

# Skillair® FILTER REGULATOR



This device combines a filter and a pressure regulator in a single unit. It has the dual function of filtering and regulating air from the compressor. As the filter regulator is made up of the same elements as the regulator and the filter, the performance is the same.

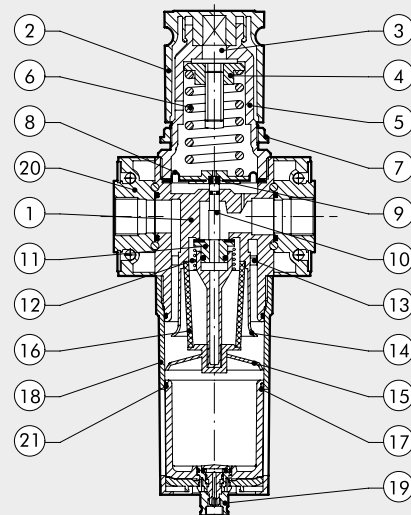
- High flow rates with low load loss.
- Special rolling diaphragm - higher flow rate, greater stability, improved sensitivity.
- Rapid relief of downstream overpressures.
- Stability of the regulated pressure as the mains pressure fluctuates.
- Maximum degree of condensate separation.
- 360° condensate level display.
- Condensate drain with manual/semi-automatic or automatic function.



TECHNICAL DATA	FR 100		FR 200			FR 300		
	1/4"	3/8"	1/4"	3/8"	1/2"	1/2"	3/4"	1"
Threaded port	1/4"	3/8"	1/4"	3/8"	1/2"	1/2"	3/4"	1"
Setting range	0 to 2 - 0 to 4 - 0 to 8 - 0 to 12		0 to 2 - 0 to 4 - 0 to 8 - 0 to 12			0 to 2 - 0 to 4 - 0 to 8 - 0 to 12		
Degree of filtration	5 - 20 - 50		5 - 20 - 50			5 - 20 - 50		
Max. input pressure	1.5 MPa - 15 bar - 217 psi		1.3 MPa - 13 bar - 188 psi			1.3 MPa - 13 bar - 188 psi		
Flow rate at 6.3 bar (0.63 MPa to 91 psi)	Nl/min	1100	1600			3500		
ΔP 0.5 bar (0.05 MPa to 7psi)	scfm	39	57			125		
Flow rate at 6.3 bar (0.63 MPa to 91 psi)	Nl/min	1600	3000			5600		
ΔP 1 bar (0.1 MPa to 14 psi)	scfm	57	71			200		
Max temperature	°C	50	50			50		
at: 1 MPa; 10 bar; 145 psi	°F	122	122			122		
Weight	kg	0.5	1			1.8		
Wall fixing screws	M4 x 50		M5 x 60			M5 x 70		
Mounting position	Vertical		Vertical			Vertical		
Pressure gauge port	1/8"		1/8"			1/8"		
Bowl capacity	cm <sup>3</sup>	22	45			75		
Drain	RMSA - SAC		RMSA - SAC - RA			RMSA - RA		
RMSA: drain with manual condensate discharge and automatic discharge at zero pressure RA: automatic drain with condensate discharge, independent of pressure and flow rate. Version conveys the draining by inserting the pipe having internal diameter 6 mm in the lower port. SAC: automatic drain with condensate discharge. <b>Operates by pressure drop – requires variable air take-offs.</b> Filtered, lubricated or unlubricated compressed air. Lubrication, if used, must be continuous. The regulator pressure must always be set upwards. For increased sensitivity, use a pressure regulator with a rated pressure as close as possible to the required value. <b>Do not take air from pressure gauge ports.</b> <b>The maximum inlet pressure for the version with RA automatic condensate drainage must not exceed 10 bar.</b>								
Fluid								
Notes on use								

## COMPONENTS

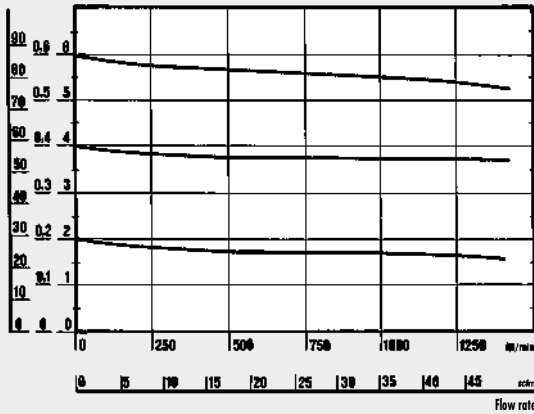
- ① Technopolymer body
- ② Technopolymer knob
- ③ OT58 brass adjusting screw
- ④ OT58 brass scroll
- ⑤ Technopolymer bell
- ⑥ Steel adjusting spring
- ⑦ Technopolymer ring nut
- ⑧ Rolling diaphragm
- ⑨ NBR relieving gaskets
- ⑩ OT58 brass stem
- ⑪ Valve with NBR vulcanized gasket
- ⑫ Stainless steel valve spring
- ⑬ Technopolymer centrifuge
- ⑭ Technopolymer baffle plug
- ⑮ Technopolymer screen
- ⑯ Sintered HDPE filter cartridge
- ⑰ Clear technopolymer glass
- ⑱ Bowl: technopolymer for FR100 and FR200, metal for FR 300
- ⑲ Drain (RMSA)
- ⑳ Zamak end plate
- ㉑ NBR gaskets



