

Model FC/D- Avtomatični filtri Dual Media

Filtri za bistrenje, z avtomatičnim protismernim pranje filtrirnega elementa odstranjujejo trdne in suspendirane delce, ki povzročajo motnost vode. Filtrirni element je sestavljen iz več plasti izbranega sferoidnega kvarcita različnih granulacij in plasti antracita. Sferoidalna oblika posameznih kvarcitnih delcev vodnih kapljic ne razbije in tako olajšuje pretok vode ter dosega večjo učinkovitost filtriranja tudi ob višjih pretokih.

Model FAC/D

Aktivnoogljikovi filtri z avtomatičnim protismernim pranjem filtrirnega elementa. Filtrirni element je sestavljen iz ene plasti aktivnega oglja z veliko stopnjo granulacijo in plasti izbranega kvarcita. Pretoki navedeni na naslednji strani so bili doseženi pri kontaktnem času 2 min, ki je zahtevani čas za deklorifikacijo, ki je najpogostejši namen uporabe tega filtra.

Skupne lastnosti

Posoda je iz karbonskega jekla, v notranjosti zaščitena z epoksidno smolo primerno za uporabo v prehrabeni industriji, nanešeno po predhodnem peskanju plašča po švedski lestvici Sa3. Zunanja protikislinska poliuretanska zaščita je pravtako nanešena po predhodnem peskanju po švedski lestvici Sa3.. Kvarcit sferoidne oblike, z razliko od klasičnega, ne razbije posameznih kapljic vode, s čimer olajša pretok vode in omogoča učinkovitejšo filtriranje tudi pri večjih pretokih. Protismerno pranje filtrirnih mas je avtomatično v nastavljenih časovnih zamikih. Vode za protismerno pranje, ki vsebujejo predhodno zadržane snovi, so usmerjene v iztok. Integralno avtomatiko sestavlja 5 hidropnevmatskih membranskih ventilov, katerih odpiranje in zapiranje med tremi fazami delovanja (protismerno pranje-bistrenje-delovanje) je uravnavano preko skupine elektroventilov in časovnega elektronskega programatorja. (24h - 7 dni), na katerem programiramo tako dan, kakor uro pranja. (*) Vpogled v odčitek dveh manometrov (na vstopu in izstopu iz filtra) omogoča kontrolo padcev tlaka in s tem programiranje intervalov pranja

Polavtomatično delovanje

Ne glede na nastavljeno programiranje, se lahko s pritiskom na stikalo, v kateremkoli trenutku pranje aktivira tudi ročno. Samo pranje filtrirnega elementa se opravi povsem avtomatično.

RAZPOLOŽLJIVI AVTOMATIZMI

FC/D – FAC/D: Časovno upravljanje regeneracije.

FC/DP – FAC/DP: Regulacija regeneracije v odvisnosti od razlike v vstopnem in izstopnem tlaku v filtrirnem elementu.

Verzija “Dual”

Programator za verzijo “DUAL” je sposoben usklajevati delovanje dveh vzporedno vezanih filtrov. Senzorji zaznavajo vstopni in izstopni tlak in razlike. Regeneracija se sproži najprej na prvem filtru, ko se ta očisti pa se sproži regeneracija še na drugem filtru vezan v sistemu.



Protikorozijska zaščita posode – Anticorrosion coated vessel

1)	Poliuretanski protikislinski zaščitni plašč – Acid-proof polyuretanic painting
2), 4)	Peskanje Sa3 švedske lestvice – Sand blasting Sa3 swedish scale
3)	Karbonsko jeklo – Carbon steel
5)	Epoksidna smola, primerna za prehrabeno industrijo

