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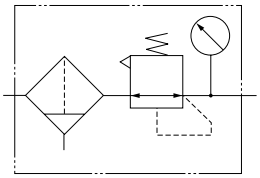
FILTER REGULATORS

FR150, FR300, FR600

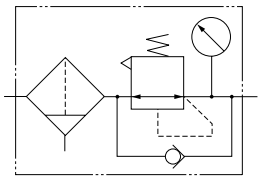


- A 5μm air filter and a small regulator are combined into a compact body.
- Pressure gauge with preset marker is standard equipment.
- Model for low pressure and model with built-in check mechanism also incorporated into the series.
- Drain cock with fitting, and auto drain type drain cock, are optional.

Symbols



●Standard type
●Low pressure type



●Built-in check mechanism type

Specifications

Item \ Model		FR150	FR300	FR600
	Standard type	FR150	FR300	FR600
	Low pressure type	FR151	FR301	FR601
	Built-in check mechanism type	FR152	FR302	FR602
Media		Air		
Port size	Rc	1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2
Filtration rating	μm	5		
Pressure setting range MPa [psi.]	Standard and built-in check mechanism types	0.05～0.83 [7～120]		
	Low pressure type	0.05～0.25 [7～36]		
Maximum operating pressure MPa [psi.]		0.93 [135]		
Proof pressure MPa [psi.]		1.47 [213]		
Operating temperature range (atmosphere and media) ℃ [°F]		5～60 [41～140]		
Drain capacity cc [in³]		15 [0.92]	55 [3.36]	90 [5.49]
Mass (with pressure gauge) kg [lb]	Standard	0.28 [0.62] (0.29 [0.64]) Note	0.46 [1.01]	0.60 [1.32]
	Auto drain type	—	0.49 [1.08]	0.64 [1.41]
Materials	Body	Aluminum die-casting	Zinc die-casting	Aluminum die-casting
	Bowl	Polycarbonate		
Standard attachments	Standard and built-in check mechanism types	Bracket, push type drain cock	Bracket, screw type drain cock, bowl guard	
		Pressure gauge G1-40 (ϕ 40×1MPa [145psi.])		
	Low pressure type	Bracket, push type drain cock	Bracket, screw type drain cock, bowl guard	
		Pressure gauge G3-40 (ϕ 40×0.3MPa [44psi.])		

Note: Figure in parentheses ( ) shows mass with bowl guard.

Order Codes

FR □ — □ — □ — □ — □ — □

Non-ion specification
Blank — Standard specification
NCU — Non-ion specification

Body model	Port size Rc 1/8	1/4	3/8	1/2	
150	01	02			Standard type
300		02	03		
600		02	03	04	
151	01	02			Low pressure type
301		02	03		
601		02	03	04	
152	01	02			Built-in check mechanism type
302		02	03		
602		02	03	04	

Filter regulator

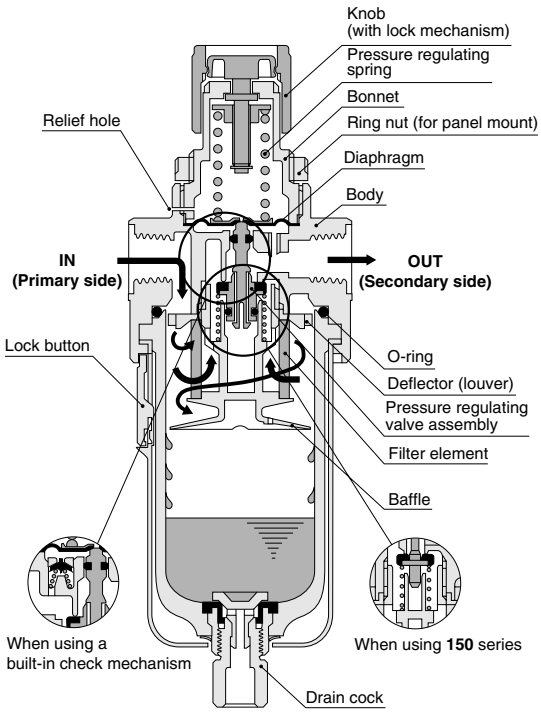
Bowl guard Note 1
Blank — No bowl guard
BG — With bowl guard

Pressure gauge specification
Blank — Standard specification Note 3 1MPa [145psi.]
G3 — Low pressure specification Note 3 0.3MPa [44psi.] (Standard for low pressure type)
E2 — Pressure gauge with electronic switch Note 3 (1MPa [145psi.])

