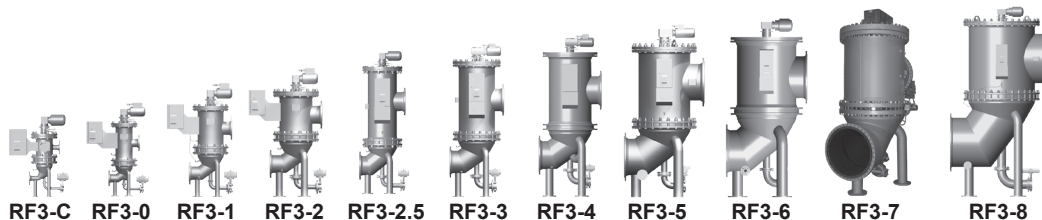


A close-up, grayscale photograph of a diamond-shaped mesh filter material. The mesh is composed of dark, thick lines forming a grid of diamond-shaped openings. The background is a light, out-of-focus surface. The overall image has a technical and industrial feel.

Section 1: **BACFLUSHING FILTERS**

Automatic Backflushing Filters



The RF3 Automatic Backflushing Filters are complete filtration systems. These unique products are not only performing the task of filtering low viscosity liquids, but also the cleaning of their array of reusable conical filter elements via PLC controlled mechanism.

Since particles in process fluids have an influence on the quality of the end product and they increase the attrition rate of system components, proper protection through efficient filtration is needed. The RF3 self-cleaning filters provide this protection with uninterrupted operation.

The RF3 automatic self-cleaning filters are used for extracting particulate contaminants. The rugged design and automatic self-cleaning capability give this filter product the ability to make a major contribution to operational reliability, reduction of maintenance costs and overall efficiency in many process systems.

The RF3 filters have a special housing design that incorporates an array of filter elements. The special Slotted Tube and SuperMesh™ elements with pore sizes from 25 to 3000 micron ensure highly effective removal of particulate contamination from the process medium. The adjustable differential pressure switch triggers the self-cleaning function. Each individual filter element is cleaned with filtrate in the reverse flow direction while being totally isolated from the rest of the element array. This is how the RF3 can continue to filter without any interruption of the filtration process during the backflush cycle.

The RF3 filters are a relatively simple mechanical design as illustrated here. Pre-filtered liquid enters the inlet port and exits through the outlet port after passing through the conical element array. The flow direction of the elements is from inside out, and particles are collected on the smooth interior surfaces for easy cleaning. As the level of contamination increases, so does the differential pressure across the filter.

When does the self-cleaning function occur?

As the amount of contamination collected in the elements increases, so does the differential pressure. When the differential pressure reaches the set point, a signal is sent to the PLC inside the control panel, which initiates the backflush cycle. The cleaning cycle can also be started by the adjustable timer located inside the control panel, or by simply pressing the cycle start button located on the front of the control panel.

How does the self-cleaning system operate?

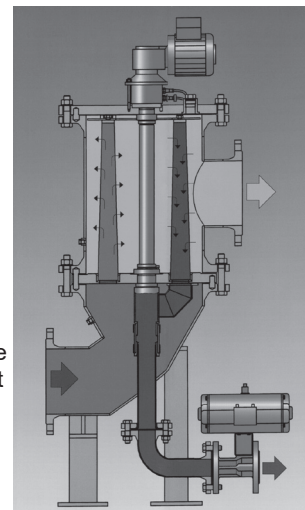
The process starts with the geared motor located on top of the filter positioning the backflush arm beneath the first element to be cleaned. Once in position, the control panel opens the backflush valve, which creates a pressure gradient that reverses the flow of filtrate through this single element. The reverse flow cleans the element of the collected particles. The valve then closes and the motor positions the arm beneath the next element to be cleaned. The backflush cycle is complete when all of the elements in the array have been cleaned.

What about the filter elements?

The conical shaped filter elements used in the RF3 self-cleaning filters are specially designed for isokinetic filtering and backflushing. This tapered design results in an even flow distribution, low pressure drop and a uniform distribution of contaminate inside the elements. The advantages: longer time between backflush cycles, less loss of process fluid and more complete and efficient cleaning of the conical wedge wire elements.

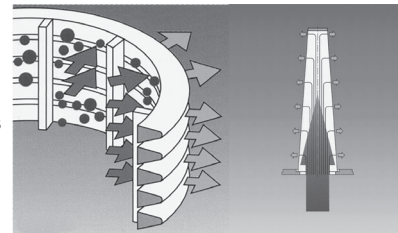
Are there any other unique features?

The PLC control has some benefits that aren't immediately visible. During the self-cleaning operation, the backflush valve is in position under the element being cleaned for just a few seconds. The backflush valve is opened and closed rapidly, causing a "pulsation" of filtrate through the filter element openings. These pressure surges produce a superior cleaning effect in a shorter time. The result is fewer cleaning cycles, shorter duration and lower consumption of filtrate.

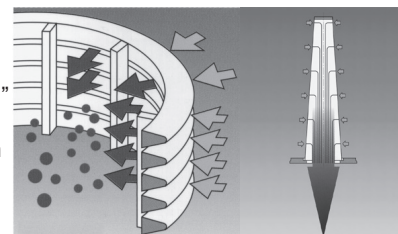


Direction of Flow

Filtration Mode



Backflush Mode



Automatic Backflushing Filters

Some of the RF3 Benefits:

- Excellent price to performance ratio
- High filtration quality
- Low occurrence of service staff intervention
- Low operating cost
- Low maintenance cost
- Continuous operation of process
- High flow rate for maximum performance
- Low pressure drop
- Low energy consumption
- Superior self-cleaning functionality
- Application specific design
- Efficient design / small footprint envelope
- Simple installation
- Maximum use of filtration surfaces for best efficiency
- Patented element design
- 25 to 3000 micron filtration

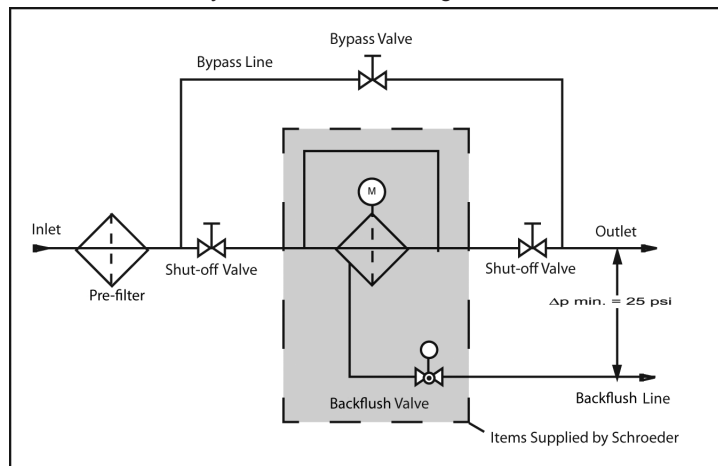


Filter Elements

Installation Guidelines

- Minimum inlet pressure of 35 psi
- Maximum 2 psi clean pressure differential between inlet and outlet
- Minimum 25 psi between the outlet and the backflush line (preferably the backflush line goes to atmospheric pressure)

System Installation Diagram



Industries Served

Automatic Backflushing Filters

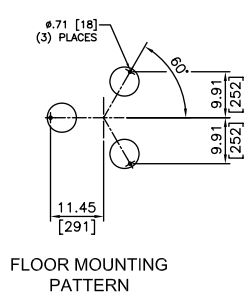
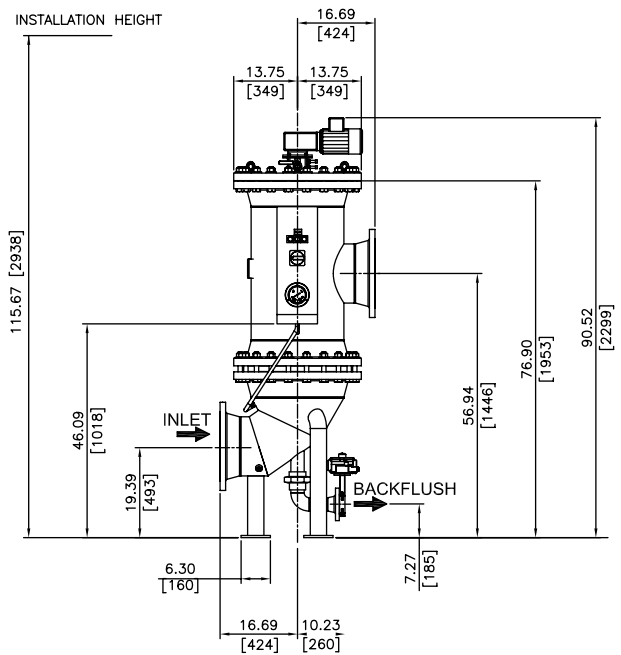
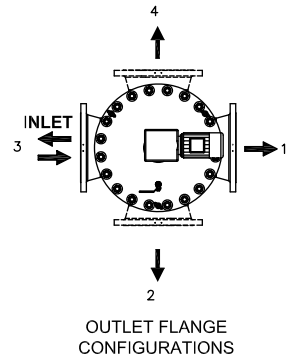
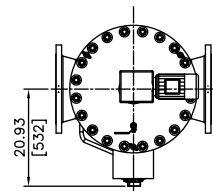
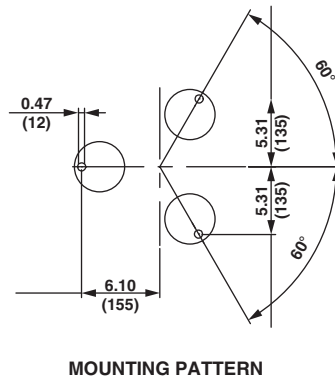
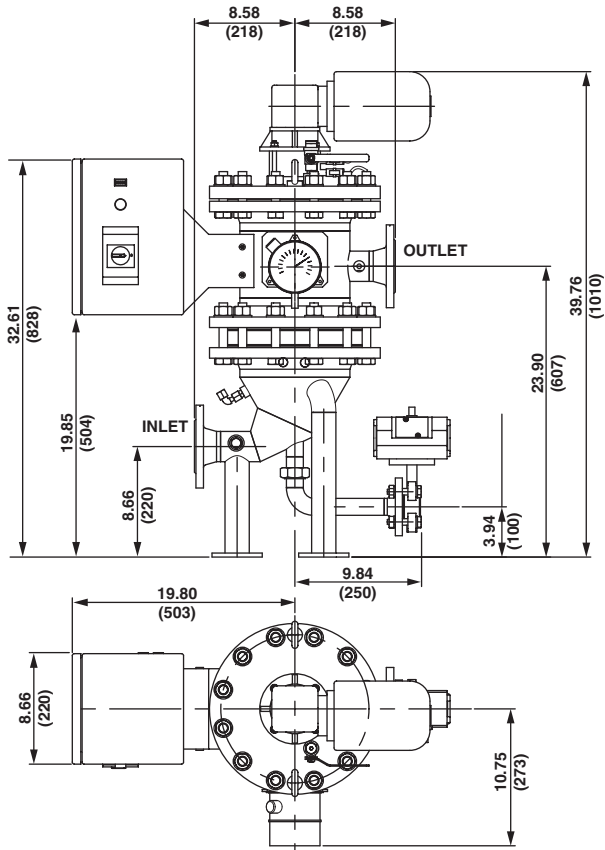
Specifications

2.1. STANDARD CONFIGURATIONS		• ASME Code Design (with or without U-Stamp)
2.1.1 Control Parameters	2.1.9 Internal Corrosion Protection	2.2.3 Flange Connections
• EPT: electro-pneumatic cyclic control	• 2K epoxy paint	• ANSI
• EU: electrical circulation control (electric only)	• 2K polyurethane coating	• JIS
• PT: pneumatic cyclic control with timer function (pneumatic only)	• rubber lined	2.2.4 Housing Materials
2.1.2 Connection Voltages	2.1.10 Differential Pressure Gauge	• Duplex
• 3 x 400V / 50 Hz with or without neutral wire	• Aluminum	• Superduplex
• 3 x 500V / 50 Hz without neutral wire	• Stainless steel	• Various qualities of stainless steel
• 3 x 230V / 50 Hz with or without neutral wire	• Brass	2.2.5 Cover Plate Lifting Device
• 3 x 415V / 50 Hz without neutral wire	• Chemical seal	• Carbon steel
• 3 x 415V / 60 Hz with neutral wire	2.1.11 Filtration Ratings	• Stainless Steel
• 3 x 460V / 60 Hz without neutral wire	• 25 µm, 40 µm and 60 µm Super Mesh	• Cover plate lifting device for retrofitting
• 3 x 440V / 60 Hz without neutral wire	• 50 µm to 3000 µm slotted tube	2.2.6 Material of Internal Parts and Elements
• 3 x 525V / 50 Hz without neutral wire	2.1.12 Electrical Protection Class	• Duplex
• 3 x 575V / 60 Hz without neutral wire	• IP55	• Superduplex
• 3 x 690V / 50 Hz without neutral wire	2.1.13 Pressure Ranges	• Various qualities of stainless steel
• 1 x 230V / 50 Hz	• 6 bar	• Elements with magnetic filtration technology
• 1 x 230V / 60 Hz	• 10 bar	• Superflush element technology
• 1 x 115 • / 60 Hz	• 16 bar	2.2.7 External Corrosion Protection
2.1.3 Housing Calculation / Flange Connections	• 25 bar	• Multiple layer coatings
• AD 2000 / PED 97/23/EC Pressure Equipment Directive	• 40 bar	• Special paints / coatings for offshore use
• DIN flanges	• 64 bar (on request)	• Colors to customer specification
2.1.4 Variable Flange Geometry	• 100 bar (on request)	2.2.8 Internal Corrosion Protection
• Inlet/outlet and backflushing line, rotatable	2.2 OPTIONAL VERSIONS <i>There are a range of optional versions available for the AutoFill® RF3.</i>	• Glass flake lining
2.1.5 Housing Materials	2.2.1 Control / Electrical Components / Voltage Supply	• Special paints / coatings according to customer specifications
• Carbon steel	• Manual version of the AutoFill® RF3	2.2.9 Explosion Protection
• Cast iron (only for sizes CG and DG)	• PLC control	• ATEX accprdomg to Directive 94/9/EC
• Stainless steel	• Filter without control for integration into customer's PLC	2.2.10 Documentation
2.1.6 Material of Internal Parts	• Filter interlocking for parallel operation	• Manufacturer's test certificates
• Stainless steel	• UL/CSA approved controls and components	• Material certificates 3.1 according to DIN EN 10204
2.1.7 Material of Elements	• Special IP protection classes	• GOST certificate
• Stainless steel	• Safe in tropical conditions	• 3rd parties (TÜV, ABS, Lloyds, etc.)
2.1.8 External Corrosion Protection	• Customized special solutions	• Welding procedure specifications (WPS) / Procedure Qualification Record (PQR)
• 2-coat primer (not required for stainless steel housing)	2.2.2 Housing Manufacture	• Inspection plan

Many others available on request.
Futher optional models on request.

Backflushing Filter AutoFit® RF3

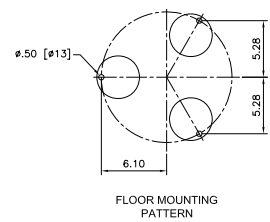
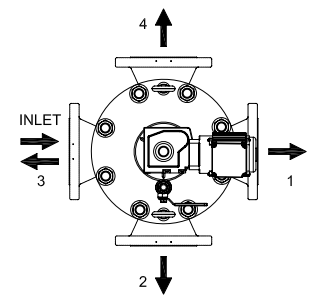
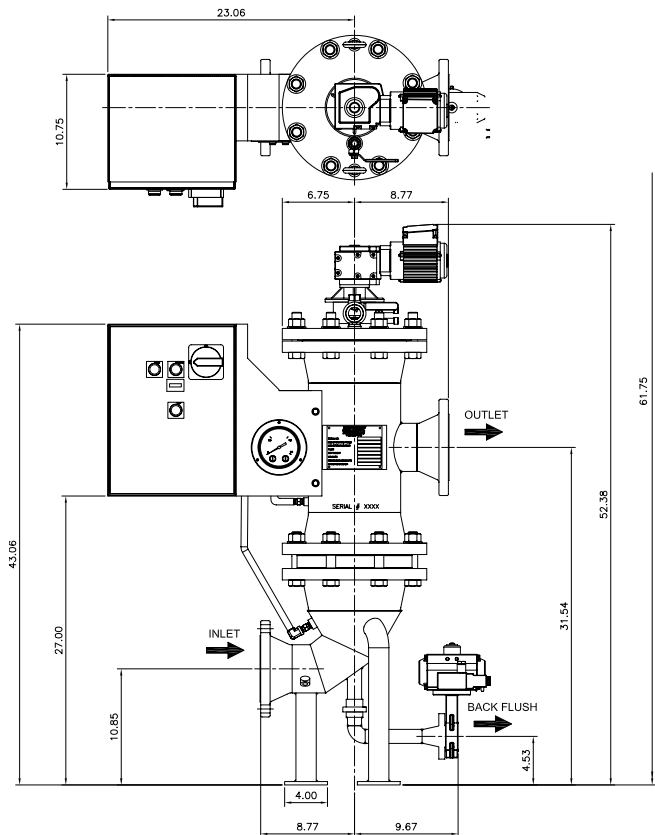
RF3



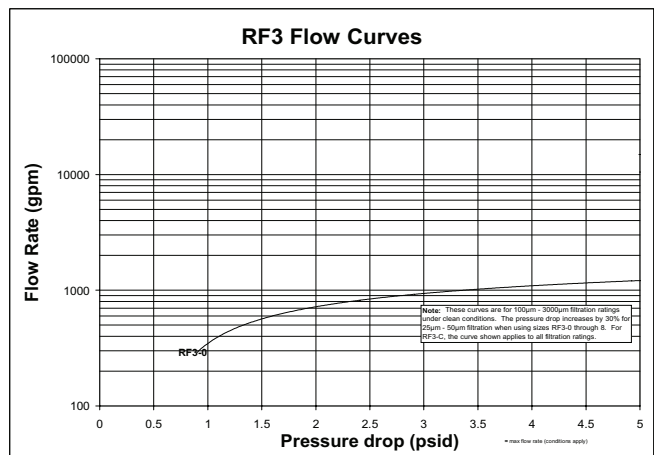
Dimensions

RF3 — RF3-8

- RF5
- RF7
- RF10
- RF4-1
- RF4-2
- RF4-3
- RF12
- RF14
- BTU
- ATF-1
- ATF-2
- ATF-2.5
- ATF-3
- ATF-3.5
- ATF-4
- PLF1
- PLF2
- PVD



Pressure Drop Information Based on Flow Rate and Viscosity



Backflushing Filter AutoFilt® RF3

RF3

RF3 —
RF3-8

How to Build a Valid Model Number for a RF3:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	BOX 9	BOX 10	BOX 11
RF3										