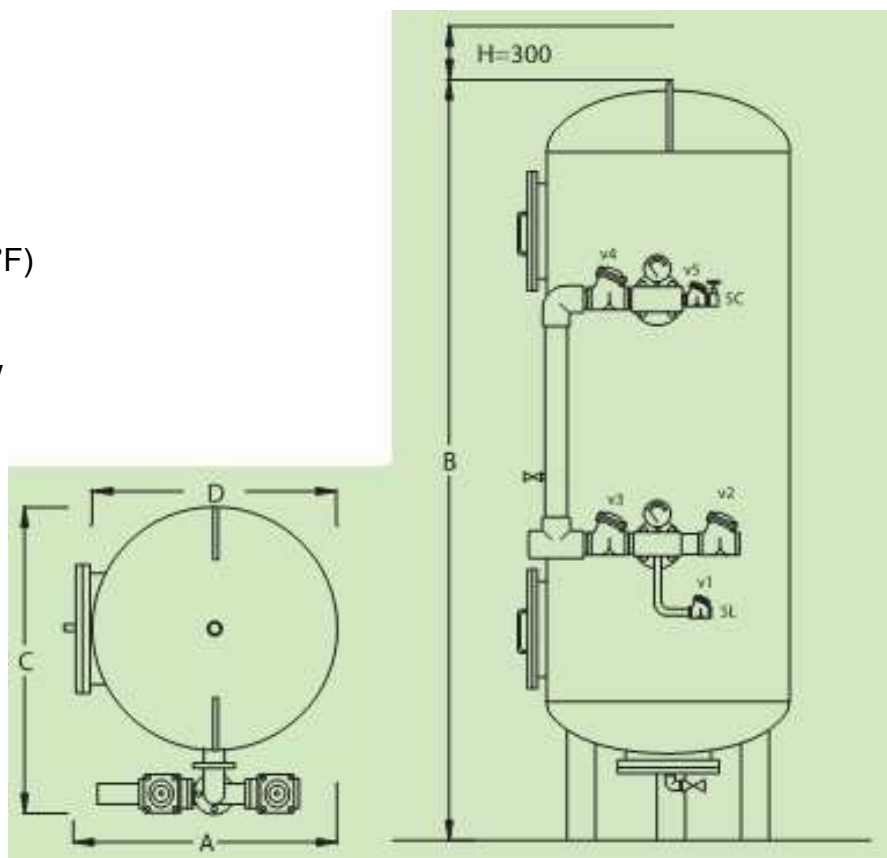
DIMENZIJE (mm) & TEŽA – DIMENSIONS (mm) & WEIGHT

		A mm.	B mm.	C mm.	D mm.	Priključki - Connections		Teža (*) - Weight (*) kg	
FC	FAC					FC	FAC	FC	FAC
05/D	-	800	2100	800	450	1 1/2"	-	400	-
08/D	05/D	850	2100	900	500	1 1/2"	1 1/2"	470	320
11/D	08/D	900	2100	1000	600	1 1/2"	1 1/2"	620	410
15/D	11/D	950	2100	1000	700	2"	1 1/2"	900	560
20/D	15/D	1000	2150	1100	800	2"	2"	1100	710
25/D	20/D	1100	2150	1200	900	2 1/2"	2 1/2"	1350	900
30/D	25/D	1250	2350	1300	1000	DN80	2 1/2"	1650	100
40/D	30/D	1350	2350	1400	1100	DN80	DN80	2000	1300
45/D	-	1450	2350	1500	1200	DN80	-	2350	-
50/D	40/D	1550	2350	1700	1300	DN100	DN80	2750	1650
60/D	50/D	1650	2350	1750	1400	DN100	DN100	3100	2000
70/D	-	1750	2350	1850	1500	DN100	-	3500	-
80/D	60/D	1850	2450	1950	1600	DN100	DN100	4000	2600

Delovni tlak: 2,0 ÷ 8,0 bar (200 ÷ 800 kPa)
Working pressure

Delovna temperatura: 5 ÷ 40°C (41 ÷ 104°F)
Working temperature

Električno napajanje: 220 V 50/60 Hz 10w
Power Supply



TEHNIČNE KARAKTERISTIKE – TECHNICAL FEATURES

	Nominalni pretok - Service flow	Max pretok – Peak flow	Pretok pri pranju – Backwash flow rate	Filtrirni element – Filtering bad			
				kvarcit – quartz sand (kg)			Antracit (l.) - anthracyte
				0,4÷0,7(*)	1÷2(*)	2÷3(*)	
FC 05/D	3,2	6,5	4,8	100	50	35	40
FC 08/D	4,0	8,0	6,0	120	60	50	50
FC 11/D	5,7	11,0	8,5	200	80	50	70
FC15/D	7,8	15,0	11,0	250	100	100	100
FC 20/D	10,0	20,0	15,0	300	150	100	130
FC 25/D	13,0	26,0	20,0	400	200	150	150
FC 30/D	16,0	32,0	24,0	500	200	200	200
FC 40/D	20,0	40,0	30,0	600	300	200	250
FC 45/D	23,0	46,0	35,0	700	350	250	300
FC 50/D	27,0	53,0	40,0	800	400	300	350
FC 60/D	31,0	62,0	16,0	900	450	350	400
FC 70/D	35,0	70,0	53,0	1100	500	400	450
FC 80/D	40,0	80,0	60,0	1250	600	450	500