Drain cock specification
Blank — Push or screw type drain cock
F1 — Drain cock with fitting Note 2 (Standard for auto drain type)
A — Auto drain type drain cock (Not available for C150)

Notes: 1. For **FR150** only. Standard for all models other than **FR150**.
2. Available only for **FR150** with **-BG** (bowl guard).
3. For the specifications and dimensions for the pressure gauge, and pressure gauge with electronic switches, see p.172 and 177～181.

Inner Construction

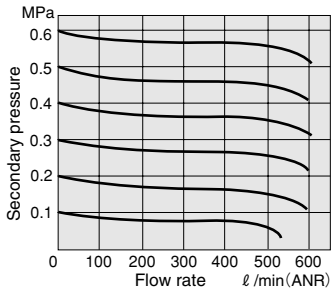


Remarks: For the optional drain cock, see p.98.
For the auto drain type, see p.73.
For the check mechanism function, see p.74.

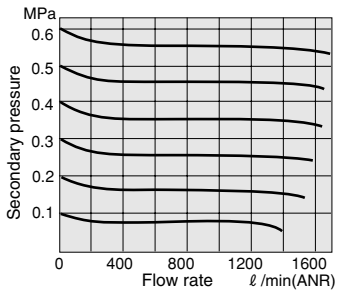
Flow Rate Characteristics

Standard and built-in check mechanism types

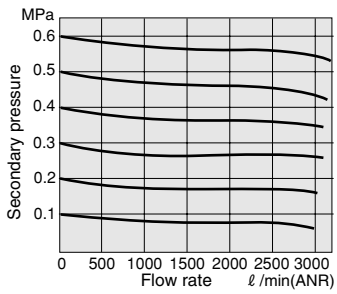
FR150, FR152



FR300, FR302

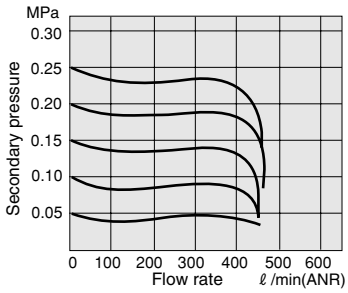


FR600, FR602

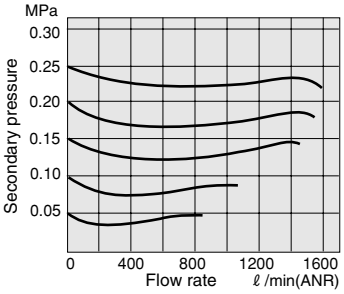


Low pressure type

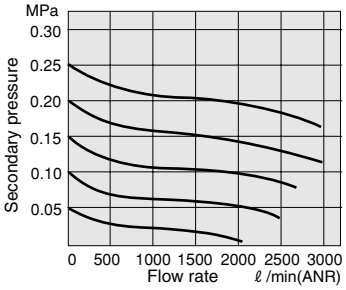
FR151



FR301



FR601



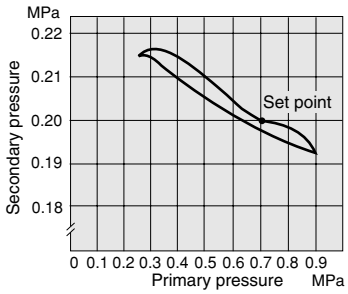
Remark: Graphs show flow rate characteristics when the primary pressure is fixed at 0.7MPa [102psi.].

