

FILTER REGULATORS

FR150, FR300, FR600

- A 5 μ m 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.

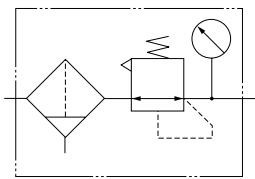


Specifications

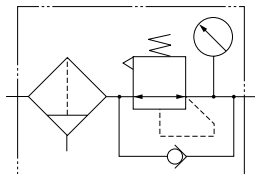
Item	Model	FR150	FR300	FR600
	Standard type			
	Low pressure type	FR151	FR301	FR601
	Built-in check mechanism type	FR152	FR302	FR602
Media		Air		
Port size	Rc	1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2
Filtration rating	μ m	5		
Pressure setting range	Standard and built-in check mechanism types	0.05~0.83 [7~120]		
	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)	$^{\circ}$ C [$^{\circ}$ F]	5~60 [41~140]		
Drain capacity	cc [in ³]	15 [0.92]	55 [3.36]	90 [5.49]
Mass (with pressure gauge)	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	
	Low pressure type	Bracket, push type drain cock	Bracket, screw type drain cock, bowl guard	
		Pressure gauge G1-40 (ϕ 40 \times 1MPa [145psi.])		
		Pressure gauge G3-40 (ϕ 40 \times 0.3MPa [44psi.])		

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

Symbols

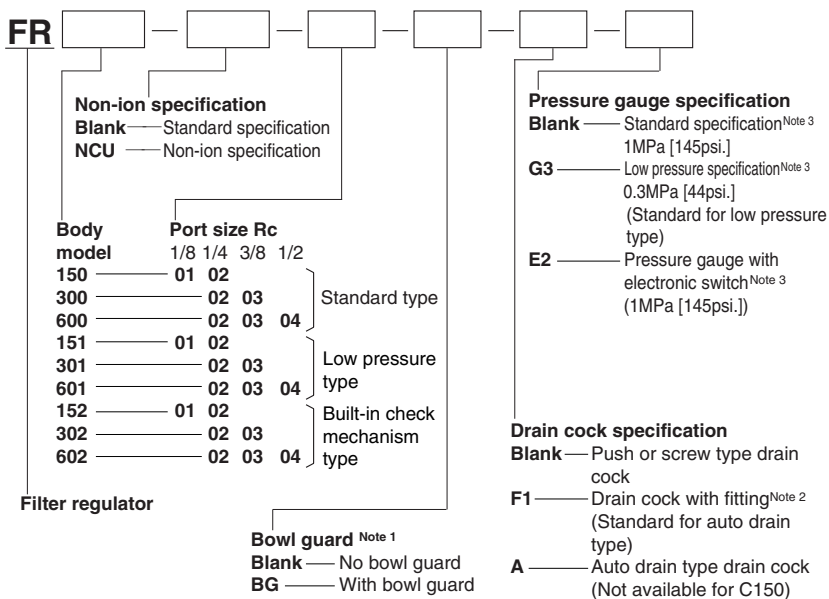


- Standard type
- Low pressure type



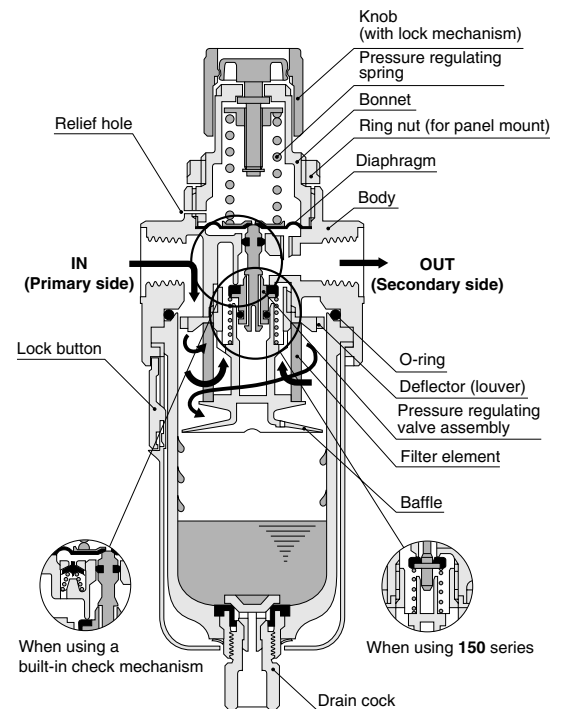
- Built-in check mechanism type

Order Codes



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

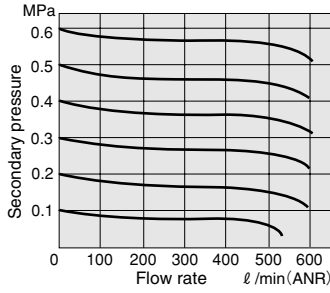


Remarks: For the optional drain cock, see p.98.
 For the auto drain type, see p.73.
 For the check mechanism function, see p.74.