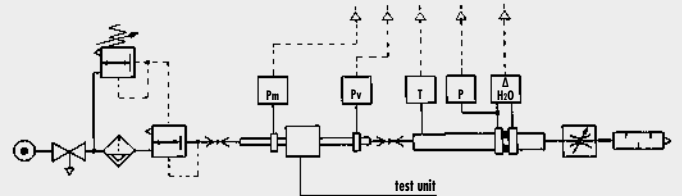
FLOW CHARTS

FR 100 1/4 - 3/8

Preset pressure  
Pm = 7 bar - 0.7 MPa - 100 psi  
psi MPa bar



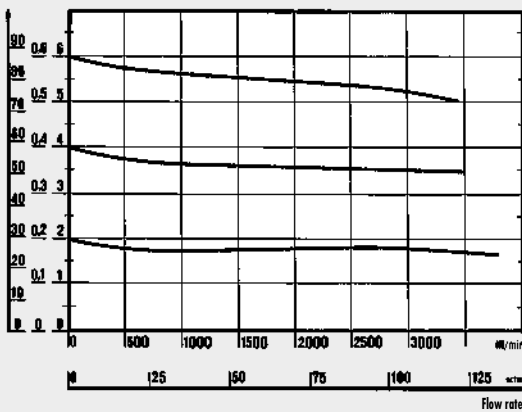
Department of Mechanics  
Turin Polytechnic



• Flow tests carried out at the Department of Mechanics, Turin Polytechnic, using the computerized test bench following CETOP RP50R recommendations (ISO DIS 6358-2-approved) with ISO 5167 diaphragm gauge.

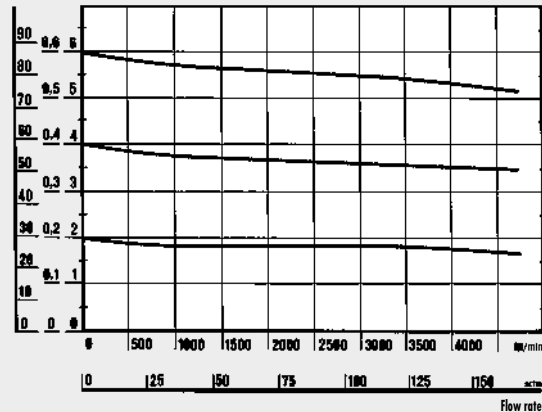
FR 200 1/4 - 3/8 - 1/2

Preset pressure  
Pm = 7 bar - 0.7 MPa - 100 psi  
psi MPa bar



FR 300 1/2 - 3/4 - 1

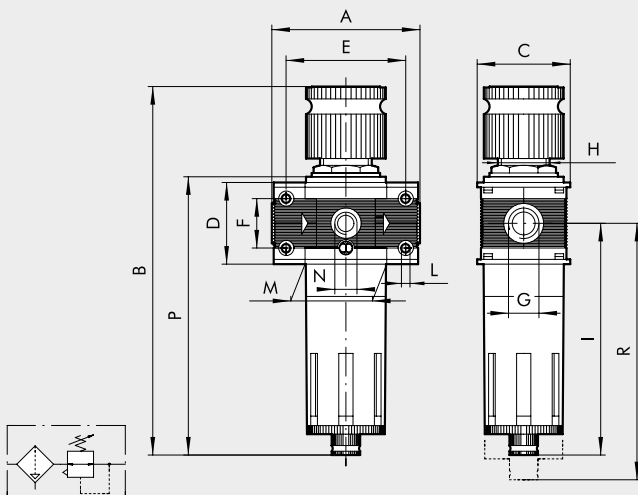
Preset pressure  
Pm = 7 bar - 0.7 MPa - 100 psi  
psi MPa bar