Pressure Characteristics

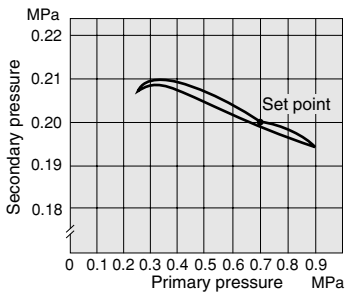
1MPa = 145psi. 1 ℓ/min = 0.0353ft³/min.

Standard and built-in check mechanism types

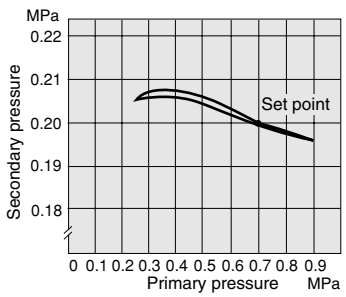
FR150, FR152



FR300, FR302

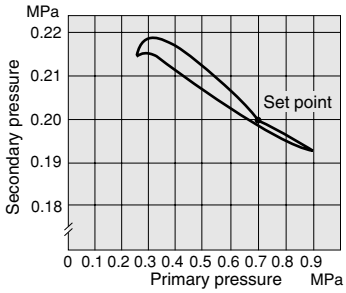


FR600, FR602

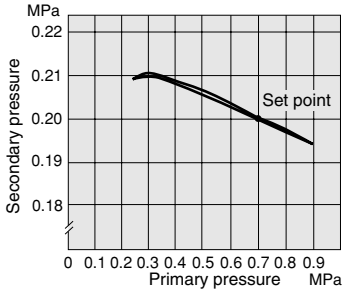


Low pressure type

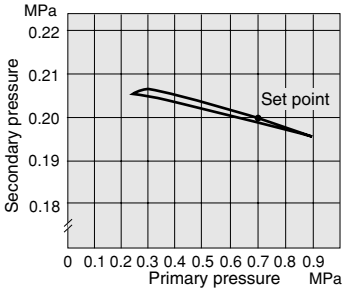
FR151



FR301



FR601

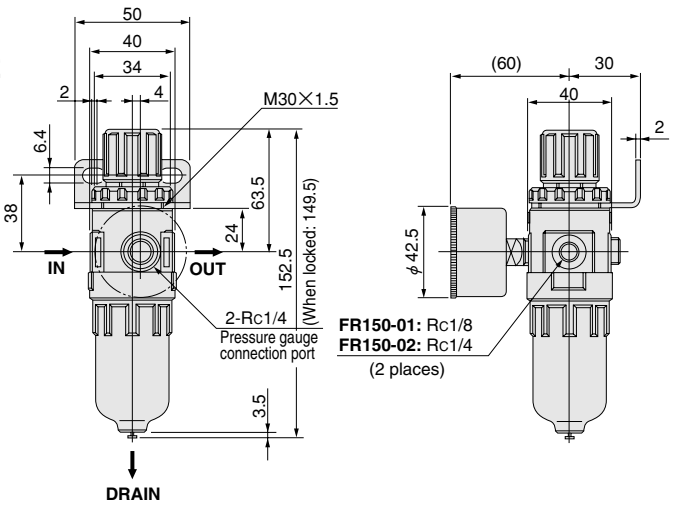


1MPa = 145psi.

Dimensions of Filter Regulators (mm)