(*) granulometrija v mm
(*) grain – size in mm

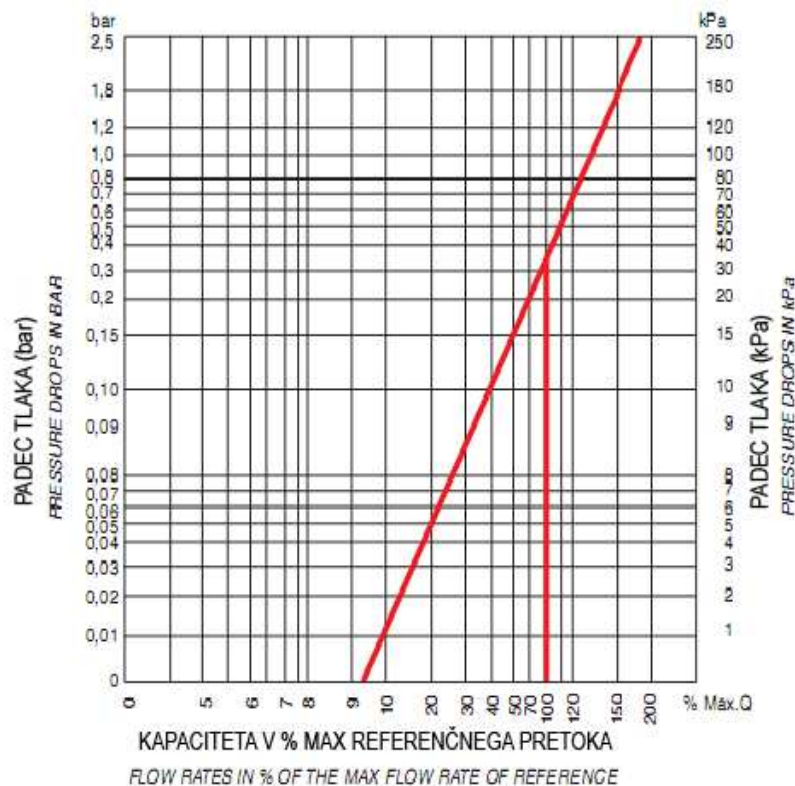
Hitrost nominalnega pretoka:
Linear flow at service flow
rate: 20 m³/m²/h

Hitrost max. pretoka:
Linear flow at peak flow
rate: 40 m³/m²/h

	Max pretok - Peak flow	Pretok pri pranju – Backwash flow rate	Filtrirni element – Filtering bad	
	m ³ /h	m ³ /h	kvarcit – quartz sand (kg)	Aktivno oglje – Activated carbon
FAC 05/D	5,0	5,0	50	200
FAC 08/D	8,0	8,0	60	280
FAC 11/D	11,0	11,0	80	350
FAC15/D	15,0	15,0	100	500
FAC 20/D	20,0	20,0	150	650
FAC 25/D	25,0	25,0	200	800
FAC 30/D	30,0	30,0	200	1000
FAC 40/D	40,0	40,0	300	1350
FAC 50/D	50,0	50,0	400	1600
FAC 60/D	60,0	60,0	450	2000

Graf na desni prikazuje padce tlaka v bar in kPa glede na različne kapacitete, ki so prikazani kot % max pretoka vode.

The diagram show the pressure drop, in bar and kPa, at different flow rates, which are indicated as % of max flow rate of reference.



Mod. FC/D- Automatic Dual Media filters – special features

Automatic filters to remove turbidity and suspended solids from water. The media filter consists of 3 layers of selected spheroidal quartz-sand, with different grain-sizes and a top layer of anthracite to improve filtration. The special spheroidal shape of the single grain of quartz-sand avoids the crushing of the single water drops, as happens with other commonly used sand, allowing an easy flushing of water and a better filtration feature even with higher linear flow.

Mod. FAC/D- Automatic activated carbon filters – special features

Automatic activated carbon filters with automatic backwash of the filtering beds. The media filter consists of a layer of granular activated carbon with high special surface supported by a layer of selected spheroidal quartz-sand. The max flow rate listed at the following page are referred to a contact time of 2 minutes, which is the one required for dechlorination, the most common application of these filters.