Example: NOTE: One option per box

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	BOX 9	BOX 10	BOX 11
RF3	5	EPT1	NG	N	1	3	X	KS1000	5	12345678

= RF3-1-EPT1-NG-N-1-3-X/
KS1000-5-12345678

BOX 1		BOX 2			BOX 3					
Type		Filter Size			Type of Control / Input Supply Voltage					
AutoFilt®		C = DN 50 PN16 1 = DN 100 PN10 ¹⁾ 2 = DN 150 PN10 2.5 = DN 250 PN10 3 = DN 300 PN10 4 = DN 400 PN6 5 = DN 500 PN6 6 = DN 600 PN6 7 = DN 700 PN6 8 = DN 800 PN6			EPT = Electric pneumatic cycle control EPU = Electro-pneumatic circulation control EU = Electrical circulation control PT = Pneumatic cyclic control PTZ = Pneumatic cyclic control with time override M = Manual 0 = Without control, all consumers on terminal strip / block 1 = 3 x 400V / N / PE 50Hz 2 = 3 x 400V / N / PE 50Hz 3 = 3 x 500V / X / PE 50Hz 4 = 3 x 230V / N / PE 50Hz 5 = 3 x 230V / X / PE 50Hz 6 = 3 x 415V / X / PE 50Hz 7 = 3 x 415V / N / PE 60Hz 8 = 3 x 460V / X / PE 60Hz					
BOX 4		BOX 5			BOX 6					
Housing Material / Corrosion Protection		Material, Back-Flush Valve			Differential Pressure Measurement					
N = Carbon steel, external primer (RAL 7040) Carbon steel, external primer NM = (RAL 7040), internal 2K epoxy paint Carbon steel, external primer NP = (RAL 7040), internal 2K highly cross-linked polyurethane paint NG = Carbon steel, external primer (RAL 7040), internal rubber lining E = Stainless steel, V4A group A = For ANSI flanges, add A J = for JIS flanges, add J		N = Butterfly valve: housing cast iron-coated, disc stainless steel (only up to $p_{max} \leq 16$ bar!) B = Butterfly valve: housing cast iron-coated, disc bronze steel (only up to $p_{max} \leq 16$ bar!) S = Ball valve: ball stainless steel, housing up to nom. size 50 mm carbon steel E = Ball valve: ball stainless steel, housing stainless steel (from $p_{max} > 16$ bar!)			1 = Differential pressure gauge — pressure chamber aluminum (only up to $p_{max} = 25$ bar!) 2 = Differential pressure gauge — pressure chamber stainless steel, V2A group 3 = Differential pressure gauge — with diaphragm seal, stainless steel, V4A group 4 = Differential pressure gauge — pressure chamber brass 5 = HDA 4700 stainless steel, V2A group (standard AutoFilt® Control Unit) 6 = HDA 4300 Duplex (standard for AutoFilt® Control Unit)					
BOX 9		BOX 7			BOX 8					
Filter Element Set		Flange Position			Modification Number					
KS = Conical wedge wire filter elements (50 - 3000 μ m) KD = Conical SuperMesh filter elements (25/40/60 μ m) SKS = Conical wedge wire filter elements with SuperFlush Coating SKD = Conical SuperMesh filter elements with SuperFlush Coating		Filter outlet 1 = opposite/filter inlet (standard) Filter outlet offset 2 = 90° clockwise to standard Filter outlet offset 3 = by 180° clockwise to standard Filter outlet offset 4 = by 270° clockwise to standard			X = the latest version is always supplied					
BOX 10		BOX 11			BOX 11					
Size of Filter Element Set		Special Number			BOX 11					
Identical to size of filter		For special models (number is allocated after technical clarification)			For special models (number is allocated after technical clarification)					

Only for EPT, EPU and EU

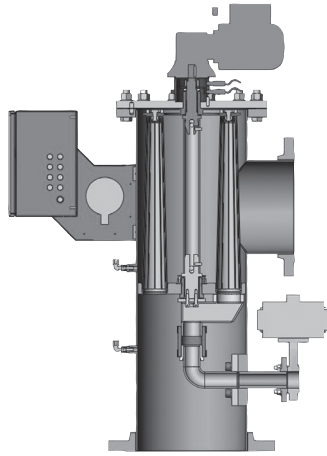
NOTES:
 Box 3. Needs to have control type and voltage selected ex. EPT8.
 Box 4. can contain two options ex. NMA.
 Note. If ANSI flanges are not specified DIN style will be provided.

RF5
 RF7
 RF10
 RF4-1
 RF4-2
 RF4-3
 RF12
 RF14
 BTU
 ATF-1
 ATF-2
 ATF-2.5
 ATF-3
 ATF-3.5
 ATF-4
 PLF1
 PLF2
 PVD

748-18,480
gpm
170-4200
L/min

87-150 psi
6-10 bar

The automatic backflushing filter AutoFilt® RF5 has proven its reliable performance successfully for many years in a wide range of different industries. The new backflushing filter series AutoFilt® RF5 a new budget-priced filter series with a cost-optimized geometry that offers the same reliable filter performance in a variety of applications.

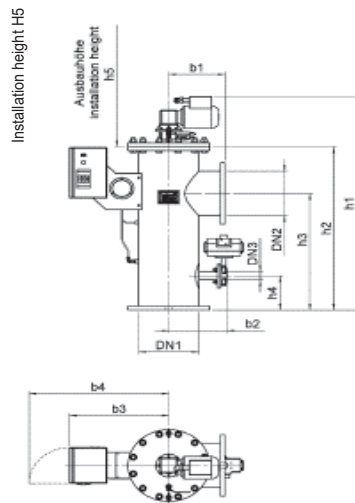


The function of the AutoFilt® RF5 is similar to the AutoFilt® RF3:

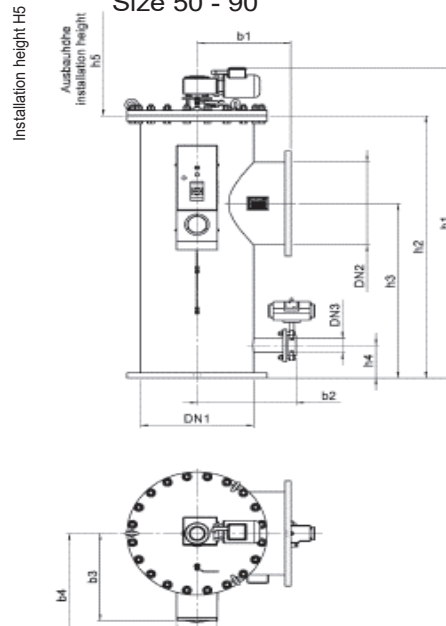
The fluid to be filtered flows through the slotted tube filter elements of the backflushing filter, passing from the inside to the outside. Contamination particles then collect on the smooth inside of the filter elements.

As the level of contamination increases, the differential pressure between the contaminated and clean sides of the filter increases. When the differential pressure reaches its pre-set value, backflushing starts automatically.

Size 25 - 40



Size 50 - 90



Dimensions

Size	DN1 in (mm)	DN2 in (mm)	DN3 in (mm)	H1 in (mm)	H2 in (mm)	H3 in (mm)	H4 in (mm)	H5 in (mm)	B1 in (mm)	B2 in (mm)	B3 in (mm)	B4 in (mm)
25	9.8 (250)	7.9 (200)	1.6 (40)	47.7 (1212.5)	35.9 (912.5)	24.6 (625)	7.1 (180)	21.7 (550)	11.8 (300)	10.8 (275)	20 (508)	28.7 (728)
30	11.8 (300)	9.8 (250)	1.6 (40)	51.7 (1313.5)	39.4 (1001.5)	28.1 (715)	8.3 (210)	21.7 (550)	11.8 (300)	12.4 (314)	21 (533)	29.6 (753)
40	15.7 (400)	11.8 (300)	2.6 (65)	74.4 (1890.5)	62 (1575.5)	40.6 (1030)	7.1 (180)	41.3 (1050)	14.6 (370)	15 (380)	23 (575)	31.3 (795)
50	19.7 (500)	15.7 (400)	2.6 (65)	74.4 (1888.5)	62.4 (1585.5)	41.3 (1050)	7.5 (190)	41.3 (1050)	17.16 (435)	17.3 (440)	19.1 (485)	27.8 (705)
60	23.6 (600)	19.7 (500)	3.1 (80)	75 (1905.5)	63.3 (1608.5)	42.1 (1070)	7.9 (200)	41.3 (1050)	19.9 (505)	21 (534)	21.3 (540)	29.9 (760)
70	27.6 (700)	23.6 (600)	3.1 (80)	88.1 (2238.5)	74.5 (1903.5)	48.6 (1235)	7.9 (200)	53.1 (1350)	22.4 (570)	22.8 (580)	23.3 (593)	32 (813)
90	35.4 (900)	31.5 (800)	3.9 (100)	91.7 (2328.5)	78.5 (1993.5)	52.2 (1325)	8.9 (225)	53.1 (1350)	27.2 (690)	27.2 (690)	27.5 (698)	36.1 (918)

Backflushing Filter AutoFit® RF5

RF5

Size	Pressure Rating psi / (bar)	Inlet	Outlet	Back flushing	Filtration Area in ² / cm ²	Flow Range gpm (L/min.)
25	145 (10)	DN 250	DN 200	DN 40	942 (6120)	748-1408 (170-320)
30	145 (10)	DN 300	DN 250	DN 40	1255 (8160)	1276-1980 (290-450)
40	87 (6)	DN 400	DN 300	DN 65	2603 (16920)	1760-3302 (6667-12500)
50	87 (6)	DN 500	DN 400	DN 65	3905 (25380)	2860-5280 (650-1200)
60	87 (6)	DN 600	DN 500	DN 80	7809 (50760)	4400-8360 (1000-1900)
70	87 (6)	DN 700	DN 600	DN 80	10920 (70980)	6600-12320 (1500-2800)
90	87 (6)	DN 900	DN 800	DN 100	18200 (118300)	11440-18480 (2600-4200)

Technical Data

RF3 —
RF3-8

RF5

RF7

RF10

RF4-1

RF4-2

RF4-3

Filter Model Number Selection

RF12

RF14

BTU

ATF-1

ATF-2

ATF-2.5

ATF-3

ATF-3.5

ATF-4

PLF1

PLF2

PVD

How to Build a Valid Model Number for a RF3:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	BOX 9	BOX 10	BOX 11
RF5										

Example: NOTE: One option per box

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	BOX 9	BOX 10	BOX 11
RF5	40	EPT8	NMA	N	5	3	2	ES300	40	ASME

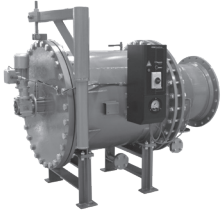
= RF3-40-EPT8-NMA-N-5-3-2-ES300-40-ASME
N-5-3-2/ KS1000-40-ASME

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5
Filter Series RF5	Filter Size 25 30 40 50 60 70 90	Drive Control / Connecting Voltage EPZ = Electric pneumatic cycle control EZ = Electric Control EPT = Electro-pneumatic cyclic control PT = Pneumatic cyclic control PTZ = Pneumatic cyclic timed control 7 = 3X415V/N/PE 60Hz 8 = 3X460V/X/PE 60Hz 9 = 3X440V/X/PE 60Hz E = 1X230V/N/PE 60 Hz F = 1X110V/N/PE 60Hz	Housing Material & Coating N = Standard Steel outside primed Standard Steel outside NM = primed, inside metallogal painted E = Stainless Steel A = with ANSI-flanged, additional A at the end	Shut Off Valve Material N = Standard Steel B = Bronze
BOX 6 Differential Pressure Gauge 1 = Pressure Chamber Aluminum 3.258302 2 = Pressure Chamber Stainless Steel 1.4305 3 = With Chemical Seal Stainless Steel 316TI 5 = HDA 4700 Stainless Steel 6 = HDA 4300 Duplex Stainless Steel		BOX 7 Control Box Position Control box offset by 1 = 90° clockwise to filter outlet Control box offset 2 = by 180° clockwise to filter outlet Control box offset 3 = by 270° clockwise to filter outlet	BOX 8 Modification Number 2 = Latest version supplied by factory	BOX 9 Element Set ES200 = 200µ Conical Slotted Tubes ES300 = 300µ Conical Slotted Tubes ES400 = 400µ Conical Slotted Tubes ES500 = 500µ Conical Slotted Tubes ES1000 = 1000µ Conical Slotted Tubes ES1500 = 1500µ Conical Slotted Tubes ES2000 = 2000µ Conical Slotted Tubes ES2500 = 2500µ Conical Slotted Tubes ES3000 = 3000µ Conical Slotted Tubes
BOX 10 Size of Element Set Same as BOX 2 Value	BOX 11 Vessel Certification Omit = Standard Version ASME = ASME Version			

NOTES:
 Box 3. Needs to have control type and voltage selected ex. EPT8.
 Box 4. can contain two options ex. NMA.
 note. If ANSI flanges are not specified DIN style will be provided.

83-33,022
gpm
22-12,501
L/min

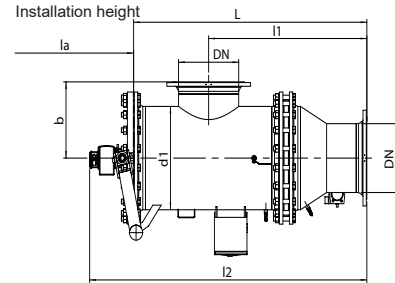
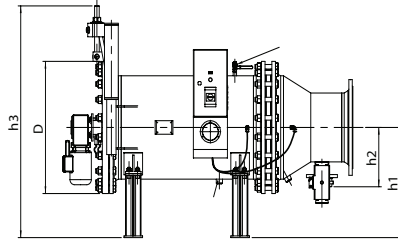
87-232 psi
6-18 bar



Dimensions

The automatic backflushing filter AutoFilt® RF3 has proven its reliable performance successfully for many years in a wide range of different industries. The horizontal backflushing filter AutoFilt® RF7 supplements our backflushing filter family. The AutoFilt® RF7 is a compact model range that is specifically designed for applications with small space and height restrictions.

The working principle and control systems of the AutoFilt® RF7 are identical to those of the AutoFilt® RF3.



Size	DN in (mm)	DN1 in (mm)	l1 in (mm)	b in (mm)	h1 in (mm)	h2 in (mm)	h3 in (mm)	D in (mm)	d1 in (mm)	L in (mm)	l2 in (mm)	G1 in (mm)	G2 in (mm)	la in (mm)
CC	2 (50)	1 (25)	19.8 (504)	7.9 (200)	14.2 (360)	4.7 (120)	25.6 (650)	13.4 (340)	8.7 (220)	25 (635)	35.1 (892)	G1/4	G1/2	21.7 (550)
0B	3.9 (100)	1 (25)	23.5 (596)	7.9 (200)	15.2 (385)	5.9 (150)	27 (685)	13.4 (340)	8.7 (220)	33.5 (850)	45.9 (1165)	G1/4	G1/2	21.7 (550)
1B	5.9 (150)	1.6 (40)	25.5 (647)	10.6 (270)	17.7 (450)	7.4 (189)	31.7 (805)	17.5 (445)	12.8 (324)	35.4 (900)	47.8 (1215)	G1/4	G3/4	21.7 (550)
2B	7.9 (200)	2 (50)	30.1 (764)	12.8 (325)	19.7 (500)	8.6 (220)	39.4 (1000)	22.2 (565)	16 (406)	40.2 (1020)	52.6 (1335)	G1/4	G3/4	27.6 (700)
2.5B	9.8 (250)	2 (50)	40.3 (1024)	12.8 (325)	19.7 (500)	10.2 (260)	39.4 (1000)	22.2 (565)	16 (406)	58.3 (1480)	69.7 (1770)	G1/4	G3/4	27.6 (700)
3B	11.8 (300)	2.6 (65)	41.02 (1042)	15 (380)	23.2 (590)	11.02 (280)	47.2 (1200)	26.4 (670)	20 (508)	61.02 (1550)	72.8 (1848)	G1/4	G3/4	27.6 (700)
4A	15.7 (400)	3.1 (80)	42.1 (1069)	17.7 (450)	25.6 (650)	13.8 (350)	55.1 (1400)	30.7 (780)	24 (610)	62.05 (1576)	73.7 (1873)	G1/4	G3/4	27.6 (700)
5A	19.7 (500)	3.1 (80)	44.8 (1139)	21.7 (550)	29.5 (750)	14.6 (370)	62 (1575)	35.2 (895)	28 (711)	62.4 (1585)	75.6 (1920)	G1/4	1.5" Flange	27.6 (700)
6A	23.6 (600)	3.9 (100)	45.6 (1159)	24.6 (625)	33.1 (840)	18.7 (475)	68.9 (1750)	43.9 (1115)	36 (914)	66.5 (1690)	80.6 (2046)	G1/4	1.5" Flange	27.6 (700)
7A	27.6 (700)	3.9 (100)	47.2 (1200)	29.5 (750)	35.04 (890)	20.1 (510)	74.8 (1900)	48.4 (1230)	40 (1016)	58.1 (1475)	72 (1830)	G1/4	1.5" Flange	27.6 (700)
8A	3.5 (90)	5.9 (150)	58.0 (1474)	37.4 (950)	43.3 (1100)	24.4 (620)	88.6 (2250)	55.3 (1405)	48.03 (1220)	83.2 (2114)	96.9 (2460)	G1/4	1.5" Flange	27.6 (700)

Technical Data

Size	Pressure Rating psi (bar)	Connection Inlet/Outlet	Connection Backflushing Line	Weight Empty lbs (kg)	Volume Gallons (liters)	Amount of Filter Elements	Filter Area in ² (cm ²)	Backflushing Amount gal (liters)	gpm	Liters/ Minute
CC	230 (16)	2" Flange	1" Flange	286 (130)	4 (15)	6	332 (2140)	6.6 (25)	22-124	83-469
0B	150 (10)	4" Flange	1" Flange	342 (155)	7 (25)	6	590 (3810)	6.6 (25)	110-498	416-1885
1B	150 (10)	6" Flange	1.5" Flange	550 (250)	16 (60)	6	960 (6190)	9.2 (35)	396-1118	1499-4232
2B	150 (10)	8" Flange	2" Flange	825 (375)	28 (105)	8	1279 (8250)	13.2 (50)	880-1981	3331-7498
2.5B	150 (10)	10" Flange	2" Flange	1025 (465)	50 (190)	6	1938 (12500)	17.2 (65)	1761-2641	6666-9997
3B	150 (10)	12" Flange	2.5" Flange	1290 (585)	74 (280)	9	2906 (18750)	25.1 (95)	2421-3786	9164-14331
4A	87 (6)	16" Flange	3" Flange	1705 (775)	112 (425)	18	5813 (37500)	55.5 (210)	3566-7484	13498-28330
5A	87 (6)	20" Flange	3" Flange	2290 (1040)	168 (635)	24	8643 (55760)	82 (310)	6604-10787	24998-40833
6A	87 (6)	24" Flange	4" Flange	3635 (1650)	264 (998)	40	13811 (89100)	128.1 (485)	8805-15850	33330-59998
7A	87 (6)	28" Flange	4" Flange	4410 (2000)	358 (1355)	44	16446 (106100)	147 (555)	13208-22014	49997-83332
8A	87 (6)	36" Flange	6" Flange	7960 (3610)	716 (2710)	54	28009 (180700)	190.2 (720)	19813-33022	75000-125001