UNITS

Skillair® FILTER REGULATOR

DIMENSIONS



	FR 100		FR 200			FR 300		
Threaded port G	1/4"	3/8"	1/4"	3/8"	1/2"	1/2"	3/4"	1"
A	78		93.5			110		112
B	RMSA		199					278
	RA		-					282
	SAC		203					282
C	50		63			72		
D	43		55			65		
E	63		78.5			92		
F	26		36			42		
H	30 x 1.5		40x1.5			48 x 1.5		
I	122.5		147.5			162.5		
L	Hole for M4		Hole for M5			Hole for M5		
	screws		screws			screws		
M	43		55.5			65		
N (pressure gauge port)	1/8"		1/8"			1/8"		
P	RMSA		147			200		
	RA		-			204		
	SAC		151			182		204
R	RMSA		137			196		215
	RA		-			200		219
	SAC		141			200		219

**SYNOPTIC, SIZES AND VERSIONS**

FR ELEMENT	100 SIZE	1/4 THREADED PORT	5 DEGREE OF FILTRATION	02 SETTING RANGE	RMSA TYPE OF DRAIN
FR	100	1/4	5 = 5 µm 20 = 20 µm 50 = 50 µm	02 = 0 to 2 bar 04 = 0 to 4 bar 08 = 0 to 8 bar 012 = 0 to 12 bar	RMSA
		3/8			SAC
		1/4			RMSA
	200	3/8			SAC
		1/2			RA*
		1/2			RMSA
	300	3/4			RA
		1			

RMSA: drain with manual condensate discharge and automatic discharge at zero pressure.  
 RA: automatic drain with condensate discharge, independent of pressure and flow rate. (for size 300 and 400).  
 Version conveys the draining by inserting the pipe having internal diameter 6 mm in the lower port.  
 SAC: automatic drain with condensate discharge.  
**Operates by pressure drop – requires variable air take-offs.** (for size 100 and 200)  
 \* For Skillair® 200 with RA, please contact our sales assistance department.