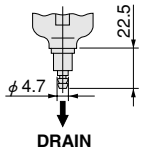
FR150
FR151
FR152

FR150



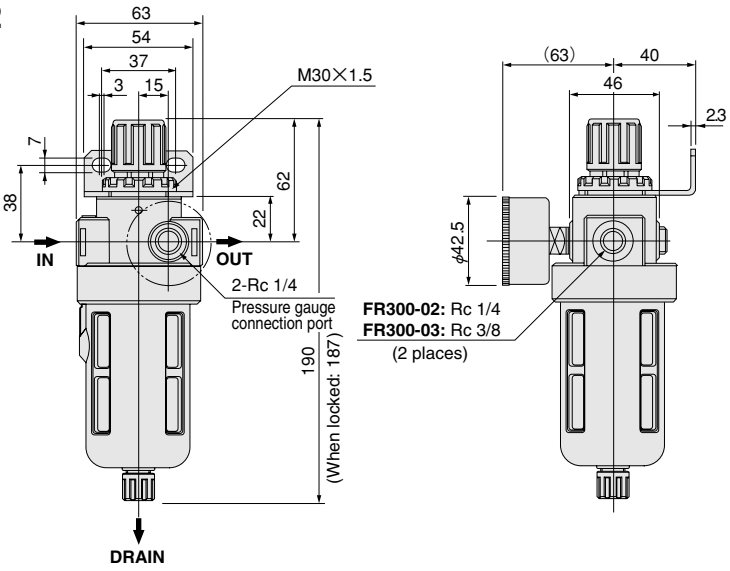
Drain cock option

●Push type with fitting: **-BG-F1**



FR300
FR301
FR302

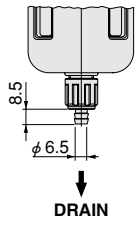
FR300



Drain cock option

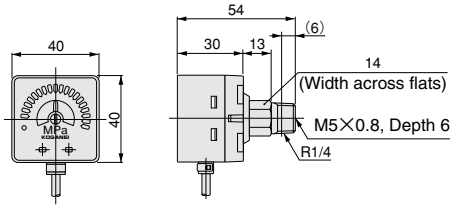
●Screw type with fitting: **-F1**

●Auto drain type: **-A**



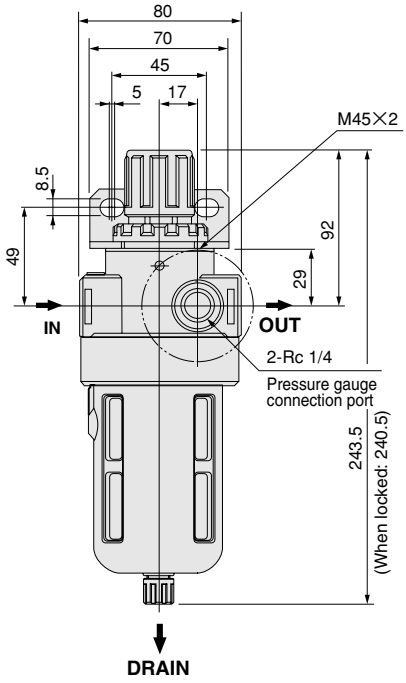
Options

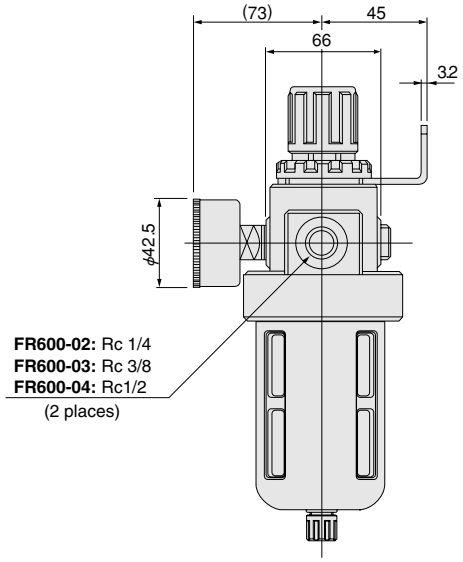
●Pressure gauge with electronic switches: **-E2**



FR600
FR601
FR602

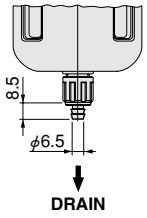
FR600





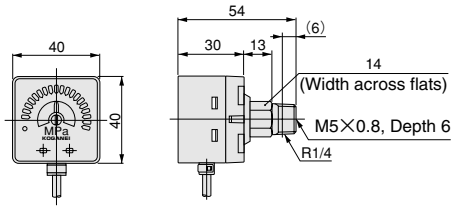
Drain cock option

- Screw type with fitting: **-F1**
- Auto drain type: **-A**



Options

- Pressure gauge with electronic switches: **-E2**



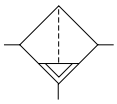
AUTO DRAINS

AD300, AD600



- Automatically drains any liquid collected inside the bowl.
- Automatically drains any liquid when pressure is lost inside the bowl.
- The drain cock is equipped with a fitting to prevent dirtying of surrounding equipment.
- Collected liquid can also be discharged manually.