Backflushing Filter AutoFit® RF7

RF7

How to Build a Valid Model Number for a RF3:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	BOX 9	BOX 10	BOX 11
RF7										

Example: NOTE: One option per box

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	BOX 9	BOX 10	BOX 11
RF7	3B	EPT7	NMA	N	5	1A	2	KS100	3B	ASME

= RF7-3B-EPT8-NMA-N-5-3-2/ KS1000-40-ASME

RF3 —
RF3-8

RF5

RF7

RF10

RF4-1

RF4-2

RF4-3

RF12

RF14

BTU

ATF-1

ATF-2

ATF-2.5

ATF-3

ATF-3.5

ATF-4

PLF1

PLF2

PVD

<p>BOX 1</p> <p>Filter Series</p> <p>RF7</p>	<p>BOX 2</p> <p>Filter Size</p> <p>CC</p> <p>0B</p> <p>1B</p> <p>2B</p> <p>2.5</p> <p>3B</p> <p>4A</p> <p>5A</p> <p>6A</p> <p>7A</p> <p>8A</p>	<p>BOX 3</p> <p>Drive Control / Connecting Voltage</p> <p>EPT = Electro-pneumatic cyclic control, Δp dependent</p> <p>EU = Electric Control, Δp dependent</p> <p>PT = Pneumatic cyclic control</p> <p>PTZ = Pneumatic cyclic timed control</p> <p>7 = 3X415V/N/PE 60Hz</p> <p>8 = 3X460V/X/PE 60Hz</p> <p>9 = 3X440V/X/PE 60Hz</p> <p>E = 1X230V/N/PE 60 Hz</p> <p>F = 1X110V/N/PE 60Hz</p>	<p>BOX 4</p> <p>Housing Material & Coating</p> <p>N = Standard Steel 1.0038 outside primed</p> <p>Standard Steel 1.0038 outside primed, inside metallogal painted</p> <p>NM = Stainless Steel 1.4571 with ANSI-flanged, additional A at the end</p>
<p>BOX 5</p> <p>Shut Off Valve Material</p> <p>N = Butterfly housing SG cast iron coated, washer stainless steel</p> <p>B = Butterfly housing SG cast iron coated, washer bronze</p>	<p>BOX 6</p> <p>Differential Pressure Gauge</p> <p>1 = Aluminum Pressure Chamber 3.258302</p> <p>2 = Stainless Steel Pressure Chamber 1.4305</p> <p>3 = With Chemical Seal Stainless Steel 316TI</p> <p>5 = HDA 4700 Stainless Steel</p> <p>6 = HDA 4300 Duplex Stainless Steel</p>	<p>BOX 7</p> <p>Flange Setting/ Backflushing Line Setting</p> <p>1 = Outlet to right</p> <p>2 = Outlet up</p> <p>3 = Outlet to left</p> <p>A = Backflushing line to left</p> <p>B = Backflushing downwards</p> <p>C = Backflushing line to right</p>	<p>BOX 8</p> <p>Modification Number</p> <p>Latest version</p> <p>2 = supplied by factory</p>
	<p>BOX 9</p> <p>Element Set</p> <p>KD25 = Conical SuperMesh™</p> <p>K40 = Conical SuperMesh™</p> <p>KS50 = Conical Slotted Tubes</p> <p>KS100 = Conical Slotted Tubes</p> <p>KS200 = Conical Slotted Tubes</p> <p>KS300 = Conical Slotted Tubes</p> <p>KS400 = Conical Slotted Tubes</p> <p>KS500 = Conical Slotted Tubes</p> <p>KS1000 = Conical Slotted Tubes</p> <p>KS1500 = Conical Slotted Tubes</p> <p>KS2000 = Conical Slotted Tubes</p> <p>KS2500 = Conical Slotted Tubes</p> <p>KS3000 = Conical Slotted Tubes</p>	<p>BOX 10</p> <p>Size of Element Set</p> <p>Same as BOX 2 Value (first letter/numbr only)</p>	<p>BOX 11</p> <p>Vessel Certification</p> <p>Omit = Standard Version</p> <p>ASME = ASME Version</p>

NOTES:
 Box 3. Needs to have control type and voltage selected ex. EPT8.
 Box 4. can contain two options ex. NMA.
 note. If ANSI flanges are not specified DIN style will be provided.

Backflushing Filter AutoFilt® RF10



Traditional Automatic Backwash Filters are designed for high pressure applications with medium to lower loads.

What if pressure is low and contamination is high?

The new RF10 takes the best features of the RF3 and marries them with JetFlush technology. The operating principle subdivides the backflushing into two phases.

Phase One:

Stripping away the contaminant particles

Phase Two:

Discharging the contaminant particles

The new generation is dependent on influent pressure only and does not require the additional back pressure of the effluent to influent differential. With a JetFlush reservoir and internally guided JetFlush valves that can seal the upper lip creating an increased "suction" backflush, the RF10 can handle almost all difficult filtration applications.

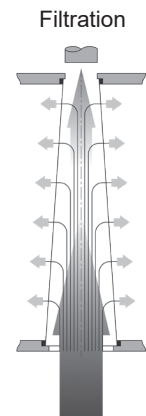
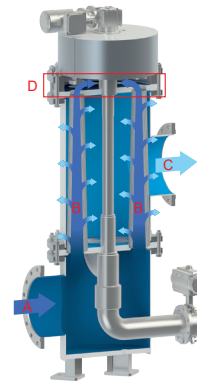
Product Advantages:

- Back-flushing independent of pressure on clean side of filter
- Dependent only on the inlet pressure
- Highly efficient back-flushing with low pressure conditions and long back-flush lines
- With its highly efficient back-flushing, the filter is suitable for high dirt loads and surges in contamination
- Optional davit
- Variable filter isometry

Here is how the JetFlush Technology improves traditional ABF Technology:

Filtration

The medium being filtered enters the filter housing via the filter inlet (A) and flows through the filter elements of the back-flushing filter from the inside to the outside (B) and leaves the filter via the filter outlet (C). During the filtration process, the JetFlush reservoir (D) located above the filter elements fills with and stores medium from the contaminated side. As fluid is filtered, particles collect on the inside of the filter elements. As the level of contamination increases, the differential pressure between the contaminated and clean side of the filter increases. When the differential pressure reaches the pre-set trigger point, back-flushing starts automatically.

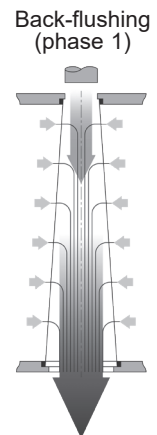
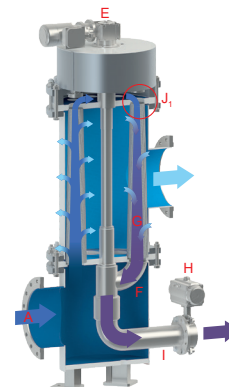


Back-Flushing In General

Automatic back-flushing is triggered:

- When the differential pressure trigger point is exceeded
- By means of a timer
- By pressing the test button

The gear motor (E) rotates the back-flushing arm (F) to the filter element to be cleaned (G). The back-flush valve (H) opens. The pressure drop between the filter inlet (A) and the back-flush line (I), combined with the conical geometry of the filter element, triggers the special JetFlush effect of the AutoFilt® RF10.



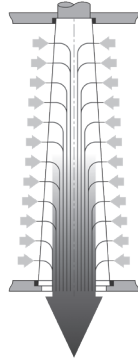
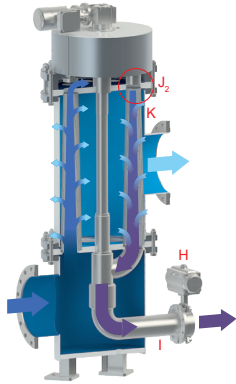
The remaining filter elements continue filtering to ensure uninterrupted filtration.

Backflushing Filter AutoFilt® RF10

Back-Flushing Phase I

Phase 1 - Stripping away the contamination

In the first phase, unfiltered fluid from the JetFlush reservoir (J1) above flows into the filter element. The conical filter element geometry produces a core flow here, supplied mainly by the JetFlush reservoir. This core flow is supported by the open JetFlush effect, which also draws water from the filtrate side into the inside of the filter element.



Back-Flushing Phase II

Phase 2 - Discharging the contamination

Once the core flow has developed, the JetFlush reservoir located above the filter element is closed (J2).

When the opening at the top of the filter element closes, the second phase is initiated, namely discharging the contamination:

The moving column of fluid draws water from the filtrate side (K) as soon as the fluid supply stops as a result of the filter element closing at the top.

The conical filter element geometry ensures the whole surface of the filter element is now clean and residue-free. The contamination is discharged via the back-flush line (I). After cleaning the filter element, the back-flushing arm rotates to the next filter element to be cleaned; the process is repeated. When the back-flush cycle is finished, the back-flush valve is closed (H).



STEEL
MAKING



PULP & PAPER



WASTE WATER
TREATMENT



MINING
TECHNOLOGY



INDUSTRIAL



POWER
GENERATION



MARINE

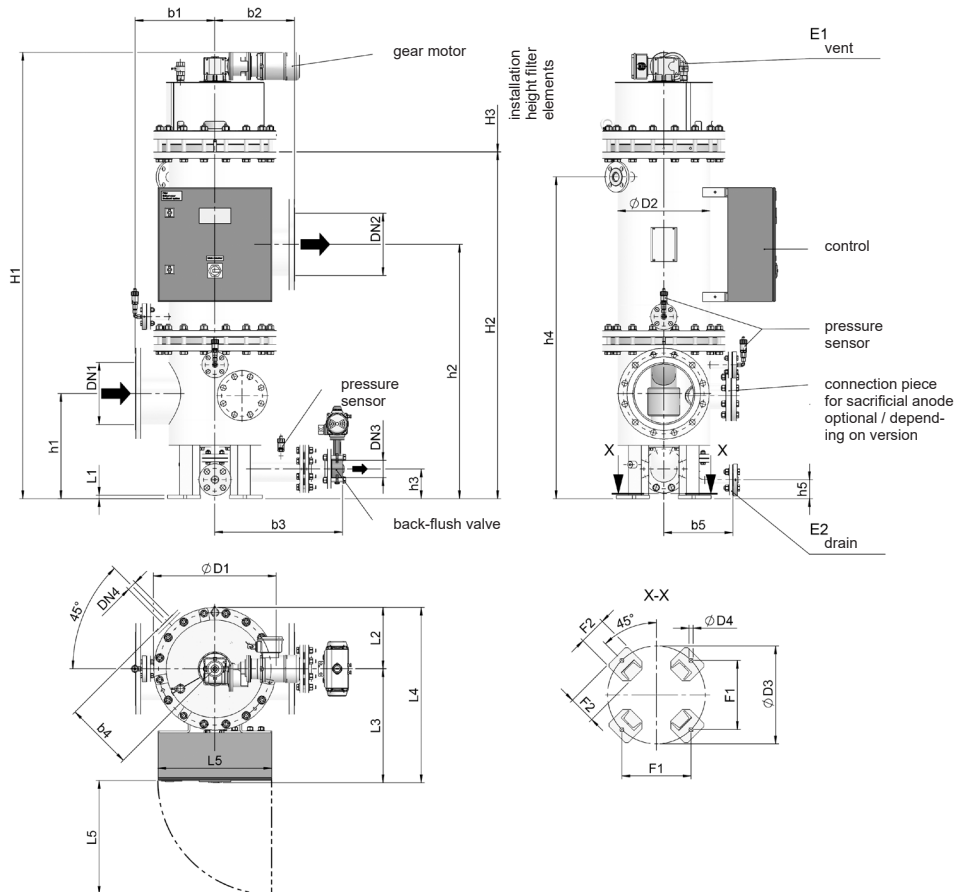


MACHINE
TOOL

Filter Elements

Industries
Served

Dimensions



Specifications

Filter Sizes: 10, 20, 23, 25, 30, 35, 40, 50, 60

Flow Range: 2210-12,940 gpm (580-3420 L/min)

Working Pressure: 87 psi (6 bar)

Max. Working Temperature: 131°F (55°C)

Empty Weight: 10 - 624 lbs. (283 kg), 20 - 981 lbs. (445 kg), 23 - 1021 lbs. (463 kg), 25 - 1213 lbs. (550 kg), 30 - 1560 lbs. (725 kg), 35 - 1934 lbs. (877 kg), 40 - 2619 lbs. (1188 kg), 50 - 2985 lbs. (1354 kg), 60 - 5644 lbs. (2560 kg)

Housing Volume: 10 - 10 gallons (36 L), 20 - 25 gallons (95 L), 23 - 35 gallons (131 L), 25 - 42 gallons (160 L), 30 - 80 gallons (304 L), 35 - 119 gallons (452 L), 40 - 163 gallons (616 L), 50 - 235 gallons (891 L), 60 - 393 gallons (1489 L)

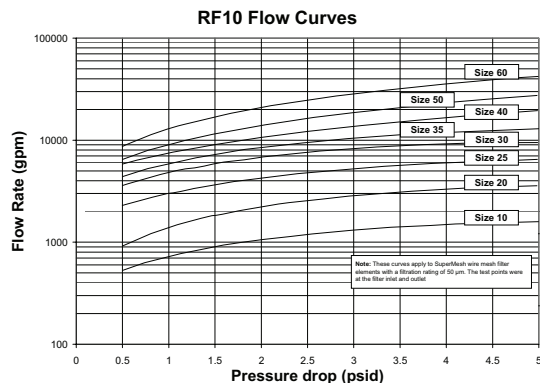
Filter Area: 10 - 558 in.² (3,600 cm²), 20 - 1,105 in.² (7,128 cm²), 23 - 1,868 in.² (12,050 cm²), 25 - 2,241 in.² (14,460 cm²), 30 - 3,362 in.² (21,690 cm²), 35 - 4,109 in.² (26,510 cm²), 40 - 6,724 in.² (43,380 cm²), 50 - 8,965 in.² (57,840 cm²), 60 - 14,942 in.² (96,400 cm²)

No. of Filter Elements: Contact Factory

Backflush Flange Size: Contact Factory

Backflush Volume: Contact Factory

Pressure Drop Information Based on Flow Rate and Viscosity



Backflushing Filter AutoFilt® RF10

RF10

Dimensions

Size	DN1 in (mm)	DN2 in (mm)	DN3 in (mm)	DN4 in (mm)	b1 in (mm)	b2 in (mm)	b3 in (mm)	b4 in (mm)	b5 in (mm)	h1 in (mm)	h2 in (mm)	h3 in (mm)	h4 in (mm)	h5 in (mm)	H1 in (mm)
RF10-10	10 (100)	10 (100)	4 (40)	G3/4	25 (250)	25 (250)	29.8 (298)	-	-	36 (360)	68.7 (687)	16 (160)	71.7 (717)	-	127.4 (1274)
RF10-20	20 (200)	20 (200)	6.5 (65)	2.5 (25)	32 (320)	32 (320)	30.5 (305)	28 (280)	29.5 (295)	42.5 (425)	88.5 (885)	16.1 (161)	100.5 (1005)	7.9 (79)	155.9 (1559)
RF10-23	20 (200)	20 (200)	6.5 (65)	2.5 (25)	32 (320)	32 (320)	30.5 (305)	28 (280)	29.5 (295)	42.5 (425)	110 (1100)	16.1 (161)	134.1 (1341)	7.9 (79)	189.5 (1895)
RF10-25	25 (250)	25 (250)	6.5 (65)	2.5 (25)	35 (350)	35 (350)	30.5 (305)	30 (300)	29.5 (295)	46.2 (462)	111.7 (1117)	13.1 (131)	141.4 (1414)	8.3 (83)	129.7 (1297)
RF10-30	30 (300)	30 (300)	6.5 (65)	2.5 (25)	40 (400)	40 (400)	62.1 (621)	35 (350)	33 (330)	42 (420)	112.6 (1126)	26.6 (266)	8.2 (82)	140.9 (1409)	197.8 (1978)
RF10-35	35 (350)	35 (350)	6.5 (65)	2.5 (25)	45 (450)	45 (450)	63.7 (637)	41 (410)	42 (420)	42 (420)	113.6 (1136)	26.6 (266)	8.2 (82)	XX (1424)	199.2 (1992)
RF10-40	40 (400)	40 (400)	8 (80)	2.5 (25)	52 (520)	52 (520)	73.5 (735)	46 (460)	47 (470)	47 (470)	122.5 (1225)	30 (300)	8.2 (82)	142.4 (1492)	212.5 (2125)
RF10-50	50 (500)	50 (500)	8 (80)	4 (40)	60 (600)	60 (600)	77 (770)	56 (560)	49 (490)	49 (490)	130 (1300)	35 (350)	10.5 (105)	157.6 (1576)	221 (2210)
RF10-60	60 (600)	60 (600)	10 (100)	4 (40)	70 (700)	70 (700)	90 (900)	65 (650)	61 (610)	61 (610)	136 (1360)	33 (330)	19.5 (195)	159 (1590)	227 (2270)

