



**7C.555-E**  
Issue 10 - 2026



## FR Series Air Filter Regulators

### Description

The FR series air filter-regulator is used to supply with filtered compressed air at constant pressure pneumatic instruments such as controllers, transmitters, pilot positioners and to supply compressed air and other not corrosive gases at small flow rate and constant pressure to bubblers for purging or measuring systems, etc.

The efficient filter inbuilt in the pressure regulator ensures the necessary degree of air purity.

A large capacity bowl and a draincock will allow collection and drain of condensate.

The operating principle of FR regulators is free from chattering or vibrations at any load.

A pressure gauge can be installed for the reduced pressure indication giving improved setting operation.

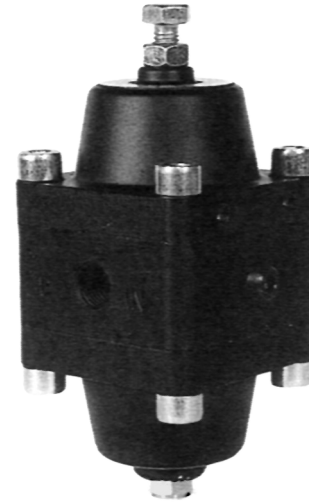
The models with connection for air exhaust recovery are in accordance with ISO 15848-1 for fugitive emissions.

There are three versions of the FR

- STD with manual water drain
- with automatic drain valve
- with connection for air exhaust recovery

The unit with automatic drain valve closes at pressures above 0.2 bar, ensuring a perfect air seal.

When the pressure drops below 0.2 bar it opens. Mounted on the bottom of the filter, it ensures complete drainage of the filter and the upstream pipes. It is extremely simple to construct and requires no special maintenance.