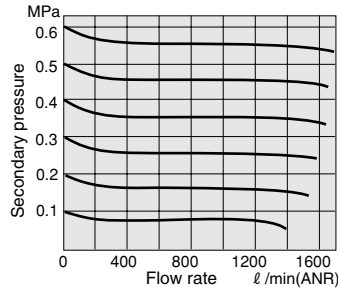
Flow Rate Characteristics

Standard and built-in check mechanism types

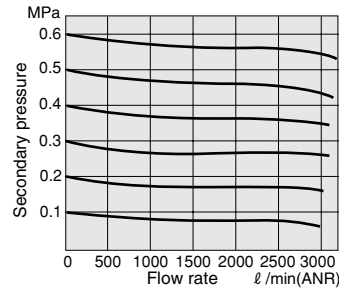
FR150, FR152



FR300, FR302

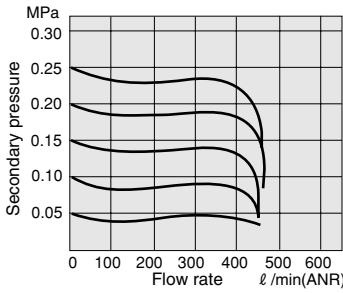


FR600, FR602

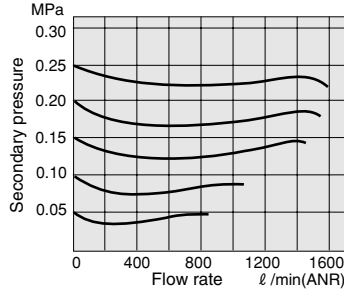


Low pressure type

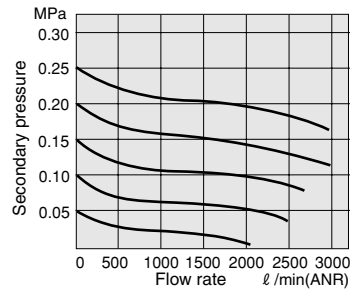
FR151



FR301



FR601



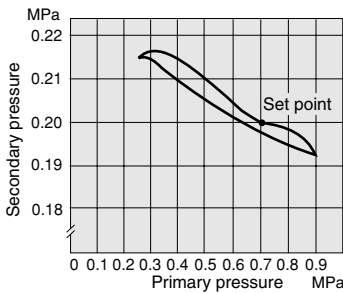
Remark: Graphs show flow rate characteristics when the primary pressure is fixed at 0.7MPa [102psi].