Size	H2 in (mm)	H3 in (mm)	L1 in (mm)	L2 in (mm)	L3 in (mm)	L4 in (mm)	L5 in (mm)	D1 in (mm)	D2 in (mm)	D3 in (mm)	D4 in (mm)	E1 in (mm)	E2 in (mm)	F1 in (mm)	F2 in (mm)
RF10-10	83.7 (837)	35 (350)	1 (10)	18.8 (188)	46 (460)	64.8 (648)	50 (500)	37.5 (375)	27.3 (273)	34 (340)	1.8 (18)	G1/2	G1/2	24 (240)	9 (90)
RF10-20	112.2 (1122)	55 (550)	1.5 (15)	24.5 (245)	51.7 (517)	76.2 (762)	50 (500)	49 (490)	35.56 (355.6)	37 (370)	1.8 (18)	DN25	G1/2	26.9 (269)	12 (120)
RF10-23	145.8 (1458)	70 (700)	1.5 (15)	24.5 (245)	46 (460)	70.5 (705)	50 (500)	49 (490)	35.56 (355.6)	49.6 (496)	1.8 (18)	DN25	G1/2	35.1 (351)	12 (120)
RF10-25	152.3 (1523)	55 (550)	1.5 (15)	27 (270)	47.7 (477)	74.7 (747)	50 (500)	54 (540)	40.64 (406.4)	43 (430)	1.8 (18)	DN25	G1/2	30.4 (304)	12 (120)
RF10-30	153.1 (1531)	70 (700)	1.5 (15)	32.3 (323)	49.7 (497)	82 (820)	50 (500)	64.5 (645)	50.8 (508)	54 (540)	1.8 (18)	G1/2	G1/2	38.2 (382)	15 (150)
RF10-35	154.8 (1548)	70 (700)	1.5 (15)	37.8 (378)	57.6 (576)	95.4 (954)	50 (500)	75.5 (755)	61 (610)	64 (640)	1.8 (18)	G1/2	G1/2	45.3 (453)	15 (150)
RF10-40	161.7 (1617)	70 (700)	1.5 (15)	48.5 (485)	63.2 (632)	111.7 (1117)	50 (500)	86 (860)	71.1 (711)	72.7 (727)	2.7 (27)	G1/2	G1/2	51.4 (514)	15 (150)
RF10-50	170.1 (1701)	70 (700)	2 (20)	54.3 (543)	69.8 (698)	124 (1240)	50 (500)	97.5 (975)	81.3 (813)	86 (860)	3 (30)	G1/2	G1/2	60.8 (608)	20 (200)
RF10-60	175.9 (1759)	70 (700)	2 (20)	64.3 (643)	79.5 (795)	143.8 (1438)	50 (500)	117.5 (1175)	101.6 (1016)	104 (1040)	3.2 (32)	G1/2	G1/2	73.5 (735)	20 (200)

Size	Pressure Rating psi (bar)	Connection Inlet/Outlet	Connection Backflushing Line	Weight Empty lbs (kg)	Volume Gallons (liters)	Amount of Filter Elements	Filter Area in ² (cm ²)	Backflushing Amount gal (liters)
10	87 (6)	DN 100	40	624 (283)	10 (36)	6	558 (3600)	154 (583)
20	87 (6)	DN 200	65	981 (445)	25 (95)	6	1105 (7128)	330 (1250)
23	87 (6)	DN 200	65	1025 (465)	35 (131)	5	1868 (12050)	374 (1417)
25	87 (6)	DN 250	65	1213 (550)	42 (160)	6	2241 (14460)	374 (1417)
30	87 (6)	DN 300	65	1598 (725)	80 (304)	9	3362 (21690)	374 (1417)
35	87 (6)	DN 350	65	1934 (877)	119 (452)	11	4109 (26510)	374 (1417)
40	87 (6)	DN 400	80	2619 (1188)	163 (616)	18	6724 (43380)	639 (2417)
50	87 (6)	DN 500	80	2985 (1354)	235 (891)	24	8965 (57840)	639 (2417)
60	87 (6)	DN 600	100	5644 (2560)	393 (1489)	40	14942 (96400)	903 (3417)

Technical Data

RF3 — RF3-8
RF5
RF7
RF10
RF4-1
RF4-2
RF4-3
RF12
RF14
BTU
ATF-1
ATF-2
ATF-2.5
ATF-3
ATF-3.5
ATF-4
PLF1
PLF2
PVD

Filter Model Number Selection

How to Build a Valid Model Number for a RF10:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	BOX 9	BOX 10	BOX 11	BOX 12	BOX 13	BOX 14	BOX 15	BOX 16	BOX 17
RF10																

Example: NOTE: One option per box

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	BOX 9	BOX 10	BOX 11	BOX 12	BOX 13	BOX 14	BOX 15	BOX 16	BOX 17
RF10	20	A	1		X	P	J	K	VN	B	2	1	H	1	1	0

Cont'd on page 45

BOX 1		BOX 2		BOX 3		BOX 4		BOX 5	
Filter Series	Filter Size	Pressure Range	Type Of Control	Voltage Supply					
RF10	10 = DN 100 35 = DN 350 20 = DN 200 40 = DN 400 23 = DN 200 50 = DN 500 25 = DN 250 60 = DN 600 30 = DN 300	A = PN6 B = PN10	1 = pneumatic control EPP electro- EPP functional control 2 = (triggered by the customer) Customer- 3 = specific version	1 = 3 x 400V / N / PE 50Hz 2 = 3 x 400V / x / PE 50Hz 3 = 3 x 500V / x / PE 50Hz 4 = 3 x 415V / x / PE 50Hz 5 = 3 x 415V / N / PE 60Hz 6 = 3 x 460V / x / PE 60Hz 7 = 3 x 440V / x / PE 60Hz 8 = 3 x 525V / x / PE 50Hz 9 = 3 x 575V / x / PE 60Hz 0 = 3 x 575V / x / PE 60Hz Y = Customer-specific version					
BOX 6	BOX 7	BOX 8		BOX 9		BOX 10		BOX 11	
EX Protection	Housing Material	Flange Standard		Nominal Size		Material of Back-Flush Valve: Collar		Material of Back-Flush Disc	
X = EX protection according to ATEX C = EX protection according to IECEx	Carbon steel, external primer N = (RAL 9006), no corrosion protection, internal Carbon steel, external primer M = (RAL 9006), 2K epoxy paint, internal Carbon steel, external primer P = (RAL 9006), 2K polyurethane paint, internal E = Stainless steel AISI 304 H = Stainless steel AISI 316	A = ANSI F = DIN/EN J = JIS		C = DIN / EN 50 / ANSI 2" M = DIN / EN 250 / ANSI 10" (standard size 25) D = DIN / EN 65 / ANSI 2 1/2" N = DIN / EN 300 / ANSI 12" (standard size 30) E = DIN / EN 80 / ANSI 3" P = DIN / EN 350 / ANSI 14" (standard size 35) F = DIN / EN 100 / ANSI 4" (standard size 10) Q = DIN / EN 400 / ANSI 16" (standard size 40) H = DIN / EN 125 / ANSI 5" J = DIN / EN 450 / ANSI 18" K = DIN / EN 150 / ANSI 6" R = DIN / EN 500 / ANSI 20" (standard size 50) L = DIN / EN 200 / ANSI 8" (standard size 20, 23) W = DIN / EN 550 / ANSI 22" S = DIN / EN 600 / ANSI 24" (standard size 60)		N = NBR (standard) E = EPDM V = KFM (Viton)		N = Stainless Steel B = Bronze D = Duplex	
		BOX 13		BOX 14		BOX 12		BOX 15	
		Flange Position		Material of Internal Parts		Pressure Transmitter		Modification Number	
		1 = Filter outlet opposite filter inlet (standard) 2 = Filter outlet offset by 90° clockwise to standard 3 = Filter outlet offset by 180° clockwise to standard 4 = Filter outlet offset by 270° clockwise to standard		H = Stainless Steel D = Duplex S = Superduplex		No pressure transmitter 0 = (flange connection on the filter remains) Pressure transmitter (P-in; P-out and P-rsl) with digital display (type EDS) 1 = Pressure transmitter (P-in; P-out and P-rsl) without digital display on the sensor (type HDA) 2 =		X = Determined by manufacturer	
BOX 15		BOX 16		BOX 16		BOX 16		BOX 16	
Sacrificial Anode		Cover Plate Lifting Device		Cover Plate Lifting Device		Cover Plate Lifting Device		Cover Plate Lifting Device	
0 = No anode 1 = With sacrificial anode 2 = With flange connection, no sacrificial anode		0 = No cover plate lifting device 1 = With cover plate lifting device		0 = No cover plate lifting device 1 = With cover plate lifting device		0 = No cover plate lifting device 1 = With cover plate lifting device		0 = No cover plate lifting device 1 = With cover plate lifting device	

NOTES:

Box 12. Min. pressure is -15 psi (-1 bar) and max. pressure is 131 psi (9 bar), 218 psi (15 bar) and 334 psi (23 bar) depending on design pressure.

Backflushing Filter AutoFilt® RF10

RF10

How to Build a Valid Model Number for a RF10:

BOX 18	BOX 19	BOX 20
S		

Example: NOTE: One option per box

BOX 18	BOX 19	BOX 20
S	H	D

 = RF10-20-A-1-7-X-P-J-K-N-B-2-1-H-1-1-0-S-H-D

BOX 18
Coating
S = SuperFlush (optional)

BOX 19
Material
H = Stainless Steel
D = Duplex*
S = Superduplex

BOX 20
Version
D = Conical wire mesh elements only available in stainless teel AISI 316
S = Conical slotted tube element

Filter Element Model Number Selection

RF3 —
RF3-8

RF5

RF7

RF10

RF4-1

RF4-2

RF4-3

RF12

RF14

BTU

ATF-1

ATF-2

ATF-2.5

ATF-3

ATF-3.5

ATF-4

PLF1

PLF2

PVD



The automatic backflushing RF4 filter is a self-cleaning system for removing particles from low viscosity fluids. Its robust construction and automatic backflushing capability make a major contribution to operational reliability and reduce operating and maintenance costs. The slotted tube or SuperMesh™ filter elements with filtration rates from 25 to 1000 µm ensure highly effective separation of contaminating particles from the process medium.

Automatic cleaning starts as soon as the elements become contaminated. The flow of filtrate is not interrupted during the backflushing procedure. Two sizes allow flow rates from 10-60 gpm. The RF4 is available as a fully automatic or purely manual version.

Numerous combinations of materials and equipment as well as individually adjustable control parameters allow optimum adaptation of the filter to any application.

OPERATION OF THE RF4

Filtration

The fluid to be filtered flows through the slotted tube filter elements of the backflushing filter passing from the inside to the outside. Contamination particles collect on the smooth inside of the filter elements. As the level of the collected contamination increases, the differential pressure between the contaminated and clean sides of the filter increases. When the differential pressure reaches its pre-set value, the backflushing cycle begins.

Triggering Automatic Backflushing

Backflushing is triggered automatically when the differential pressure set point is exceeded. As soon as backflushing has been triggered, the filter starts to clean the filter elements.

Triggering Backflushing on Manual Version

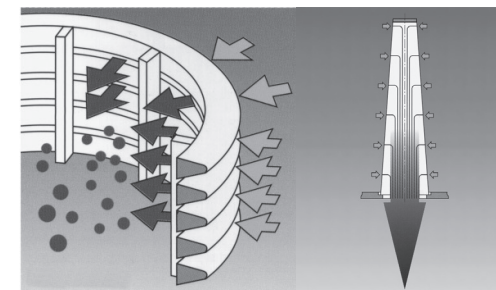
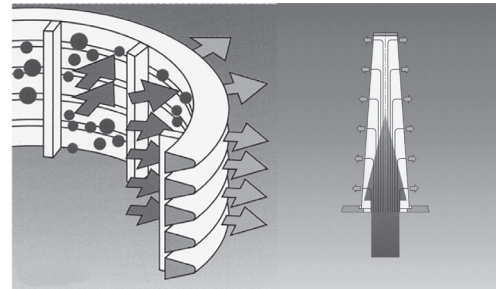
When the differential pressure set point is reached, the visual clogging alarm indicates to an operator or maintenance personnel that a backflush cycle is needed.

Backflushing of the Filter Elements – Backflushing Cycle

The cycle begins with the element plate turning 90°. This brings a clean filter element into filtration, and a contaminated filter element is positioned over the fixed flushing connection.

The backflush valve is opened.

The differential pressure between filtrate side and backflush line causes a small amount of the filtrate to reverse flow through the element to be cleaned. The contamination particles collected on the inside of the filter element are loosened and flushed into the backflush line via the flushing arm. As soon as the “backflushing time per element” has elapsed, the backflushing valve is closed. The backflushing cycle is terminated when all the filter elements have been cleaned. On the RF4 with manual backflushing, the element plate including filter elements, is turned and the backflushing valve is opened by hand. Each filter element is cleaned successively in this manner.



SPECIAL FEATURES OF THE RF4

Isokinetic Filtering and Backflushing

The special conical shape and configuration of the filter elements allows for even flow, resulting in low pressure drop and complete cleaning of the elements. The advantage: fewer backflushing cycles and lower loss of backflushing fluid.

Pulse-aided Backflushing

The filter element to be backflushed remains in the flushing position for only a few seconds. Rapid opening of the pneumatic backflushing valve generates a pressure surge in the openings of the filter elements that provides a pulse-aided cleaning effect to the backflushing process.

Low Backflushing Quantities Due to Cyclic Control

The backflush valve opens and closes during backflushing of each filter element, further minimizing the amount of filtrate needed to effectively clean the element.

Backflushing Filter AutoFilt® RF4

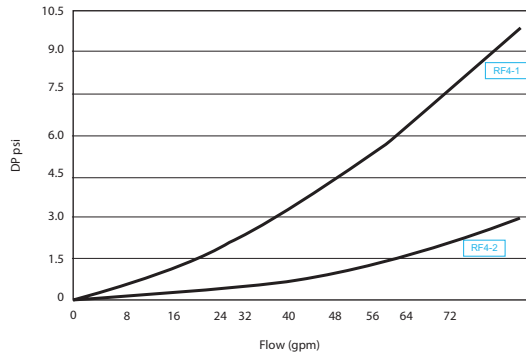
RF4

Water Applications

Fluid	Max. Flow Rate gpm (L/min)	
	RF4-1	RF4-2
Water	32(120)	60(220)

The flow rate ranges indicated apply to filtration ratings $\geq 100 \mu\text{m}$

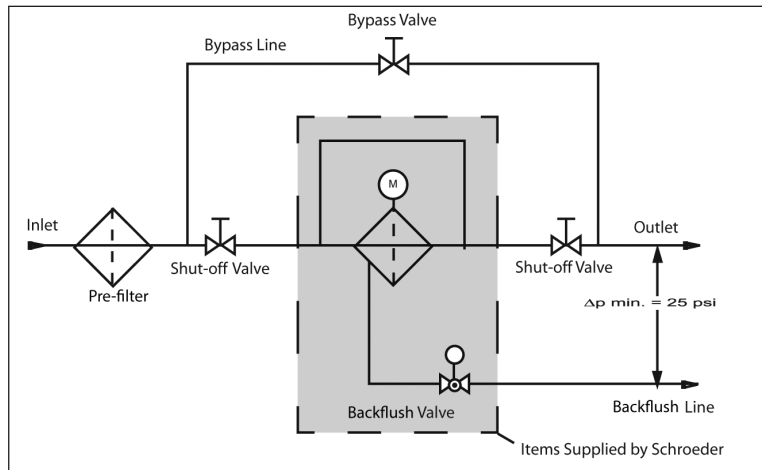
Important
The pressure drop curves apply to water and other fluids up to a viscosity of 11 mm²/s.



Cooling Lubricant Applications

Material Handling	Type of Machining	Max. Flow Rate gpm (L/min)	
		RF4-1	RF4-2
Aluminum	Cutting	26 (100)	53 (200)
Cast Iron	Cutting	18 (70)	42 (160)
Carbon Steel	Cutting	21 (80)	48 (180)
Stainless Steel	Cutting	21 (80)	48 (180)
Aluminum	Grinding	24 (90)	53 (200)
Cast Iron	Grinding	13 (50)	37 (140)
Carbon Steel	Grinding	16 (60)	40 (150)
Stainless Steel	Grinding	16 (60)	40 (150)

Circuit Diagram



STEEL MAKING	PULP & PAPER	WASTE WATER TREATMENT	AUTOMOTIVE MANUFACTURING	INDUSTRIAL	THERMAL TRANSFER	MARINE	MACHINE TOOL

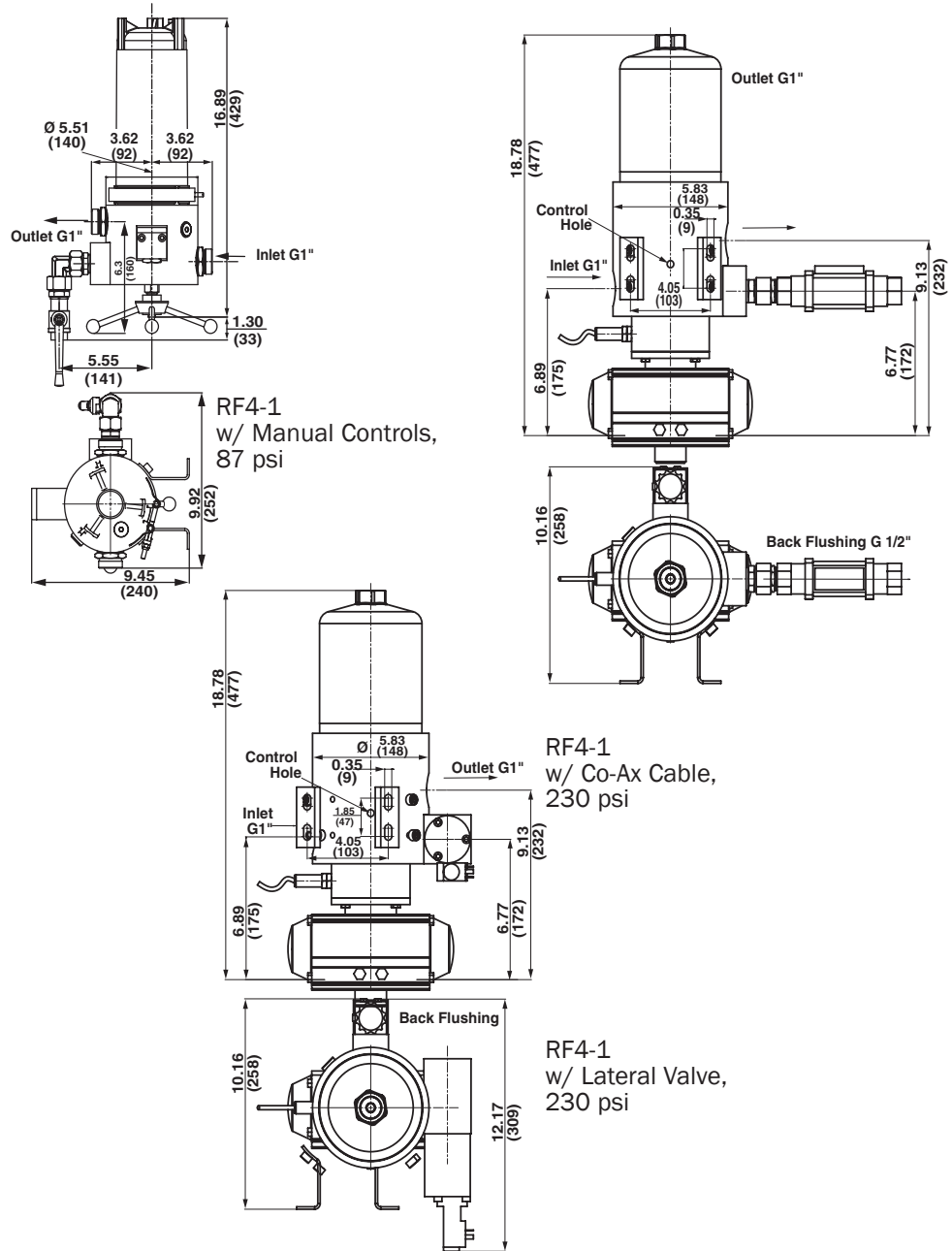
Industries Served

- RF3 — RF3-8
- RF5
- RF7
- RF10
- RF4-1**
- RF4-2
- RF4-3
- RF12
- RF14
- BTU
- ATF-1
- ATF-2
- ATF-2.5
- ATF-3
- ATF-3.5
- ATF-4
- PLF1
- PLF2
- PVD