Common features

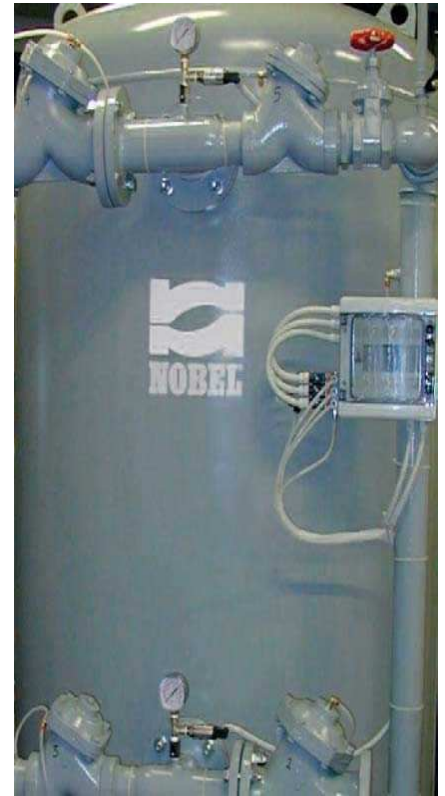
The filtering bed is automatically backwashed using water only. The working of the unit is controlled by an electronic programmer that allows to run the backwashing of the filter according to time schedule; it is allowed to set how often (1 up to 7 days) and the time of the day when the regeneration starts (FC/D – FAC/D models). For model FC/D-DP and FAC/D DP, the regeneration can be programmed also according to the pressure drop across the filter. In both cases, the time of the several phases of the regeneration can be also adjusted, in order to fit the working of the unit to the special application and to avoid useless waste of water for regeneration. The hydraulic manifold featuring the regeneration includes 5 membrane valves, hydro and/or pneumatically controlled; the manifold is completely interconnected and mounted on the front of the filter vessel. The membrane valves are controlled by means of pilot solenoid valves, that can be also manually driven in case of power failure. All construction materials are non-toxic and suitable for drinking water. The vessel is made in carbon steel with internal lining in epoxy coating approved for drinking water, applied after sand blasting at Sa3 grade of Swedish scale and external lining in polyurethane painting applied after sand blasting as above; the vessel is complete of internal distribution systems with nozzles in polypropylene, man-holes, pressure gauges. The membrane valve body is made in cast-iron and the membrane in EPDM; the media filter (selected quartz-sand and special catalytic media) are approved for drinking water treatment.

Semi-automatic working

An additional regeneration can be manually started at any moment regardless of the scheduled programme.

FC/D - FAC/D: Automatic by time scheduled control.

The filter is complete with a control panel with an electronic timer, allowing to set how often (weekly basis, 1-7 days) and the time of day (24 hours) the regeneration starts. A built-in buffer battery allows to save the programmed data even in case of power failure. A free voltage contact is available, upon request, for remote report of running regeneration; it can be used, for example, to control the working of a pump or other equipments (optional).



FF/D-DP- FAC/DP: Automatic by pressure drop and/or time scheduled control.

The filter is equipped with two pressure sensors in stainless steel and an electronic computerized microprocessor programmer (micro PLC), monitoring the pressure values and starting the regeneration when the ΔP set-point value is reached. The regeneration can always be programmed according to time schedule. The display of the programmer shows the following parameters:

- **current value of inlet pressure**
- **current value of outlet pressure**
- **current value of pressure drop**
- **set-point of max pressure drop**
- **phase of regeneration (if running) with indication of elapsed time and adjusted time of the phase**

A free voltage contact is also available for remote report of running regeneration; it can be used, for example, to control the working of a pump or other equipments (optional). The regeneration start can be inhibited by an external free voltage contact. A built-in buffer battery allows to save the programmed data even in case of power failure

Dual system

The “dual system” programmer can control the working of two filters, installed on parallel and working in the same time, with same features of above described FF/D- DP filters. The pressure drop across the filtering beds is monitored by the pressure sensors plumbed on the in/out manifolds of the filters. The filters will be regenerated one after the other one, with an adjustable delay.



Allestimento FC/D DP – FAC/D DP:

Prikaz avtomatskih enot, merilci tlaka in particolare del gruppo automatismo, displej programatorja.

Model FC/D DP – FAC/D DP:

details of the automatic group, pressure sensors and display