Symbol



Order Codes

AD □

Body size
300 —— For 300 series
600 —— For 600 series

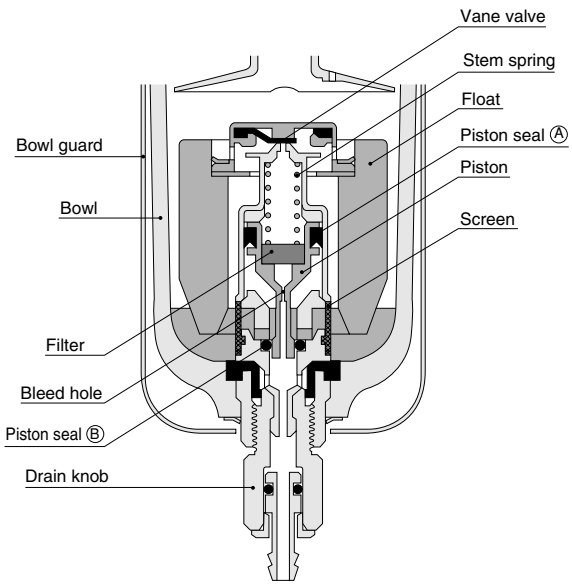
Auto drain type drain cock assembly
(with bowl and bowl guard)

Specifications

Device type		Auto drain type	Remark
F.R.L. Combinations	C150	—	Auto drain not available
	C200	**AD300**	Dealer option
	C300		
	C400	**AD600**	
	C600		
Filter regulators	FR150	—	Auto drain not available
	FR300	**AD300**	Dealer option
	FR600	**AD600**	
Air filters	F150	—	Auto drain not available
	F300	**AD300**	Dealer option
	F600	**AD600**	
Mist filters	MF300	**AD300**	Manufacturer option[Note]
	MF400	**AD600**	
	MF600		Dealer option
Micro mist filters	MMF150	**AD300**	Manufacturer option[Note]
	MMF300	**AD600**	
	MMF400		Dealer option
Drain filters	DF300	**AD300**	Manufacturer option[Note]
	DF600	**AD600**	
	DF900		Dealer option

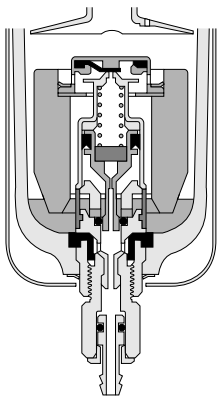
Note: Models without auto drain have different body shapes. For this reason, they cannot be converted to auto drain type even if the bowl assembly is replaced.

Inner Construction

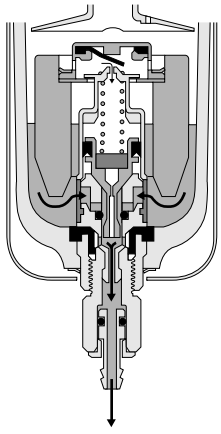


Remark: Air is released from the drain port until the supply pressure rises to 0.15MPa [22psi.]. In this situation, even rotating the drain knob will not prevent the air from bleeding out.

Condition of collected liquid



Condition of draining liquid



Operation principles

When liquid collects inside the bowl, the float rises and opens up the vane valve. Air brought to the top of the piston forces the piston downward, opening up the bottom of the piston and expelling liquid that has passed through the screen. As the liquid is drained out, the float falls, closing the vane valve. Air at the top of the piston is released through a bleed hole, and air pushes up on the piston from the bottom, returning the unit to the normal state.
If pressure inside the bowl is lost, the stem spring pushes down on the piston to drain out all of the liquid. After the liquid has been drained out, the air inside the bowl is also released.

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