32 gpm
120 L/min

87 psi
6 bar

or
230 psi
16 bar



NOTES:

1. Metric dimensions in ().
2. Drawings may change without notice. Contact factory for certified drawings.

Specifications

Process Connection:	G 1" Female
Max Flow:	32 gpm (120 L/min)
Max. Working Pressure:	87 psi (6 bar) or 230 psi (16 bar)
Max. Working Temperature:	194°F (90°C)
Weight:	29 lbs. (13 kg) or 33 lbs. (15kg)
Housing Volume:	0.66 gallons (2.5 L)
Filter Area:	85in. ² (548 cm ²)
No. of Filter Elements	4
Backflush Connection:	G½ Female
Backflush Volume:	1.1 gallons (4 L/cycle)

Backflushing Filter AutoFilt® RF4

RF4-1

How to Build a Valid Model Number for a RF4:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	BOX 9	BOX 10	BOX 11
RF4										

Example: NOTE: One option per box

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	BOX 9	BOX 10	BOX 11
RF4	1	ET	1	AA	E	CO	2	16	X	KMS50

= RF41ET1AAECO216XKMS50

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5
Filter Series	Size	Control Type	Voltage Type	Materials
RF4	1 = G1"	Electro-pneumatic cyclic EPT = control, (including pneumatic drive) ET = Electric Control M = Manual	0 = Without control, without solenoid valve With control* and 1 = solenoid valve 230 V AC 2 = With control* and solenoid valve 24 V AC 3 = Without control, with solenoid valve 24 V AC 4 = Without control, with solenoid valve 24 V AC Only for ET control: 0C = Without control*, drive 3 x 400 V/N/PE, 60 HZ 1C = With control*, drive 3 x 400 V/N/PE, 60 HZ *Supply voltage of control is 110-120 V AC, 60 Hz	AA = Aluminum head & bowl (only RF\$-1, 230 psi) Stainless Steel head EE = and bowl (only RF4-1, 87 psi)
BOX 6	BOX 7	BOX 8		
Material of Internal Parts	Backflushing Valve	Differential Pressure Control		
E = Stainless Steel	0 = Without backflushing valve CO = Coaxial valve, brass Ball valve, nickel plated KN = brass (only on M or EPT control models) Ball valve, nickel plated KE = brass (only on M or EPT control models)	0 = Without differential pressure monitoring Fixed value: 7.3 psi (0.5 bar), Type DS 32 N/O contact Adjustable: 1.5 psi (0.1 bar) - 14.5 psi (1 bar), Type DS 31, N/O contact		
BOX 9	BOX 10	BOX 11		
Pressure Range	Modification No.	Element Type & Size		
87 psi (6 bar) (housing fastened with clamp), only for housings in stainless steel design 06 = 230 psi (16 bar) (filter upper section threaded) 16 =	X = Latest version is always supplied	KMS = Slotted Tubes, 30 to 1000µm KMD = SuperMesh™ 25µm, 40µm, 60µm SKMS = Slotted Tube Superflush 30 µm to 1000 µm SKMD = SuperMesh™ Superflush 25µm, 40 µm, 60µm		

RF3 —
RF3-8

RF5

RF7

RF10

RF4-1

RF4-2

RF4-3

RF12

RF14

BTU

ATF-1

ATF-2

ATF-2.5

ATF-3

ATF-3.5

ATF-4

PLF1

PLF2

PVD

NOTES:
Box 5. AA only available for 16 bar.
AP only available for 6 bar.

RF4-2

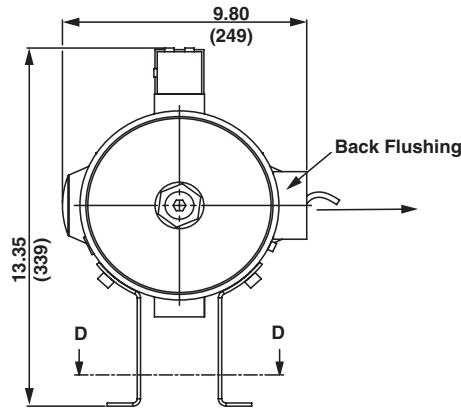
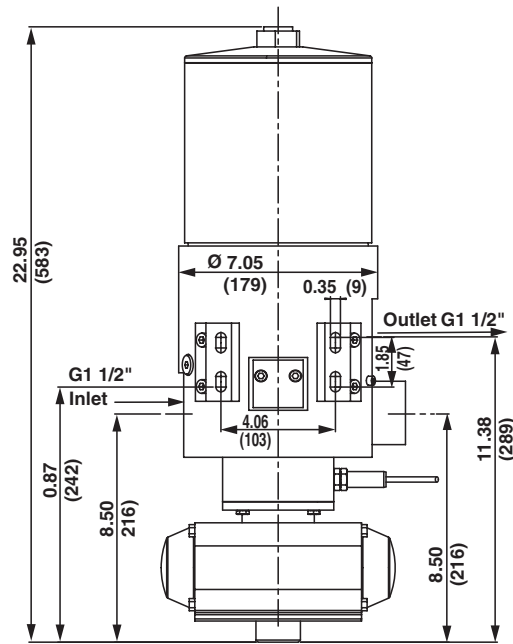
Backflushing Filter AutoFit® RF4

60 gpm
220 L/min

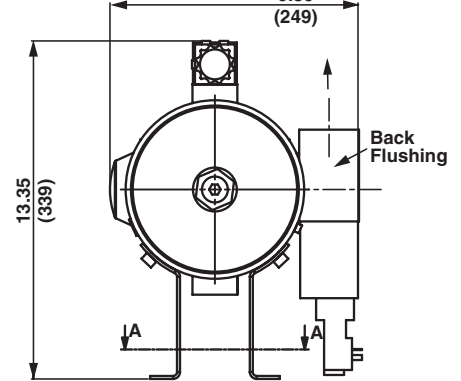
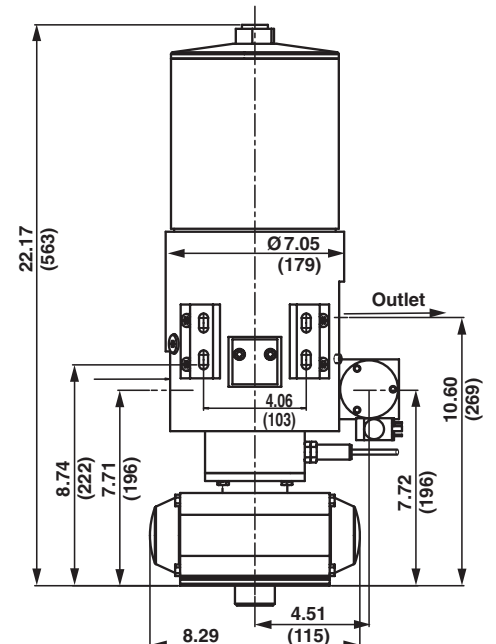
87 psi
6 bar

Or
230 psi

16 bar



RF4-2
w/ Co-Ax Cable,
230 psi



RF4-2
w/ Lateral Valve,
230 psi

NOTES:

1. Metric dimensions in ().
2. Drawings may change without notice. Contact factory for certified drawings.

Specifications

Process Connection:	G1½" Female
Max Flow:	60 gpm (220 L/min)
Max. Working Pressure:	87 psi (6 bar) or 230 psi (16 bar)
Max. Working Temperature:	194°F (90°C)
Weight:	71 lbs. (32 kg) or 140 lbs. (63kg)
Housing Volume:	1.0 gallons (3.7 L)
Filter Area:	220in. ² (1420 cm ²)
No. of Filter Elements	4
Backflush Connection:	G¾ Female
Backflush Volume:	3.4 gallons (13 L/cycle)

Backflushing Filter AutoFit® RF4

RF4-2

How to Build a Valid Model Number for a RF4:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	BOX 9	BOX 10	BOX 11
RF4										

Example: NOTE: One option per box

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	BOX 9	BOX 10	BOX 11
RF4	2	ET	1	NN	E	CO	2	16	X	KMS50

= RF42ET1NNECO216XKMS50

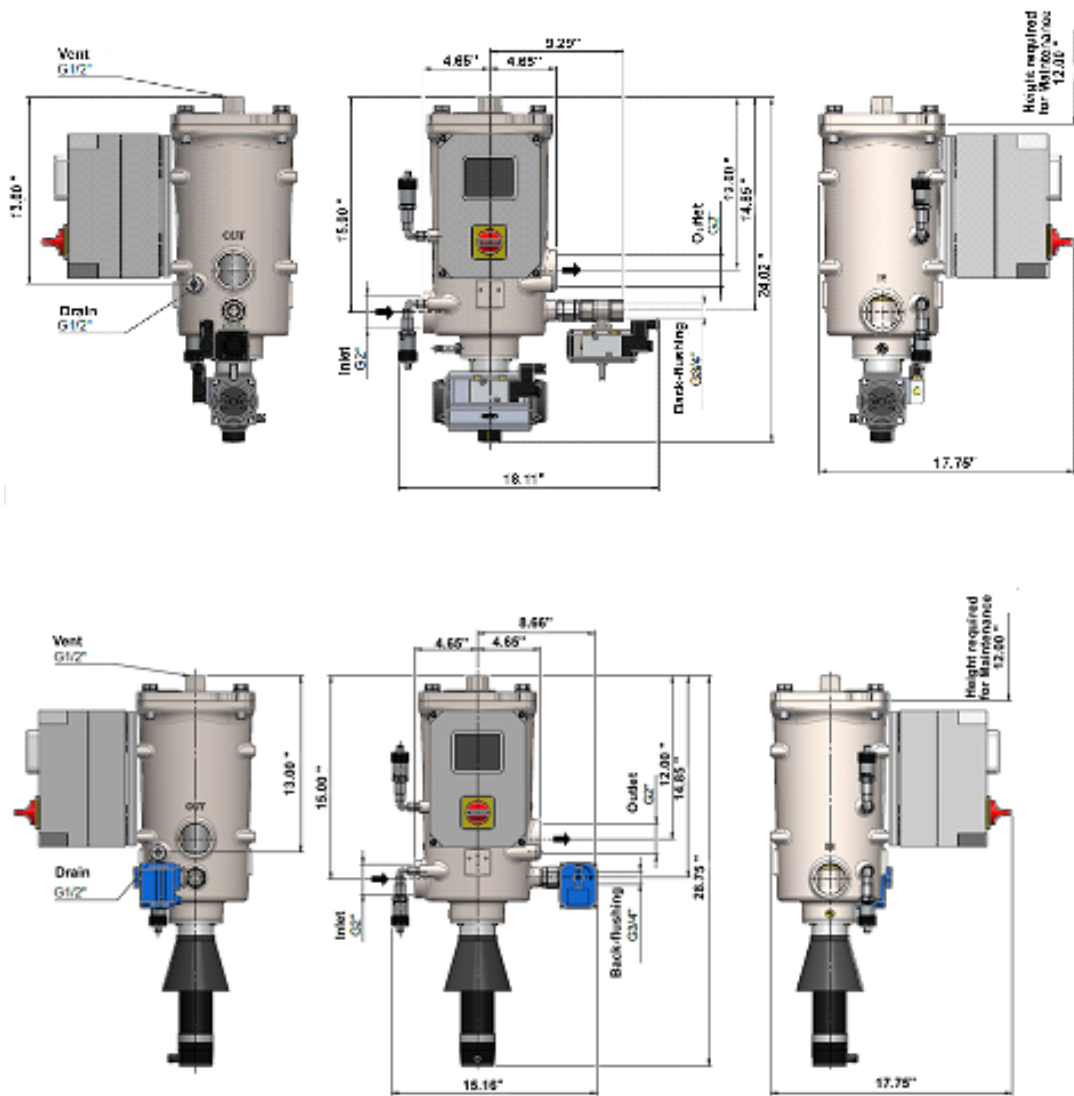
BOX 1	BOX 2	BOX 3	BOX 4	BOX 5
Filter Series	Size	Control Type	Voltage Type	Materials
RF4	2 = G1" 1/2	Electro-pneumatic cyclic control, (including pneumatic drive) EPT = Electric Control M = Manual	0 = Without control, without solenoid valve With control* and 1 = solenoid valve 230 V AC 2 = With control* and solenoid valve 24 V AC 3 = Without control, with solenoid valve 24 V AC 4 = Without control, with solenoid valve 24 V AC Only for ET control: 0C = Without control*, drive 3 x 400 V/N/PE, 60 HZ 1C = With control*, drive 3 x 400 V/N/PE, 60 Hz *Supply voltage of control is 110-120 V AC, 60 Hz	Carbon Steel, NN = nickel plated (only RF4-2 230 psi) Stainless Steel head EE = and bowl (only RF4-2, 87 psi)
BOX 6	BOX 7	BOX 8		
Material of Internal Parts	Backflushing Valve	Differential Pressure Control		
E = Stainless Steel	0 = Without backflushing valve CO = Coaxial valve, brass Ball valve, nickel plated KN = brass (only on M or EPT control models) Ball valve, nickel plated KE = brass (only on M or EPT control models)	0 = Without differential pressure monitoring Fixed value: 7.3 psi 1 = (0.5 bar), Type DS 32 N/O contact Adjustable: 1.5 psi (0.1 bar) - 14.5 psi (1 bar), Type DS 31, N/O contact		
BOX 9	BOX 10	BOX 11		
Pressure Range	Modification No.	Element Type & Size		
06 = 87 psi (6 bar) (housing fastened with clamp), only for housings in stainless steel design 16 = 230 psi (16 bar) (filter upper section threaded)	X = Latest version is always supplied	KMS = Slotted Tubes, 30 to 1000µm KMD = SuperMesh™ 25µm, 40µm, 60µm SKMS = Slotted Tube Superflush 30 µm to 1000 µm SKMD = SuperMesh™ Superflush 25µm, 40 µm, 60µm		

- RF3 — RF3-8
- RF5
- RF7
- RF10
- RF4-1
- RF4-2**
- RF4-3
- RF12
- RF14
- BTU
- ATF-1
- ATF-2
- ATF-2.5
- ATF-3
- ATF-3.5
- ATF-4
- PLF1
- PLF2
- PVD

NOTES:
 Box 5. AA only available for 16 bar.
 AP only available for 6 bar.

120 gpm
450 L/min

232 psi
16 bar



NOTES:

1. Metric dimensions in ().
2. Drawings may change without notice. Contact factory for certified drawings.

Specifications

Connection Size:	• Inlet/Outlet: G2" • Back-flush line: G¾
Flow Rate Q_{max}:	450 l/min (120 gpm)
Design Pressure p_{max}:	16 bar (232 psi)
Design Temperature T_{max}:	80° C (176°F)
Filtration Rating:	25 — 1000 µm
Filter Elements / Filter Area:	4 pieces: 1430 cm ² (222 in ²) 6 pieces: 2140 cm ² (332 in ²) 7 pieces: 2500 cm ² (388 in ²)
Housing Material:	Stainless steel cast 1.4581
Weight:	45 kg (99.2 lbs)

Backflushing Filter AutoFilt® RF4

RF4W-3

How to Build a Valid Model Number for a RF4:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	BOX 9	BOX 10	BOX 11
RF4										

Example: NOTE: One option per box

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	BOX 9	BOX 10	BOX 11
RF4	2	ET	1	NN	E	CO	2	16	X	KMS50

= RF42ET1NNECO216XKMS50

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5
Filter Type	Size	Pressure Ranges	Number of Filter Elements	Base Frame / Wall Assembly
RF4WL = Left Filter Inlet - Standard RF4WR = Right Filter Inlet	3 = G2"	2 = 10 bar (only for EU) 3 = 16 bar (EPT & EU)	4 = 4 pieces 6 = 6 pieces - Standard 7 = 7 pieces - only in case of high dirt load	0 = Without - standard 1 = For wall mounting 2 = With base frame 3 = Air-bleed valve & piping 4 = Automatic vent valve (plastic) and piping

BOX 6	BOX 7	BOX 8
Control Type	Power Supply Voltage	Version
EPT: Electro-pneumatic cyclic control A = pneumatic cyclic control EU: Electrical B = circulation control - Standard	D = Supply voltage 230VAC 50Hz/60Hz (EPT & EU) - Standard (= Gear motor, control valve or backflush valve unit 24VDC) F = Supply voltage 115VAC 60Hz (EU gear motor) (= Gear motor, control valve or backflush valve unit 24VDC) L = Supply voltage 24VDC (only for EPT)	0 = Without control, loose cable, cable length 5 meters 1 = Basic terminal box on filter, actuators & sensors on the terminal strip 2 = ACU Basic on Filter - Standard 3 = ACU Basic with 5 meters cable for wall mounting 4 = ACU (metal control cabinet, with 5 meter cable for wall mounting)

BOX 9	BOX 10	BOX 11
Differential Pressure Monitoring	Housing Material / Coating	Inner Parts
5 = HDA 4700 Stainless steel V2A (4-20 mA), 2 pieces	Stainless steel casting E2 = 1.4581(Group 316) - Standard	E1 = Stainless steel 1.4301, 1.4541 or similar (Group 304/321) - Standard E2 = Stainless steel 1.4401, 1.4404, 1.4571 or similar (Group 316)

BOX 12	BOX 13
End Documentation	Modification Number
0 = Standard (Assembly & Operating manual, E plan, Declaration of Incorporation) A = Certificate of Conformance CoC + standard B = Acceptance test certificate 3.1 according to DIN EN 10204 for design, pressure and function test + standard C = Acceptance test certificate 3.1 according to DIN EN 10204 for design, pressure and function test D = Material inspection certificates according to EN 10204, 3.1 for pressure-bearing media-contacting housing parts + standard E = additional Declaration of Conformity for TRCU 031/2013; Russian device pass incl. explanation letter for TRCU 031/2013; E = additional Declaration of Conformity for TRCU 010/2011 + standard	The latest version is always supplied (currently 2)