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

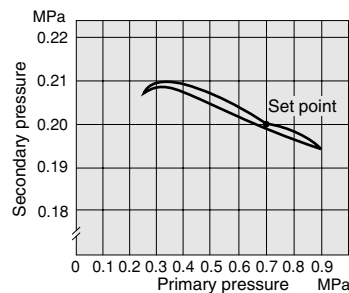
Pressure Characteristics

Standard and built-in check mechanism types

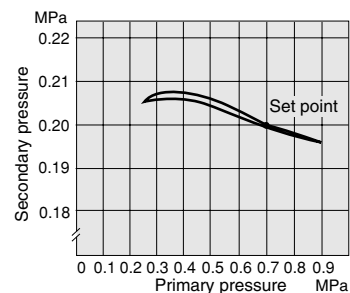
FR150, FR152



FR300, FR302

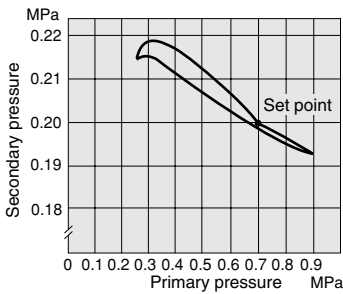


FR600, FR602

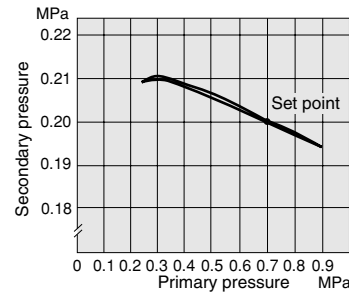


Low pressure type

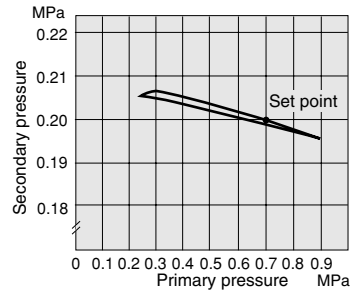
FR151



FR301



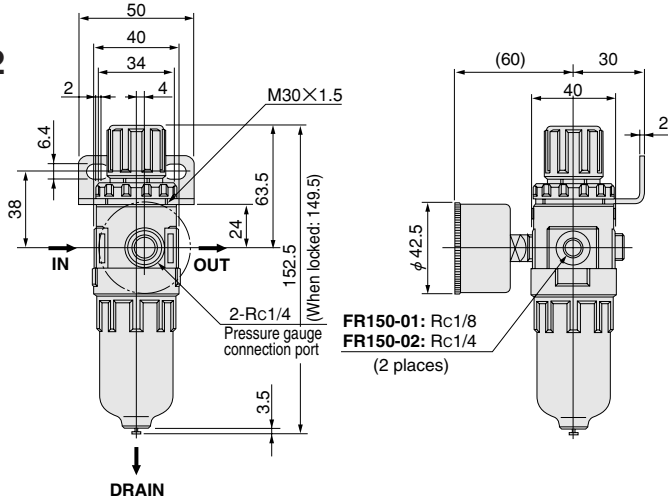
FR601



1MPa = 145psi.

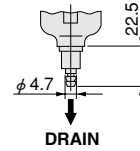
Dimensions of Filter Regulators (mm)