**ORDERING CODES**

Code	Description	Code	Description	Code	Description
<b>Skillair® 100 FILTER REGULATOR</b>		<b>Skillair® 200 FILTER REGULATOR</b>		<b>Skillair® 300 FILTER REGULATOR</b>	
3283007A	FR 100 5 08 RMSA without end plates	3483007A	FR 200 5 08 RMSA without end plates	4483004A	FR 300 5 08 RMSA without end plates
3283008A	FR 100 20 08 RMSA without end plates	3483008A	FR 200 20 08 RMSA without end plates	4483005A	FR 300 20 08 RMSA without end plates
3283009A	FR 100 50 08 RMSA without end plates	3483009A	FR 200 50 08 RMSA without end plates	4483006A	FR 300 50 08 RMSA without end plates
3283010A	FR 100 5 012 RMSA without end plates	3483010A	FR 200 5 012 RMSA without end plates	4483007A	FR 300 5 012 RMSA without end plates
3283011A	FR 100 20 012 RMSA without end plates	3483011A	FR 200 20 012 RMSA without end plates	4483008A	FR 300 20 012 RMSA without end plates
3283012A	FR 100 50 012 RMSA without end plates	3483012A	FR 200 50 012 RMSA without end plates	4483009A	FR 300 50 012 RMSA without end plates
3283031A	FR 100 5 08 SAC without end plates	3483031A	FR 200 5 08 SAC without end plates	4483013A	FR 300 5 08 RA without end plates
3283032A	FR 100 20 08 SAC without end plates	3483032A	FR 200 20 08 SAC without end plates	4483014A	FR 300 20 08 RA without end plates
3283033A	FR 100 50 08 SAC without end plates	3483033A	FR 200 50 08 SAC without end plates	4483015A	FR 300 50 08 RA without end plates
3283034A	FR 100 5 012 SAC without end plates	3483034A	FR 200 5 012 SAC without end plates	4483016A	FR 300 5 012 RA without end plates
3283035A	FR 100 20 012 SAC without end plates	3483035A	FR 200 20 012 SAC without end plates	4483017A	FR 300 20 012 RA without end plates
3283036A	FR 100 50 012 SAC without end plates	3483036A	FR 200 50 012 SAC without end plates	4483018A	FR 300 50 012 RA without end plates
3283007	FR 100 1/4 5 08 RMSA	3483007	FR 200 1/4 5 08 RMSA	4483004	FR 300 1/2 5 08 RMSA
3283008	FR 100 1/4 20 08 RMSA	3483008	FR 200 1/4 20 08 RMSA	4483005	FR 300 1/2 20 08 RMSA
3283009	FR 100 1/4 50 08 RMSA	3483009	FR 200 1/4 50 08 RMSA	4483006	FR 300 1/2 50 08 RMSA
3283010	FR 100 1/4 5 012 RMSA	3483010	FR 200 1/4 5 012 RMSA	4483007	FR 300 1/2 5 012 RMSA
3283011	FR 100 1/4 20 012 RMSA	3483011	FR 200 1/4 20 012 RMSA	4483008	FR 300 1/2 20 012 RMSA
3283012	FR 100 1/4 50 012 RMSA	3483012	FR 200 1/4 50 012 RMSA	4483009	FR 300 1/2 50 012 RMSA
3283031	FR 100 1/4 5 08 SAC	3483031	FR 200 1/4 5 08 SAC	4483013	FR 300 1/2 5 08 RA
3283032	FR 100 1/4 20 08 SAC	3483032	FR 200 1/4 20 08 SAC	4483014	FR 300 1/2 20 08 RA
3283033	FR 100 1/4 50 08 SAC	3483033	FR 200 1/4 50 08 SAC	4483015	FR 300 1/2 50 08 RA
3283034	FR 100 1/4 5 012 SAC	3483034	FR 200 1/4 5 012 SAC	4483016	FR 300 1/2 5 012 RA
3283035	FR 100 1/4 20 012 SAC	3483035	FR 200 1/4 20 012 SAC	4483017	FR 300 1/2 20 012 RA
3283036	FR 100 1/4 50 012 SAC	3483036	FR 200 1/4 50 012 SAC	4483018	FR 300 1/2 50 012 RA
3383007	FR 100 3/8 5 08 RMSA	3583007	FR 200 3/8 5 08 RMSA	4583004	FR 300 3/4 5 08 RMSA
3383008	FR 100 3/8 20 08 RMSA	3583008	FR 200 3/8 20 08 RMSA	4583005	FR 300 3/4 20 08 RMSA
3383009	FR 100 3/8 50 08 RMSA	3583009	FR 200 3/8 50 08 RMSA	4583006	FR 300 3/4 50 08 RMSA
3383010	FR 100 3/8 5 012 RMSA	3583010	FR 200 3/8 5 012 RMSA	4583007	FR 300 3/4 5 012 RMSA
3383011	FR 100 3/8 20 012 RMSA	3583011	FR 200 3/8 20 012 RMSA	4583008	FR 300 3/4 20 012 RMSA
3383012	FR 100 3/8 50 012 RMSA	3583012	FR 200 3/8 50 012 RMSA	4583009	FR 300 3/4 50 012 RMSA
3383031	FR 100 3/8 5 08 SAC	3583031	FR 200 3/8 5 08 SAC	4583013	FR 300 3/4 5 08 RA
3383032	FR 100 3/8 20 08 SAC	3583032	FR 200 3/8 20 08 SAC	4583014	FR 300 3/4 20 08 RA
3383033	FR 100 3/8 50 08 SAC	3583033	FR 200 3/8 50 08 SAC	4583015	FR 300 3/4 50 08 RA
3383034	FR 100 3/8 5 012 SAC	3583034	FR 200 3/8 5 012 SAC	4583016	FR 300 3/4 5 012 RA
3383035	FR 100 3/8 20 012 SAC	3583035	FR 200 3/8 20 012 SAC	4583017	FR 300 3/4 20 012 RA
3383036	FR 100 3/8 50 012 SAC	3583036	FR 200 3/8 50 012 SAC	4583018	FR 300 3/4 50 012 RA
		3683007	FR 200 1/2 5 08 RMSA	4683004	FR 300 1 5 08 RMSA
		3683008	FR 200 1/2 20 08 RMSA	4683005	FR 300 1 20 08 RMSA
		3683009	FR 200 1/2 50 08 RMSA	4683006	FR 300 1 50 08 RMSA
		3683010	FR 200 1/2 5 012 RMSA	4683007	FR 300 1 5 012 RMSA
		3683011	FR 200 1/2 20 012 RMSA	4683008	FR 300 1 20 012 RMSA
		3683012	FR 200 1/2 50 012 RMSA	4683009	FR 300 1 50 012 RMSA
		3683031	FR 200 1/2 5 08 SAC	4683013	FR 300 1 5 08 RA
		3683032	FR 200 1/2 20 08 SAC	4683014	FR 300 1 20 08 RA
		3683033	FR 200 1/2 50 08 SAC	4683015	FR 300 1 50 08 RA
		3683034	FR 200 1/2 5 012 SAC	4683016	FR 300 1 5 012 RA
		3683035	FR 200 1/2 20 012 SAC	4683017	FR 300 1 20 012 RA
		3683036	FR 200 1/2 50 012 SAC	4683018	FR 300 1 50 012 RA

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