BOX 14
Filter Elements / Filtration Rating
S = "S" additionally prefixed for SuperFlush KNS = Wedge wire 50 µm up to 1000 µm KND = SuperMesh 25 µm, 40 µm, 60 µm (3-layer) Filtration Ratings: KNS 50 µm, 100 µm, 150 µm, 200 µm, 250 µm, 300 µm, 500 µm, 1000 µm Filtration Ratings: KND 25 µm, 40 µm, 60 µm Other filtration ratings available on request

BOX 15
Special Number
For special design (number will be issued after technical clarification in the Head Office)

RF3 —
RF3-8

RF5

RF7

RF10

RF4-1

RF4-2

RF4-3

RF12

RF14

BTU

ATF-1

ATF-2

ATF-2.5

ATF-3

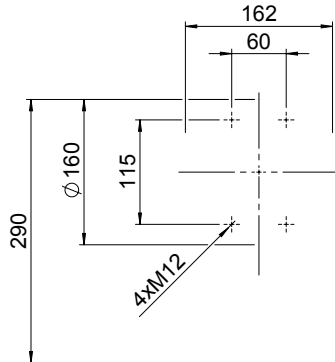
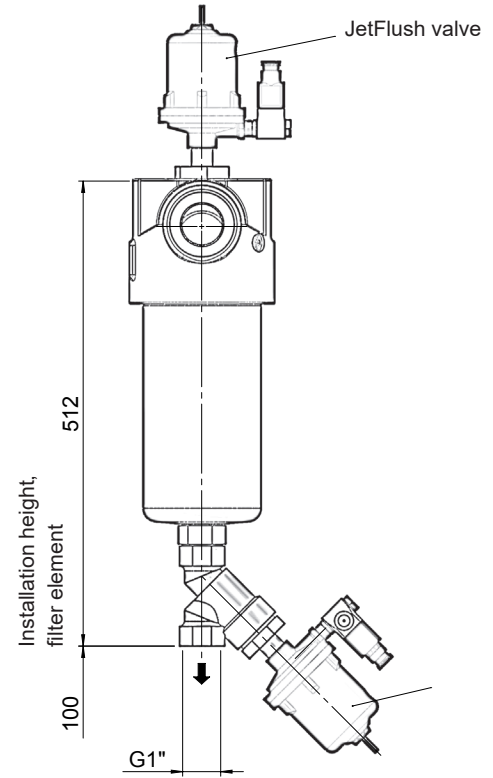
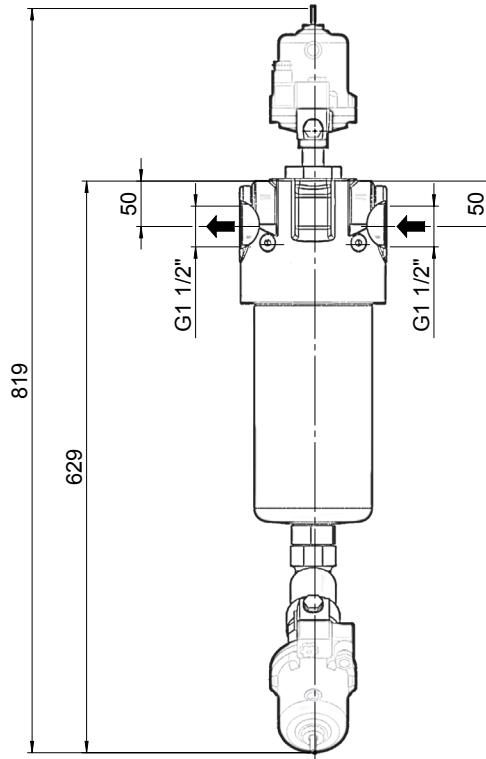
ATF-3.5

ATF-4

PLF1

PLF2

PVD

RF12**Backflushing Filter AutoFilt® RF12**21 gpm
80 L/min145 psi
10 bar**NOTES:**

1. Metric dimensions in ().
2. Drawings may change without notice. Contact factory for certified drawings.

Specifications

Process Connection:	G 1/2" Female
Max Flow:	21 gpm (80 L/min)
Max. Working Pressure:	145 psi (10 bar)
Weight:	33 lbs. (15 kg)
Housing Volume:	0.48 gallons (1.8 L)
Filter Area:	55 in. ² (356 cm ²)
No. of Filter Elements	1
Backflush Connection:	G 1" Female
Backflush Volume:	0.79 gallons (3 L/cycle)

Backflushing Filter AutoFilt® RF12

RF12

How to Build a Valid Model Number for a RF12:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8
RF12							

Example: NOTE: One option per box

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8
RF12	EP0	1	S	0	10	X	KSD25

= RF12-1-EP0-1-S-0-10-X / KSD25

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6
Filter Series RF12	Protective Filter EP0 = Electropneumatic control without pilot valves EP1 = Electropneumatic control incl. pilot valve EP2 = Electropneumatic control incl. pilot valve 24 VDC Device connector M12x1 (w/o mating connector) EP3 = Electropneumatic control incl. pilot valve 230 VAC Device connector DIN En 175301-803 / form A (w/o mating connector) EPZ3 = Electropneumatic control incl. pilot valve 230 VAC, with timer control (1 x 230V/N/PE 50 Hz) EPD3 = Electropneumatic control incl. pilot valve 230 VAC, with differential pressure control (1 x 230V/N/PE 50 Hz)	Material Filter housing: 1 = aluminum, internal parts: stainless steel	Back-Flushing Valve 0 = Without G1" connection CO = Coaxial valve, brass KN = Ball valve, brass nickel-plated S = Piston control valve, brass	Differential Pressure Monitoring 0 = Without differential pressure monitoring 5 = 2x HDA 4700 stainless steel (4-20 mA) 7 = Fixed value 0.5 bar. Type GW, n.c. contact	Pressure Range 10 = 145 psi (10 bar)
Modification Code X = Latest version is always supplied	Filter Elements / Filtration Rating S = Preceded with an additional "S" for SuperFlush non-sticking coating KSS = Wedge wire 30µm KSS = SuperMesh wire mesh, sintered, 25 µm / 40 µm / 60 µm; others on request				

Filter Model Number Selection

- RF3 —
- RF3-8
- RF5
- RF7
- RF10
- RF4-1
- RF4-2
- RF12**
- RF12
- RF14
- BTU
- ATF-1
- ATF-2
- ATF-2.5
- ATF-3
- ATF-3.5
- ATF-4
- PLF1
- PLF2
- PVD

15,400 gpm
58,295 L/min

88 psi
6 bar

The AutoFilt® RF14 is a self-cleaning system for extracting particles from low viscosity fluids. Its robust construction and automatic back-flushing capability make a major contribution to operational reliability and reduce operating and maintenance costs. The slotted or SuperMesh baskets in the filter with filtration rates from 10 to 100µm ensure highly effective filtration of contaminating particles from the process medium.

Automatic cleaning starts as soon as the elements become contaminated. The flow of filtrate is not interrupted during the back-flushing procedure. A range of filters of different sizes allow flow rates of up to 15,400 gpm. Numerous combinations of materials and equipment as well as individually adjustable control parameters allow optimum adaptation of the filter to any application.

This type of fully automatic self-cleaning screen filter has been used for decades in applications wherever suspended solids need to be removed from a pressurized water stream. They are used to remove sand, silt and algae from raw water taken from lakes, ponds, rivers and canals. Such filters provide pretreatment before membrane filtration systems for potable water supply. Other installations include pretreatment for reverse osmosis and other desalination systems. Many municipal and industrial wastewater treatment plants use these filters to prepare secondary effluent for reuse in cooling, irrigation and aquifer recharge systems. Applications in steel mills filtering grimy, oily cooling water are common as are those in the automotive and plastics industries. Cement plants and mining operations use this type of filter for removing solids from tailings. They are found on deep-sea oil platforms for filtering flood water and on ships before portable desalination systems and ballast systems.

Filtration

A back-flushing cycle is complete once the basket element has been cleaned. Filter continues to filter and forward flow is not impeded by backwash cycle.

Special Features of the AutoFilt® Isokinetic Filtering and Back-Flushing

The special configuration of the filter basket elements allows even flow, resulting in low pressure drops and complete cleaning of the elements. The advantage: fewer back-flushing cycles and reduced loss of back-flushing fluid.

Pulse-aided Back-Flushing on the control types EPT and PT; the filter basket to be backflushed remains in the flushing position for only a few seconds. Rapid opening of the pneumatic back-flushing valve generates a pressure surge in the filter nozzle openings, providing an additional cleaning effect to the back-flushing process as it cleans the basket as it rotates around the basket area.

Low Back-Flushing Quantities due to cyclic control the back-flushing valve opens and closes during back-flushing. The filter, which produces particularly good flow rates, is of a compact construction with high filtration performance and low pressure drops. The RF14 will use less than 0.5% of the forward flow for backwash.

The fluid to be filtered flows through the slotted filter basket element of the back-flushing filter, passing from the inside to the outside.

Contamination particles then collect on the smooth inside of the filter basket elements. As the level of contamination increases, the differential pressure between the contaminated and clean sides of the filter increases. When the differential pressure reaches its preset value, back-flushing starts automatically.

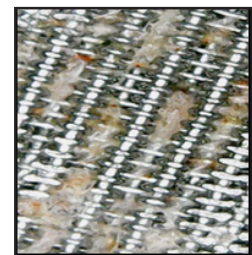
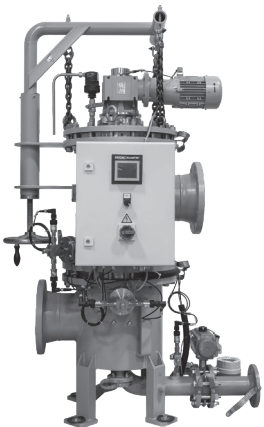
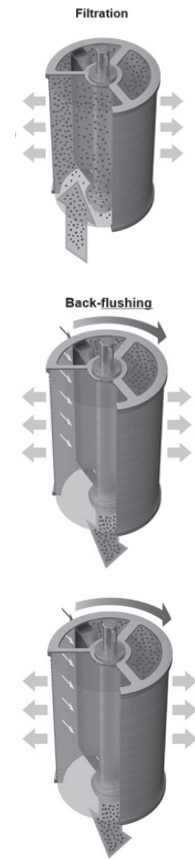
Triggering Automatic Back-Flushing

Back-flushing is triggered automatically: when the triggering differential pressure is exceeded. **Back-flushing can also be started:**

- By means of an adjustable timer (optional)
- By pressing the TEST key
- As soon as back-flushing has been triggered, the filter starts to clean the filter basket

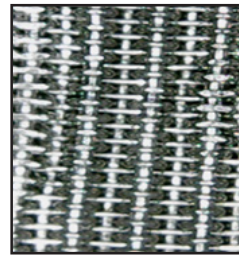
Back-Flushing of the Filter Basket Elements - Back-Flushing Cycle

- The gear motor rotates the nozzles around the interior of the basket
- The back-flushing valve is opened
- The pressure drop between the filtrate side and the back-flushing line rinses a small partial flow of the filtrate in the opposite direction into the filter elements to be cleaned. The contamination particles deposited on the inside of the filter basket element are detached and carried out via the nozzles into the back-flushing line.



Before Cleaning

- After the back-flushing time is complete, the back-flushing valve is closed. In this way, the nozzles have cleaned all areas of the filter basket.
- Initiating the most effective and instantaneous back-flush differential at all areas of the basket filter.



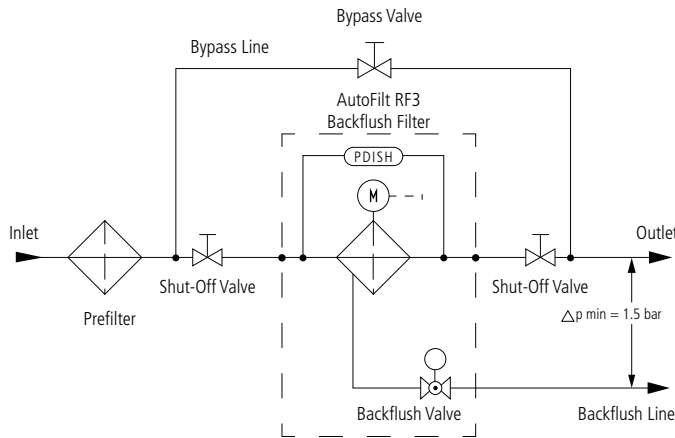
After Cleaning

Variable Filter Isometry

The inlet and outlet flanges as well as the back-flushing line can be configured in different positions. This means that the filter can be easily integrated into any plant lay-out.

Ready-to-Operate Unit

The filter control unit and differential pressure measuring line are already connected. Once the filter has been fitted to the pipework, only the auxiliary power supply needs to be connected.



Filter Size	Operating Pressure min-max psi	Inlet/Outlet (in) Plain Weave	Inlet/Outlet (in) Delta Mesh	Backflush Line (in)	Weight (lbs) Operating	Volume (gal.)	Length (in)	Width (in)	Foot-print (in ²)	Clean Pressure Differential (psi)
10	29-97	4"	5"	2"	584.22	8.98	19.685	19.685	11.811	1.45
15	29-97	6"	8"	2.5"	742.96	17.17	23.622	19.685	11.811	1.45
20	29-97	8"	10"	3"	930.35	38.04	27.559	23.622	15.748	1.45
25	29-97	10"	12"	3"	1,219.15	73.18	27.559	27.559	19.685	1.45
30	29-97	12"	14"	4"	1,924.63	105.67	39.37	27.559	27.559	1.45
35	29-97	14"	16"	4"	2,612.47	108.31	43.307	27.559	31.496	1.45
40	29-97	16"	18"	4"	3,714.78	234.32	47.244	35.433	43.307	1.45
45	29-97	18"	20"	4"	4,166.763	369.05	51.181	43.307	55.118	1.45
50	29-97	20"	24"	5"	5,103.70	446.98	55.118	43.307	59.055	1.45
60	29-97	24"	28"	5"	7,605.94	747.61	62.992	51.181	82.677	1.45

Filter Size	Min. Backwash Volume (gal.)	Min. Flow (gpm)	Max Flow (gpm) w/ Delta Mesh 40 micron
10	10.70	229	616
15	13.91	387	1,166
20	16.91	572	2,288
25	16.91	572	3,036
30	22.20	986	4,400
35	22.20	986	5,000
40	22.20	986	5,280
45	22.20	986	8,800
50	27.75	1,540	11,440
60	27.75	1,540	15,400

RF3 —
RF3-8

RF5

RF7

RF10

RF4-1

RF4-2

RF4-3

RF14

RF14

BTU

ATF-1

ATF-2

ATF-2.5

Specifications

ATF-3

ATF-3.5

ATF-4

PLF1

PLF2

PVD

Filter Model Number Selection

How to Build a Valid Model Number for a RF14:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	BOX 9	BOX 10	BOX 11
RF14M										

Example: NOTE: One option per box

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	BOX 9	BOX 10	BOX 11
RF14M	252	F	S	0	X	P	J	K	VN	5

BOX 1

Filter Type
RF14M = Marine Model
RF14J = Industry model*

BOX 4

Design Code
S = HYDAC Standard
A = ASME VIII Div. 1
U = ASME VIII Div. 1
E = EN 13445

BOX 5

Control Type
0 = Without control, with terminal box Without control,
1 = without terminal box, cable loose
2 = EPS Electro-pneumatic control with AutoFilt® ACU
Y = Customer-specific model

BOX 9

Pressure Range
A = PN 6
B = PN 10

BOX 2

Connection Flange	RF14 Size									
	10	15	20	25	30	35	40	45	50	60
1	5"	8"	10"	12"	14"	16"	18"	20"	24"	28"
2	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"
3	3"	5"	6"	8"	10"	12"	14"	16"	16"	20"
4	2.5"	4"	5"	6"	8"	10"	12"	12"	14"	16"
5	2"	3"	4"	5"	6"	8"	10"	10"	12"	14"
Y	Customer Specific Model									

BOX 3

Flange Standard Connection Point
A = ANSI
F = DIN / EN
J = JIS

BOX 6

Connection Voltage
1 = 3 x 400V / N / PE 50 Hz
2 = 3 x 400V / X / PE 50 Hz
3 = 3 x 500V / X / PE 50 Hz
4 = 3 x 230V / N / PE 50 Hz
5 = 3 x 230V / X / PE 50 Hz
Y = Customer-specific model
6 = 3 x 415V / X / PE 50 Hz
7 = 3 x 415V / X / PE 50 Hz
8 = 3 x 460V / X / PE 60 Hz
9 = 3 x 440V / X / PE 60 Hz
A = 3 x 525V / X / PE 50 Hz
B = 3 x 575V / X / PE 60 Hz
C = 3 x 690V / X / PE 50 Hz
G = 3 x 415V / N / PE 50 Hz
H = 3 x 220V / X / PE 60 Hz
I = 3 x 380V / X / PE 50 Hz
K = 3 x 480V / X / PE 60 Hz

BOX 7

Explosion-Protection
X = EX-protection according to ATEX
C = EX-protection according to IECEx

Specification omitted, if not applicable

BOX 8

Housing / Corrosion Protection Material
N = Carbon steel, primer (RAL 7040), inside without corrosion protection
M = Carbon steel, primer (RAL 7040), inside 2-comp. epoxy coating
P = Carbon steel, primer (RAL 7040), inside 2-comp. Highly cross-linked PU-lining
E = Stainless steel 1.4301, 1.4541 or similar (Group 304/321)
H = Stainless steel 1.4571 or similar (group 316)

BOX 10

Material Back-Flush Valve Unit
N = Butterfly valve: spheroidal graphite cast iron-coated housing, stainless steel disc and shaft, NBR seal
B = Butterfly valve: spheroidal graphite cast iron-coated housing, bronze disc and shaft, NBR seal
M = Butterfly valve: spheroidal graphite cast iron-coated housing, Super-Duplex disc and shaft, NBR seal
V = Butterfly valve: spheroidal graphite cast iron-coated housing, stainless steel disc and shaft, FKM/FPM seal

BOX 11

Pressure Transmitter
0 = Without pressure transmitter (Pressure measurement connection to the filter is retained)
5 = HDA 4700 stainless steel V2A group (not for filter model M - marine)
6 = HDA 4300 Duplex

cont. on next page

Backflushing Filter AutoFilt® RF14

RF14

How to Build a Valid Model Number for a RF14:

BOX 12	BOX 13	BOX 14	BOX 15	BOX 16	BOX 17	BOX 18	BOX 19
1							

Example: NOTE: One option per box

BOX 12	BOX 13	BOX 14	BOX 15	BOX 16	BOX 17	BOX 18	BOX 19
1	H	345P	0	M	H	A	40

= RF14M252FS21XPAN51H345P0MHA40

BOX 12 Flange Position

- Filter outlet
- 1 = opposite filter inlet (Standard)
- Filter outlet offset
- 2 = 90° clockwise to default
- Filter outlet offset
- 3 = 180° clockwise to default
- Filter outlet offset
- 4 = 270° clockwise to default