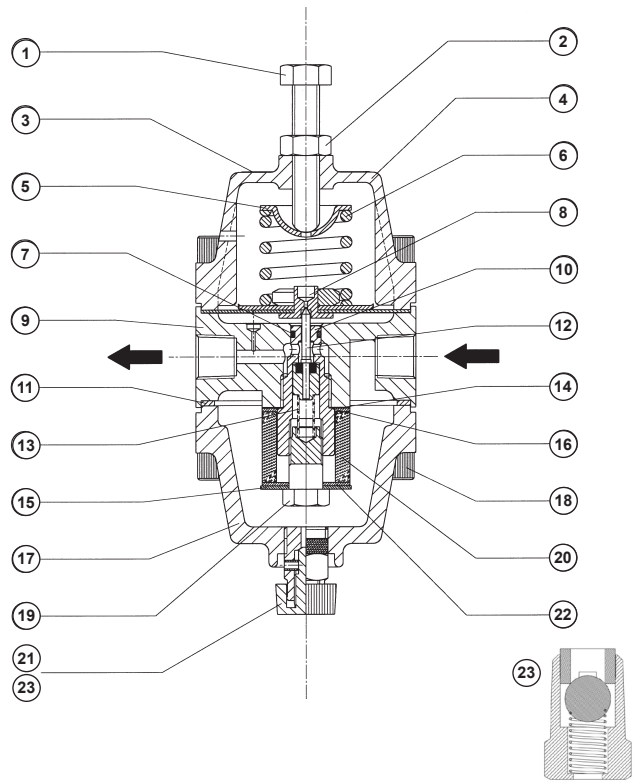


### General specifications

<b>Use destination</b>	The filter, in accordance with 2014/34/EU Directive (ATEX), is designed for use in potentially explosive atmospheres II 2 GD		
<b>Application</b>	Instrument supply air pressure control		
<b>Types, reduced pressure ranges and codes for order</b>	FR - 20	0.2 ÷ 2 bar	7.863.4801.020
	FR - 35	1.5 ÷ 4 bar	7.863.4801.035
	FR - 75	3.5 ÷ 7 bar	7.863.4801.075
	FR - 20 with automatic drain valve	0.2 ÷ 2 bar	7.863.4801.020
	FR - 35 with automatic drain valve	1.5 ÷ 4 bar	7.863.4801.035
	FR - 75 with automatic drain valve	3.5 ÷ 7 bar	7.863.4801.275
	FR - 20 with connection for air exhaust recovery	0.2 ÷ 2 bar	7.863.4801.120
	FR - 35 with connection for air exhaust recovery	1.5 ÷ 4 bar	7.863.4801.135
	FR - 75 with connection for air exhaust recovery	3.5 ÷ 7 bar	7.863.4801.175
<b>Maximum inlet pressure</b>	15 bar		
<b>Air flow</b>	from 2.5 to 9 m <sup>3</sup> /h (see table)		
<b>Maximum Kv</b>	0.7		
<b>Filtration</b>	5 µm		
<b>Materials</b>	<b>Body</b>	Die cast aluminium	
	<b>Inner valve</b>	Stainless steel	
	<b>Valve seat</b>	Brass	
	<b>Setting spring</b>	Cadmium plated steel	
	<b>Adjusting screw</b>	Chrome plated steel	
	<b>Diaphragm</b>	Synthetic rubber	
	<b>Filter cartridge</b>	Sintered bronze	
<b>Connections</b>	¼" NPT for air inlet and outlet 1/8" NPT for pressure gauge (plugged)		

### List of parts

1	Adjusting screw M8 x 45
2	Locknut M8
3	Identification tag
4	Spring bonnet
5	Upper spring seat
6	Setting spring
7	O' ring
8	Diaphragm kit
9	Base body
10	Plug support
11	Filter bowl gasket
12	Plug
13	Plug spring
14	Filter upper gasket
15	Filter cartridge washer
16	Washer
17	Filter bowl
18	Body screws M8 x 22
19	Filter fixing screw
20	Filter cartridge
21	Drain valve
22	Filter lower gasket
23	Auto drain valve



### Principle of operation

Reduced pressure value is set by spring (6) compression rate. Outlet regulated pressure, applied under the diaphragm, compresses the spring modifying the plug opening degree according to the air flow rate requested. Any undesired pressure increase exceeding the set value causes diaphragm to rise and bleed orifice at the center of the diaphragm plate to open thereby discharging over pressure. The hole drilled in the spring bonnet permits the air discharge to atmosphere.

### Adjustment of regulated pressure

Loose the locknut (2), and adjust the setting of the spring turning the screw (1) (see sectional view) clockwise to increase outlet pressure or counterclockwise to decrease outlet pressure. Tight again the locknut after adjustment.

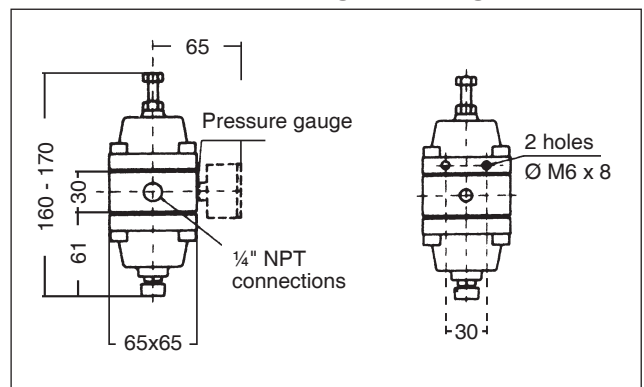
### Maximum recommended air flow with 1.4 bar outlet pressure

Inlet pressure (bar)	3	5	8	10
Flow rate (m <sup>3</sup> /h)	2.5	5	7	9

### Recommended spare parts

Description	List of parts	Code number
<b>Regulator assembly</b>	8 - 11 - 12 - 13	3.863.4750.215
<b>Filter assembly</b>	11 - 20	3.863.4750.216
<b>Drain valve</b>	23	7.528.1100.20

### Dimensions (mm) - Weight 0.75 kg



### Precautions to be taken on FR whit automatic drain valve

Install a maximum of 5 filter in series, whit automatic drain, on the same air supply line