FR150
FR151
FR152

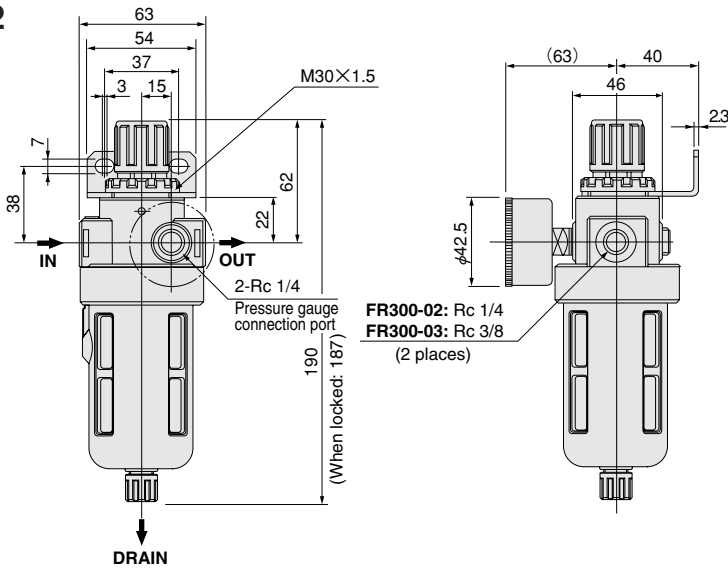


Drain cock option

● Push type with fitting: -BG-F1

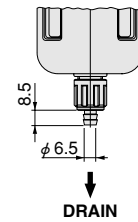


FR300
FR301
FR302



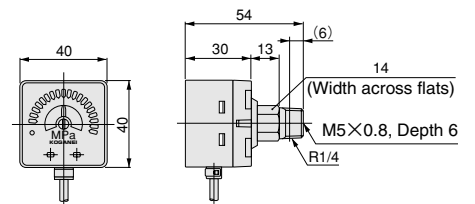
Drain cock option

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

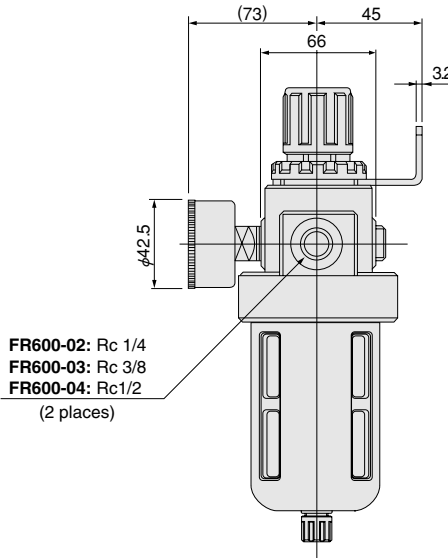
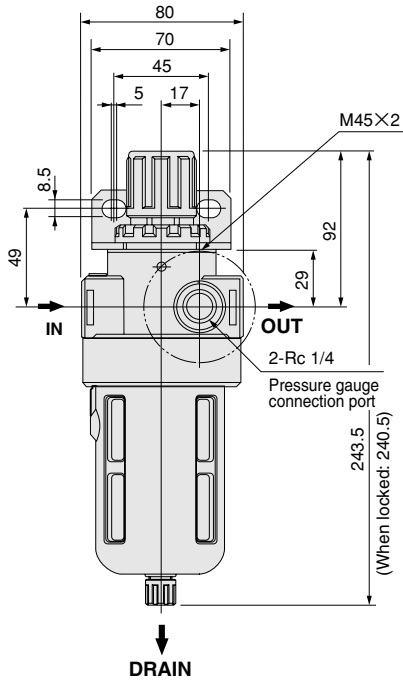


Options

● Pressure gauge with electronic switches: -E2



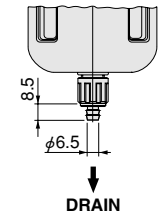
FR600
FR601
FR602



FR600-02: Rc 1/4
FR600-03: Rc 3/8
FR600-04: Rc 1/2
(2 places)

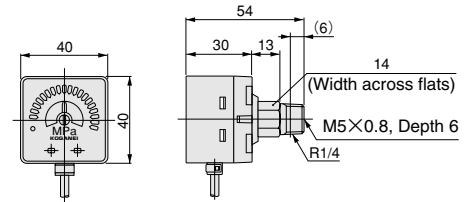
Drain cock option

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



Options

- Pressure gauge with electronic switches: -E2



AUTO DRAINS

AD300, AD600



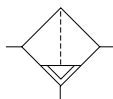
- Automatically drains any liquid collected inside the bowl.
- Automatically drains any liquid when pressure is lost inside the bowl.
- The drain cock is equipped with a fitting to prevent dirtying of surrounding equipment.
- Collected liquid can also be discharged manually.

Specifications

Device type	Auto drain type	Remark
F.R.L. Combinations	C150	—
	C200	AD300
	C300	
	C400	AD600
	C600	
Filter regulators	FR150	—
	FR300	AD300
	FR600	AD600
Air filters	F150	—
	F300	AD300
	F600	AD600
Mist filters	MF300	AD300
	MF400	AD600
	MF600	
Micro mist filters	MMF150	AD300
	MMF300	AD600
	MMF400	
Drain filters	DF300	AD300
	DF600	AD600
	DF900	

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.

Symbol



Order Codes

AD



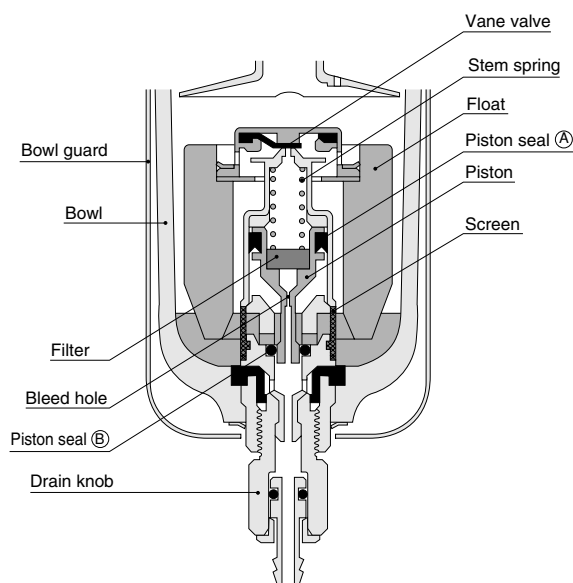
Body size

300 — For 300 series

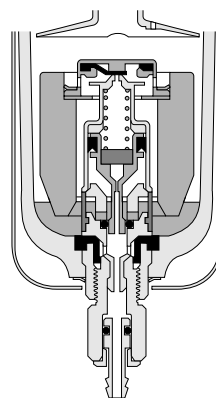
600 — For 600 series

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

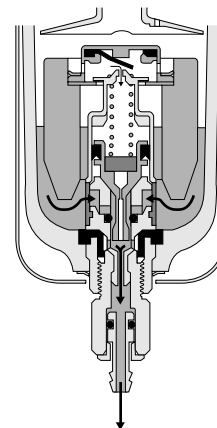
Inner Construction



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.

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.