BOX 13 Internal Parts

- Stainless steel
- H = 1.4404 or similar (group 316)
- Stainless steel
- E = 1.4301, 1.4541 or similar material (group 304/x321)
- D = Duplex
- S = SuperDuplex

BOX 14 Options

- 0 = Without
- 1 = Without integrated protection basket
- 2 = With davit
- 3 = Pressure transmitter in back-flush line
- 4 = Top coat RAL 7040
- 5 = Automatic vent vale (plastic)
- 6 = Automatic vent valve (stainless steel/SuperDuplex)
- 7 = With sacrificial anode (O-ring material made of silicone element, conductive)
- A = Certificate of Conformance CoC
- B = Acceptance test certificate 3.1 acc. to DIN EN 10204 for design, pressure and function test
- Acceptance test certificate 3.1 acc. to DIN EN 10204 for design, pressure and function test incl. material cert. acc. to EN 10204, 3.1 for the pressure bearing vessel parts in contact with media
- C =
- D = Material products to EN 10204, 3.1 for pressurized vessel parts that come into contact with media
- P = With back-flush pump

BOX 15 Modification Number

- 0 = The latest number will be supplied

BOX 16 Filter Element

- M = Marine model
- J = Industry model

BOX 17 Material Type

- Stainless steel 1.4404 or similar (group 316)
- H =
- Stainless steel
- E = 1.4301, 1.4541 or similar material group
- D = Duplex
- S = SuperDuplex

BOX 18 Material Type

- A = Wire Mesh Plain
- B = Wire Mesh Δ - Mesh
- only for sizes 10 - 35

BOX 19 Nominal Filtration Rating

AutoFilt® RF14	Filter Model		→ Recommended Flange Sizes*									
Filtration Ratings	Marine (M)	Industry (J)	Filter Element Type A				Filter Element Type B					
10µm	-	X				4	5					
20µm	X	X				3	4	5		2	3	
30µm	-	X				3	4					
40µm	X	X				2	3		1	2		
50µm	X	X	1	2				1	2			
70µm	-	X	1	2								
90µm	-	X	1									

Filter Model Number Selection

- RF3 — RF3-8
- RF5
- RF7
- RF10
- RF4-1
- RF4-2
- RF4-3
- RF14**
- RF14
- BTU
- ATF-1
- ATF-2
- ATF-2.5
- ATF-3
- ATF-3.5
- ATF-4
- PLF1
- PLF2
- PVD

* Model recommendation based on experiences with sea-water and serves only as orientation

Seal material of filter element without anode is identical to seal material of the butterfly valve

Seal material of filter element with anode is always silicone

32-1120
gpm
120-4235
L/min

150 psi
10 bar



The BTU unit with integral backflushing filter is a turnkey automatic filtration unit for watermiscible cooling lubricants, oils or washing water which continuously filters solid particles, such as very fine magnetic and non-magnetic metal particles, corundum, sand particles etc. It provides long-term filtration producing reduced-particle filtrate. The quality of the filtrate is dependent on the separation limit of the filter used.

A BTU unit generally consists of:

- Backflushing filter for the main filtration
- Process twist sieve (PTS) to treat the backflushed volume
- Buffer tank with components (only BTU1)
- Control

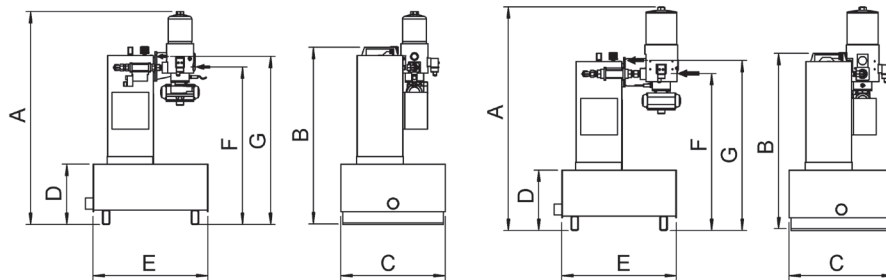
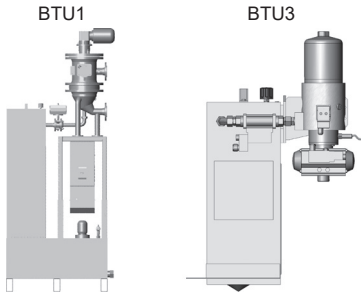
The process twist sieve (PTS) is a component which is fitted downstream from the backflushing filter to filter the backflushed volume. In this way, with the help of the twist sieve, a further filtration process is carried out via the backflushing line.

The solid particles from the backflushing volume are collected in a bag filter which is suspended under the twist sieve. When this is full, it is easy to dispose of by pulling open the drawer.

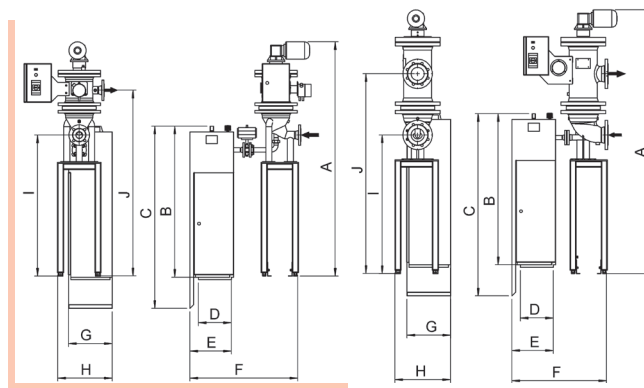
The fluid filtered by the twist sieve or the bag flows back to the buffer tank (BTU1). As soon as the fluid level in the buffer tank reaches the upper switch point of the level gauge (optional), the tank pump (optional) empties the tank.

Due to the short-term pressure shock when backflushing the automatic filter and due to the tangential inlet flow, the fluid is filtered by the wire mesh inside the twist sieve. Approx. 70 % of the backflushing volume passes through the twist sieve and is therefore already filtered when it flows into the buffer tank below the filter via the channel on one side of the twist sieve.

The remaining 30 % of fluid which is heavily contaminated with particles is forced by the centrifugal force and gravity through an opening in the floor of the twist sieve down into a bag filter. The fluid is filtered through the bag from the inside to the outside. Particles are retained and the cleaned emulsion flows into the buffer tank. The pressure shock ensures that the wire mesh (TopMesh) is flushed at every backflushing process, i.e. the twist sieve is self-cleaning and practically maintenance-free.



Type	A	B	C	D	E	F	G
BTU3 with RF3-CG	1162	972	570	330	626	860	917
BTU3 with RF3-0G	1223	972	570	330	626	860	929



Type	A	B	C	D	E	F	G	H	I	J
BTU3 with RF3-CG	1877	1210	1460	264	332	867	350	437	1130	1488
BTU3 with RF3-0G	2113	1210	1460	264	332	760	350	446	1110	1600

Backflush Treatment Unit



How to Build a Valid Model Number for a BTU:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8
BTU1							

Example: NOTE: One option per box

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	
BTU1	80	PP	50	EE	S	T	X	= BTU1-80-P-50-EE-S-T-X

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5
Unit Type	Filtration Rating	Bag Filter Material	Bag Filter Filtration Rating	Twist Sieve Housing/ Buffer Tank Material
BTU1 = Add-on unit BTU3 = Tank-top unit	25 = D25 40 = D40 60 = D60 80 = D80 100 = D100 150 = D150	PE = Polyester PP = Polypropylene N = Nylon	25 = 25 µm 50 = 50 µm 100 = 100 µm 150 = 150 µm	EE = Housing and buffer tank: stainless steel EN = Housing: stainless steel; buffer tank: carbon steel NN = Housing and buffer tank: carbon steel NE = Housing: carbon steel; buffer tank: stainless steel EEE = Housing, buffer tank, filter frame: stainless steel

BOX 6	BOX 7	BOX 8
Control Functions	Pump	Modification Number
0 = Unit without control function N1 = Level monitoring of buffer tank N2 = Level monitoring of bag filter N3 = Level monitoring of buffer tank and bag filter S = Control complete	0 = 150 psi (10 bar) T = Return pump in buffer tank (only possible with BTU1)	X = The latest version is always supplied

Filter Model Number Selection

- RF3 — RF3-8
- RF5
- RF7
- RF10
- RF4-1
- RF4-2
- RF4-3
- RF12
- BTU**
- BTU
- ATF-1
- ATF-2
- ATF-2.5
- ATF-3
- ATF-3.5
- ATF-4
- PLF1
- PLF2
- PVD

**AutoFilt®
Model
Number
Selection**

How to Build a Valid Model Number for an AutoFilt® for BTU:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8
A							

Example: NOTE: One option per box

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	
A	E	1	E	E	E	2	L	= A-E-1-E-E-E-2-L

BOX 1	BOX 2	BOX 3
AutoFilt® A = RF3-C B = RF3-CG D = RF3-0 E = RF3-0G F = RF3-1 G = RF4-1 H = RF4-2	Control 0 = w/o E = EPT	Voltage RF3 0 = w/o control 1 = 3x 400 V/N/PE, 50 Hz 2 = 3x 400 V/X/PE, 50 Hz 3 = 3x 500 V/X/PE, 50 Hz 4 = 3x 230 V/N/PE, 50 Hz 5 = 3x 230 V/X/PE, 50 Hz 6 = 3x 415 V/X/PE, 50 Hz 7 = 3x 415 V/N/PE, 50 Hz 8 = 3x 460 V/N/PE, 50 Hz RF4 M = with control*; with solenoid valve 230 V AC N = with control*; with solenoid valve 24 V DC O = w/o control*; with solenoid valve 230 V AC P = w/o control; with solenoid valve 24 V DC

BOX 4		
Materials Of Housing (RF3 Only)	Materials Of Housing (RF4-1 Only)	Materials Of Housing (RF4-2 Only)
0 = Carbon steel, external primer ("N") 1 = Carbon steel, external primer, internal coating ("NM") 3 = Stainless steel ("E")	AA = Configuration (AAE): aluminum, aluminum, stainless steel EE = Configuration (EEE): stainless steel, stainless steel, stainless steel	NN = Configuration (NNE): carbon steel, carbon steel, stainless steel EE = Configuration (EEE): stainless steel, stainless steel, stainless steel

BOX 5	BOX 6
Materials Of Backflushing Valve RF3 N = Carbon Steel E = Stainless Steel RF4 1 = Coaxial Valve 2 = Ball Valve	Differential Pressure Gauge RF3 1 = Pressure Chamber Aluminum 2 = Pressure Chamber Stainless Steel 3 = With chemical seal/ Stainless Steel RF4 F = Fixed value: 0.5 bar A = Adjustable: 0.1 - 1.0 bar G = GW indicator, N/C

BOX 7	BOX 8		
Flange Options (RF3 only)	Filter Elements (RF3)	(RF4-1)	(RF4-2)
1 = Filter outlet opposite filter inlet (standard) (not for RF3-C) 2 = Filter outlet offset by 90° clockwise to standard 3 = Filter outlet offset by 180° clockwise to standard	B = KD25 C = KD40 D = KD60 E = KD80 L = KS50 M = KS100 N = KS150	B = KMD25 C = KMD40 D = KMD60 E = KMD80 L = KMS50 M = KMS100 N = KMS150	B = KND25 C = KND40 D = KND60 E = KND80 L = KNS50 M = KNS100 N = KNS150

Backflush Treatment Unit



How to Build a Valid Model Number for a Process Twist Sieve:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	BOX 9
PTS								

Example: NOTE: One option per box

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	BOX 9
PTS	40	250	E	L	2		50	

= PTS-40-250-E-L-2-50

BOX 1	BOX 2	BOX 3	BOX 4
Unit Type	Filtration Rating	Diameter	Housing Material
PTS = Process twist sieve	25 = D25 40 = D40 60 = D60 80 = D80 100 = D100 150 = D150	180 = Ø 180 mm (only for RF4, without) 180/1 = Ø 180 mm (only for RF4-1, with bracket) 180/2 = Ø 180 mm (only for RF4-2, with bracket) 250 = Ø 250 mm (only for RF3-C and RF3-0) 450 = Ø 450 mm (only for RF3-1)	N = Carbon steel, primed E = Stainless steel

BOX 5	BOX 6	BOX 7	BOX 8
Housing Length	Level Switch	Bag Filter Material	Bag Filtration Rating
K = Short (standard for PTS-180) L = Long (standard for PTS-250/450)	0 = Without 1 = With level switch stainless steel (only for diameters 250 mm, 450 mm)	PE = Polyester PP = Polypropylene N = Nylon	25 = 25 µm 50 = 50 µm 100 = 100 µm 150 = 150 µm

BOX 9
Modification Number
X = The latest version is always supplied

Process Twist Sieve Model Number Selection

- RF3 — RF3-8
- RF5
- RF7
- RF10
- RF4-1
- RF4-2
- RF4-3
- RF12

- BTU
- BTU
- ATF-1
- ATF-2
- ATF-2.5
- ATF-3
- ATF-3.5
- ATF-4
- PLF1
- PLF2
- PVD

Automatic Twist Flow Strainer ATF



ATF

- Perfect pre-filter
- Great for high contamination levels
- Low pressure drop

Automatic Twist Flow Strainer

The Schroeder Automatic Twist Flow Strainer (ATF) is designed for the filtration of solid particles from water or fluids similar to water. With filtration ratings between 200 μm and 3,000 μm , the ATF is particularly well suited for separating suspended solid particles, up to several grams per liter, from low-viscosity fluids. In order to filter higher flow rates, the ATF can be supplied as a skid solution (call factory for details).

Construction and Function

This filter is a hybrid system consisting of a centrifugal separator and an inline filter. The fluid to be cleaned enters the housing tangentially, similar to a centrifugal separator, and accelerates down as a result of the tapered housing. The resulting spiral flow with its centrifugal force carries the coarsest contamination first (its density is obviously higher than that of the fluid) to the inner wall of the housing.

Filtration

When pressed against the filter wall, the higher density particles settle at a higher rate in the lower part of the filter, where they are finally carried out. The remaining smaller, less dense particles are filtered as the fluid passes through the element and exits the filter.

The conical filter element ensures optimum flow characteristics. On one hand it makes possible continual self-cleaning of the filter during operation. While on the other, it makes the pressure drop of the whole filter much lower than compared with a centrifugal separator of a similar size.

Cleaning Procedure

Both the sediment particles and those separated by the filter element finally collect at the bottom of the housing and are discharged periodically from the system by opening the contamination flap. During this cleaning procedure (depending on the installation of the ATF), part of the untreated fluid flow is used for a few seconds to flush the elements and clean the filter. Because partial flow is used, continuous filtration occurs.

In addition, the ATF is an excellent choice for bypass flow applications which are able to do without a partial flow for short periods of time.

Depending on the application and the amount of solid particles, the cleaning function can be adjusted via a timer function.

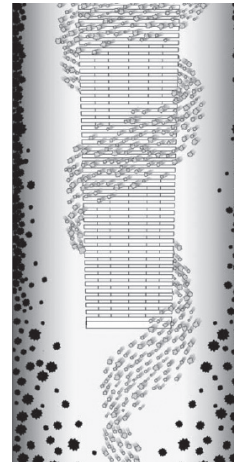
Special Features of the ATF

The ATF is well suited to high levels of contamination and large fluctuations in the solid particle content of the untreated water.

Due to the use of conical slotted tube and sintered wire meshes, a precise selectivity and therefore a constant filtrate quality is ensured – independent of fluctuations in operating pressure or flow rate.

Due to special flow conditions resulting from the element geometry and their arrangement, the pressure drop on the overall unit is relatively low at < 14.5 psi (1.0 bar).

The pre-filtration of solid particles of a higher density implies that the filter surface area can take a correspondingly higher load and the filter size can therefore be comparatively smaller.



Backflush Mode



Filtration Mode

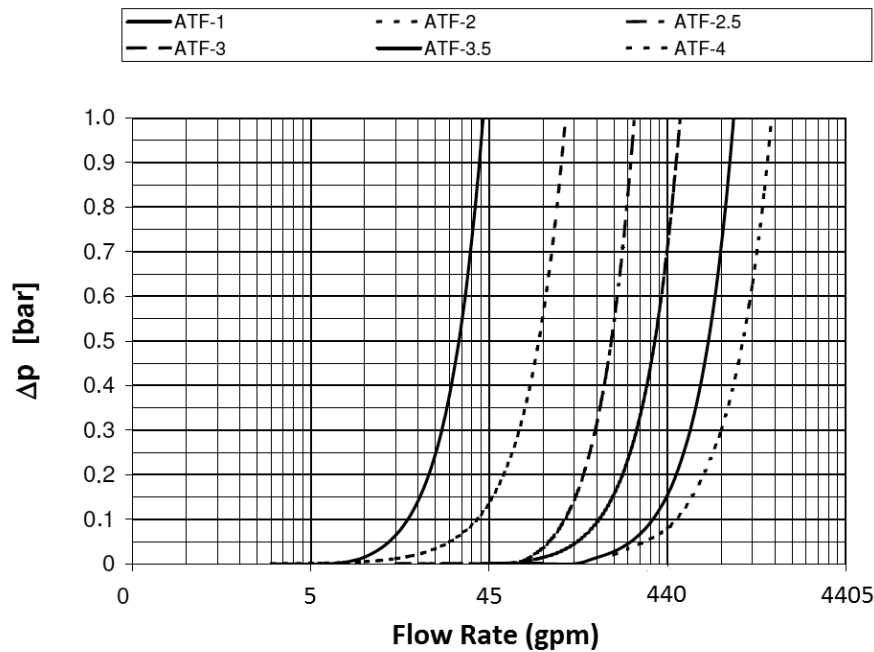
Automatic Twist Flow Strainer ATF

The filter elements are cleaned solely by flushing with untreated fluid.

The ATF saves on space in comparison to conventional separating units, such as lamellar separators or sand filters.

Several ATF's can be integrated into systems, and as a result, can adapt to the required flow rates.

The filter element of the ATF is maintenance-friendly, as it is equipped with a flange cover. On sizes 2 to 4, it is also possible to replace the filter element without needing to open the filter.



Pressure Drop Graph

The ATF is sized based on the pressure drop curve. A further factor in the calculation is the flow velocity through the inlet flange. It should not exceed 13.12 feet/minute (4 m/s).

