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.

| | |
|---|---|
| ⚠ **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. |

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.

## ⚠ Warning

**1. The compatibility of the product is the responsibility of the person who designs the equipment or decides its specifications.**
Since the product specified here is used under various operating conditions, its compatibility with specific equipment must be decided by the person who designs the equipment or decides its specifications based on necessary analysis and test results. The expected performance and safety assurance of the equipment will be the responsibility of the person who has determined its compatibility with the product. This person should also continuously review all specifications of the product referring to its latest catalogue information, with a view to giving due consideration to any possibility of equipment failure when configuring the equipment.

**2. Only personnel with appropriate training should operate machinery and equipment.**
The product specified here may become unsafe if handled incorrectly. The assembly, operation and maintenance of machines or equipment including our products must be performed by an operator who is appropriately trained and experienced.

**3. Do not service or attempt to remove product and machinery/ equipment until safety is confirmed.**
1. The inspection and maintenance of machinery/equipment should only be performed after measures to prevent falling or runaway of the driven objects have been confirmed.
2. When the product is to be removed, confirm that the safety measures as mentioned above are implemented and the power from any appropriate source is cut, and read and understand the specific product precautions of all relevant products carefully.
3. Before machinery/equipment is restarted, take measures to prevent unexpected operation and malfunction.

**4. Contact SMC beforehand and take special consideration of safety measures if the product is to be used in any of the following conditions.**
1. Conditions and environments outside of the given specifications, or use outdoors or in a place exposed to direct sunlight.
2. Installation on equipment in conjunction with atomic energy, railways, air navigation, space, shipping, vehicles, military, medical treatment, combustion and recreation, or equipment in contact with food and beverages, emergency stop circuits, clutch and brake circuits in press applications, safety equipment or other applications unsuitable for the standard specifications described in the product catalogue.
3. An application which could have negative effects on people, property, or animals requiring special safety analysis.
4. Use in an interlock circuit, which requires the provision of double interlock for possible failure by using a mechanical protective function, and periodical checks to confirm proper operation.

## ⚠ Caution

**1. The product is provided for use in manufacturing industries.**
The product herein described is basically provided for peaceful use in manufacturing industries.
If considering using the product in other industries, consult SMC beforehand and exchange specifications or a contract if necessary.
If anything is unclear, contact your nearest sales branch.

# Limited warranty and Disclaimer/Compliance Requirements

The product used is subject to the following "Limited warranty and Disclaimer" and "Compliance Requirements".Read and accept them before using the product.

## Limited warranty and Disclaimer

1. The warranty period of the product is 1 year in service or 1.5 years after the product is delivered, whichever is first. [2] Also, the product may have specified durability, running distance or replacement parts. Please consult your nearest sales branch.
2. For any failure or damage reported within the warranty period which is clearly our responsibility, a replacement product or necessary parts will be provided. This limited warranty applies only to our product independently, and not to any other damage incurred due to the failure of the product.
3. Prior to using SMC products, please read and understand the warranty terms and disclaimers noted in the specified catalogue for the particular products.

2) Vacuum pads are excluded from this 1 year warranty.
A vacuum pad is a consumable part, so it is warranted for a year after it is delivered. Also, even within the warranty period, the wear of a product due to the use of the vacuum pad or failure due to the deterioration of rubber material are not covered by the limited warranty.

## Compliance Requirements

1. The use of SMC products with production equipment for the manufacture of weapons of mass destruction (WMD) or any other weapon is strictly prohibited.
2. The exports of SMC products or technology from one country to another are governed by the relevant security laws and regulations of the countries involved in the transaction. Prior to the shipment of a SMC product to another country, assure that all local rules governing that export are known and followed.

## ⚠ Caution

**SMC products are not intended for use as instruments for legal metrology.**
Measurement instruments that SMC manufactures or sells have not been qualified by type approval tests relevant to the metrology (measurement) laws of each country.
Therefore, SMC products cannot be used for business or certification ordained by the metrology (measurement) laws of each country.

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