In order to be able to size the ATF correctly, the following design data should be available:

- Flow rate
- Type of medium
- Materials / resistance
- Viscosity
- Required filtration rating
- Particulate loading in the fluid
- Solid particle type and density / densities
- Operating pressure
- Operating temperature

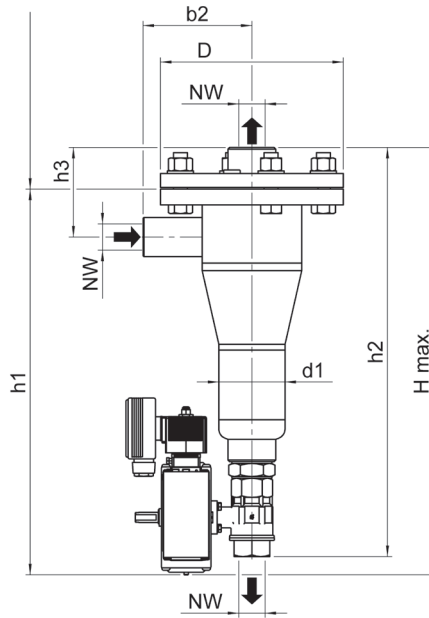
Filter Calculation and Sizing



Industries Served

35 gpm
132 L/min

230 psi
16 bar



Filter Size	NW in (mm)	H Max. in (mm)	h1 in (mm)	h2 in (mm)	h3 in (mm)	b2 in (mm)	D in (mm)	d1 in (mm)	Installation Height in (mm)
ATF 1	0.04 (1)	19.29 (490)	17.52 (445)	18.50 (470)	4.06 (103)	4.92 (125)	8.27 (210)	3.00 (76.1)	13.78 (350)

Filter Housing Specifications

Filtration Rate: 200-3000 µm slotted tube only

Operating Rate: 32°F - 194°F (0°C - 90°C)

Housing Material: Stainless Steel or Carbon Steel

Size: 1

Flow Rate: 8-35 gpm
(30-132 L/m)

Pressure Rating: 230 psi
(16 bar)

Connections Inlet/Outlet: 1" NPT
(G 1")

Connection Discharge Line: 1" NPT
(G 1")

Filter Area: 23 in²
(150 cm²)

Weight: 33 lbs
(15 kg)

Volume: 0.5 gal
(1.8 L)

Automatic Twist Flow Strainer ATF-1

ATF

How to Build a Valid Model Number for a ATF-1:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	BOX 9	BOX 10	BOX 11
ATF										

Example: NOTE: One option per box

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	BOX 9	BOX 10	BOX 11
ATF	1	EPZ	1	E	NN	10	0	X	UKS2	200

= ATF1EPZ1ENN100X-UKS2200

BOX 1	BOX 2	BOX 3	BOX 4
Filter Series	Size	Control Type	Voltage
ATF	1 = Inlet/Outlet 1" NPT	0 = No controls/No valves M = Manual valve EP = Electro-pneumatic discharge valve, with timer control EPZ = Electro-pneumatic discharge valve, with timer control E = Electric discharge valve, without timer control EZ = Electric discharge valve, with timer control	1 = 230 VAC, 60 Hz, Single Phase 2 = 110VAC, 60 Hz, Single Phase 3 = 24VAC, 60 Hz, Single Phase 4 = 24VDC Omit if no control type specified

BOX 5	BOX 6	BOX 7	BOX 8
Housing Material	Discharge Valve	Pressure Rating	Accessories
N = Carbon Steel E = Stainless Steel A = for ANSI flanges, also add A J = for JIS flanges, also add J T = NPT thread (size 1 only), also add T Internal Coating with P = 2-K polyurethane paint, also add P	0 = None Butterfly valve, cast housing NN = coated, disc Stainless Steel, cuff BR (not available on size 1) Butterfly valve, cast housing NE = coated, disc Stainless Steel, cuff EPDM (not available on size 1) Butterfly valve, cast housing NV = coated disc Stainless Steel, cuff Viton (not available on size 1) Butterfly valve, cast housing BN = coated, disc Bronze, cuff NBR (not available on size 1) Butterfly valve, cast housing BE = coated, disc Bronze, cuff EPDM (not available on size 1) Butterfly valve, cast housing BV = coated, disc Bronze, cuff Viton (not available on size 1) E = Ball valve Stainless Steel (size 1 only) M = Ball valve brass (size 1 only)	10 = 145 psi (10 bar) 16 = 230 psi (16 bar)	0 = None 1 = Base frame (size 2, 2.5 and 3 only) 2 = Mounting clips (size 2, 2.5 and 3 only) 3 = Differential pressure gauge in aluminum (fitted to customer's equipment) 4 = Differential pressure gauge in stainless steel (fitted to customer's equipment) 5 = Differential pressure gauge in brass (fitted to customer's equipment)

BOX 9	BOX 10	BOX 11
Modification Number	Element Set	Filtration Rating
X = Latest version supplied by factory	UKS1 = Conical Slotted Tube for size 1 UKS2 = Conical Slotted Tube for size 2 UKS2.5 = Conical Slotted Tube for size 2.5 UKS3 = Conical Slotted Tube for size 3 UKS3.5 = Conical Slotted Tube for size 3.5 UKS4 = Conical Slotted Tube for size 4	200 = 200 µm (not for size 4) 300 = 300 µm (not for size 4) 500 = 500 µm 1000 = 1000 µm 2000 = 2000 µm 3000 = 3000 µm

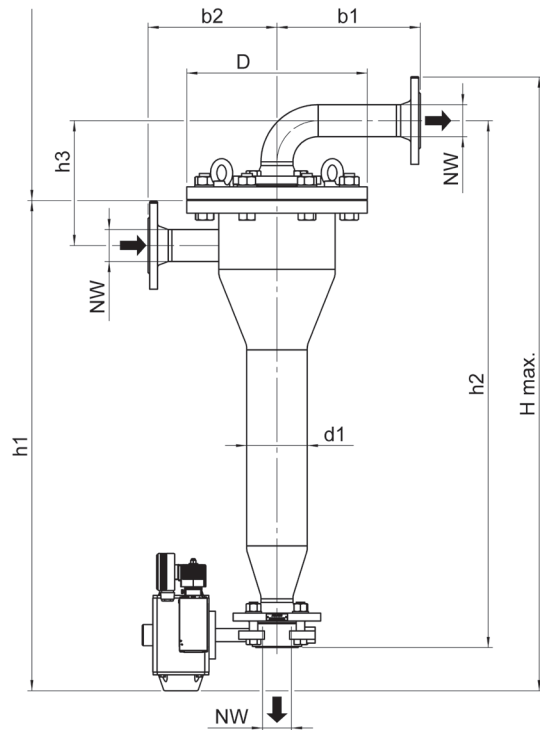
- RF3 — RF3-8
- RF5
- RF7
- RF10
- RF4-1
- RF4-2
- RF4-3
- RF12
- RF14

ATF-1

- ATF-1
- ATF-2
- ATF-2.5
- ATF-3
- ATF-3.5
- ATF-4
- PLF1
- PLF2
- PVD

480 gpm
1816 L/min

230 psi
16 bar



Filter Size	NW in (mm)	H Max. in (mm)	h1 in (mm)	h2 in (mm)	h3 in (mm)	b1 in (mm)	b2 in (mm)	D in (mm)	d1 in (mm)	Installation Height in (mm)
ATF 2	1.97 (50)	45.67 (1160)	36.42 (925)	39.17 (995)	9.25 (235)	10.63 (270)	9.57 (243)	13.39 (340)	4.50 (114.3)	19.69 (500)
ATF 2.5	3.15 (80)	56.50 (1435)	44.88 (1140)	48.62 (1235)	12.40 (315)	8.66 (10.24)	11.02 (280)	15.55 (395)	5.50 (139.7)	25.59 (650)
ATF 3	3.94 (100)	68.90 (1750)	55.12 (1400)	59.06 (1500)	13.78 (350)	10.24 (260)	12.68 (322)	17.52 (445)	8.63 (219.1)	39.37 (1000)

Filter Housing Specifications

Filtration Rate: 200-3000 µm slotted tube only			
Operating Rate: 32°F - 194°F (0°C - 90°C)			
Housing Material: Stainless Steel or Carbon Steel			
Size:	2	2.5	3
Flow Rate:	20-110 gpm (75-416 L/m)	65-260 gpm (246-984 L/m)	85-480 gpm (321-1816 L/m)
Pressure Rating:	145 or 230 psi (10 or 16 bar)	145 or 230 psi (10 or 16 bar)	145 or 230 psi (10 or 16 bar)
Connections Inlet/Outlet:	2" Flange (DN 50)	3" Flange (DN 80)	4" Flange (DN 100)
Connection Discharge Line:	2" Flange (DN 50)	3" Flange (DN 80)	4" Flange (DN 100)
Filter Area:	55 in ² (360 cm ²)	150 in ² (966 cm ²)	266 in ² (1720 cm ²)
Weight:	132 lbs (60 kg)	297 lbs (135 kg)	440 lbs (200 kg)
Volume:	3.5 gal (13.5 L)	7.4 gal (28 L)	14.5 gal (55 L)

Automatic Twist Flow Strainer ATF-2, ATF-2.5, ATF-3



How to Build a Valid Model Number for a ATF-2, 2.5 and 3:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	BOX 9	BOX 10	BOX 11
ATF										

Example: NOTE: One option per box

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	BOX 9	BOX 10	BOX 11
ATF	2	EPZ	1	E	NN	10	0	X	UKS2	200

= ATF2EPZ1ENN100X-UKS2200

BOX 1	BOX 2	BOX 3	BOX 4
Filter Series	Size	Control Type	Voltage
ATF	2 = Inlet/outlet 2" ANSI flange Inlet/outlet 3" ANSI flange 2.5 = Inlet/outlet 3" ANSI flange Inlet/outlet 4" ANSI flange 3 = Inlet/outlet 4" ANSI flange	0 = No controls/No valves M = Manual valve EP = Electro-pneumatic discharge valve, with timer control EPZ = Electro-pneumatic discharge valve, with timer control E = Electric discharge valve, without timer control EZ = Electric discharge valve, with timer control	1 = 230 VAC, 60 Hz, Single Phase 2 = 110VAC, 60 Hz, Single Phase 3 = 24VAC, 60 Hz, Single Phase 4 = 24VDC Omit if no control type specified

BOX 5	BOX 6	BOX 7	BOX 8
Housing Material	Discharge Valve	Pressure Rating	Accessories
N = Carbon Steel E = Stainless Steel A = for ANSI flanges, also add A J = for JIS flanges, also add J T = NPT thread (size 1 only), also add T Internal Coating with P = 2-K polyurethane paint, also add P	0 = None Butterfly valve, cast housing NN = coated, disc Stainless Steel, cuff BR (not available on size 1) Butterfly valve, cast housing coated, disc Stainless Steel, cuff EPDM (not available on size 1) NE = Butterfly valve, cast housing coated, disc Stainless Steel, cuff EPDM (not available on size 1) NV = Butterfly valve, cast housing coated disc Stainless Steel, cuff Viton (not available on size 1) BN = Butterfly valve, cast housing coated, disc Bronze, cuff NBR (not available on size 1) BE = Butterfly valve, cast housing coated, disc Bronze, cuff EPDM (not available on size 1) BV = Butterfly valve, cast housing coated, disc Bronze, cuff Viton (not available on size 1) E = Ball valve Stainless Steel (size 1 only) M = Ball valve brass (size 1 only)	10 = 145 psi (10 bar) 16 = 230 psi (16 bar)	0 = None 1 = Base frame (size 2, 2.5 and 3 only) 2 = Mounting clips (size 2, 2.5 and 3 only) 3 = Differential pressure gauge in aluminum (fitted to customer's equipment) 4 = Differential pressure gauge in stainless steel (fitted to customer's equipment) 5 = Differential pressure gauge in brass (fitted to customer's equipment)

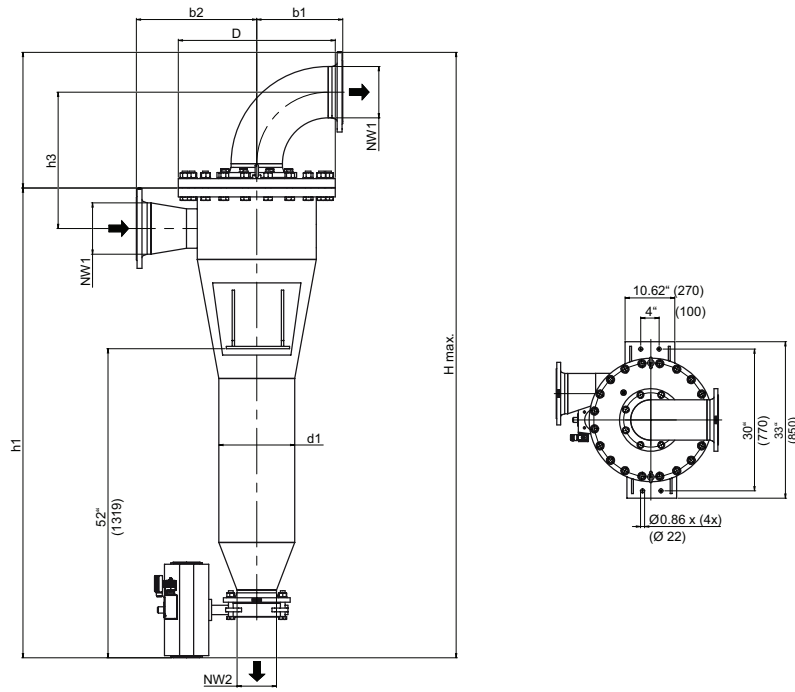
BOX 9	BOX 10	BOX 11
Modification Number	Element Set	Filtration Rating
X = Latest version supplied by factory	UKS1 = Conical Slotted Tube for size 1 UKS2 = Conical Slotted Tube for size 2 UKS2.5 = Conical Slotted Tube for size 2.5 UKS3 = Conical Slotted Tube for size 3 UKS3.5 = Conical Slotted Tube for size 3.5 UKS4 = Connical Slotted Tube for size 4	200 = 200 µm (not for size 4) 300 = 300 µm (not for size 4) 500 = 500 µm 1000 = 1000 µm 2000 = 2000 µm 3000 = 3000 µm

- RF3 — RF3-8
- RF5
- RF7
- RF10
- RF4-1
- RF4-2
- RF4-3
- RF12
- RF14
- BTU

- ATF-2
- ATF-2.5
- ATF-3

- ATF-3
- ATF-3.5
- ATF-4
- PLF1
- PLF2
- PVD

1760 gpm
6662 L/min
230 psi
16 bar



Filter Size	NW1 in (mm)	NW2 in (mm)	H Max. in (mm)	h1 in (mm)	h2 in (mm)	h3 in (mm)	b1 in (mm)	b2 in (mm)	D in (mm)	d1 in (mm)	Installation Height in (mm)
ATF 3.5	5.91 (150)	3.94 (100)	88.98 (2260)	70.28 (17.85)	77.95 (1980)	18.82 (478)	11.18 (284)	17.13 (435)	22.24 (565)	10.75 (273)	51.18 (1300)
ATF 4	7.87 (200)	5.91 (150)	101.77 (2585)	78.94 (2005)	88.19 (2240)	22.91 (582)	14.45 (367)	20.24 (514)	26.38 (670)	12.75 (323.9)	40.06 (1170)

Filter Housing Specifications

Filtration Rate:	200-3000 µm slotted tube only	
Operating Rate:	32°F - 194°F (0°C - 90°C)	
Housing Material:	Stainless Steel or Carbon Steel	
Size:	3.5	4
Flow Rate:	350-965 gpm (1324-3652 L/m)	440-1760 gpm (1665-6662 L/m)
Pressure Rating:	145 or 230 psi (10 or 16 bar)	145 or 230 psi (10 or 16 bar)
Connections Inlet/Outlet:	6" Flange (DN 150)	8" Flange (DN 200)
Connection Discharge Line:	4" Flange (DN 100)	6" Flange (DN 150)
Filter Area:	540 in ² (3500 cm ²)	605 in ² (3900 cm ²)
Weight:	578 lbs (263 kg)	920 lbs (418 kg)
Volume:	34 gal (130 L)	60 gal (230 L)

Automatic Twist Flow Strainer ATF-3.5, ATF-4

ATF

How to Build a Valid Model Number for a ATF-3.5, 4:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	BOX 9	BOX 10	BOX 11
ATF										

Example: NOTE: One option per box

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	BOX 9	BOX 10	BOX 11
ATF	3.5	EPZ	1	E	NN	10	0	X	UKS2	200

=ATF3.5EPZ1ENN100X-UKS2200

BOX 1	BOX 2	BOX 3	BOX 4
Filter Series	Size	Control Type	Voltage
ATF	3.5 = Inlet/outlet 6" ANSI flange 4 = Inlet/outlet 8" ANSI flange	0 = No controls/No valves M = Manual valve EP = Electro-pneumatic discharge valve, with timer control EPZ = Electro-pneumatic discharge valve, with timer control E = Electric discharge valve, without timer control EZ = Electric discharge valve, with timer control	1 = 230 VAC, 60 Hz, Single Phase 2 = 110VAC, 60 Hz, Single Phase 3 = 24VAC, 60 Hz, Single Phase 4 = 24VDC Omit if no control type specified

BOX 5	BOX 6	BOX 7	BOX 8
Housing Material	Discharge Valve	Pressure Rating	Accessories
N = Carbon Steel E = Stainless Steel A = for ANSI flanges, also add A J = for JIS flanges, also add J T = NPT thread (size 1 only), also add T Internal Coating with P = 2-K polyurethane paint, also add P	0 = None Butterfly valve, cast housing NN = coated, disc Stainless Steel, cuff BR (not available on size 1) Butterfly valve, cast housing coated, disc Stainless Steel, cuff EPDM (not available on size 1) NE = Butterfly valve, cast housing coated disc Stainless Steel, cuff Viton (not available on size 1) NV = Butterfly valve, cast housing coated, disc Bronze, cuff NBR (not available on size 1) BE = coated, disc Bronze, cuff EPDM (not available on size 1) BV = coated, disc Bronze, cuff Viton (not available on size 1) E = Ball valve Stainless Steel (size 1 only) M = Ball valve brass (size 1 only)	10 = 145 psi (10 bar) 16 = 230 psi (16 bar)	0 = None 1 = Base frame (size 2, 2.5 and 3 only) 2 = Mounting clips (size 2, 2.5 and 3 only) 3 = Differential pressure gauge in aluminum (fitted to customer's equipment) 4 = Differential pressure gauge in stainless steel (fitted to customer's equipment) 5 = Differential pressure gauge in brass (fitted to customer's equipment)

BOX 9	BOX 10	BOX 11
Modification Number	Element Set	Filtration Rating
X = Latest version supplied by factory	UKS1 = Conical Slotted Tube for size 1 UKS2 = Conical Slotted Tube for size 2 UKS2.5 = Conical Slotted Tube for size 2.5 UKS3 = Conical Slotted Tube for size 3 UKS3.5 = Conical Slotted Tube for size 3.5 UKS4 = Conical Slotted Tube for size 4	200 = 200 µm (not for size 4) 300 = 300 µm (not for size 4) 500 = 500 µm 1000 = 1000 µm 2000 = 2000 µm 3000 = 3000 µm

Filter Model Number Selection

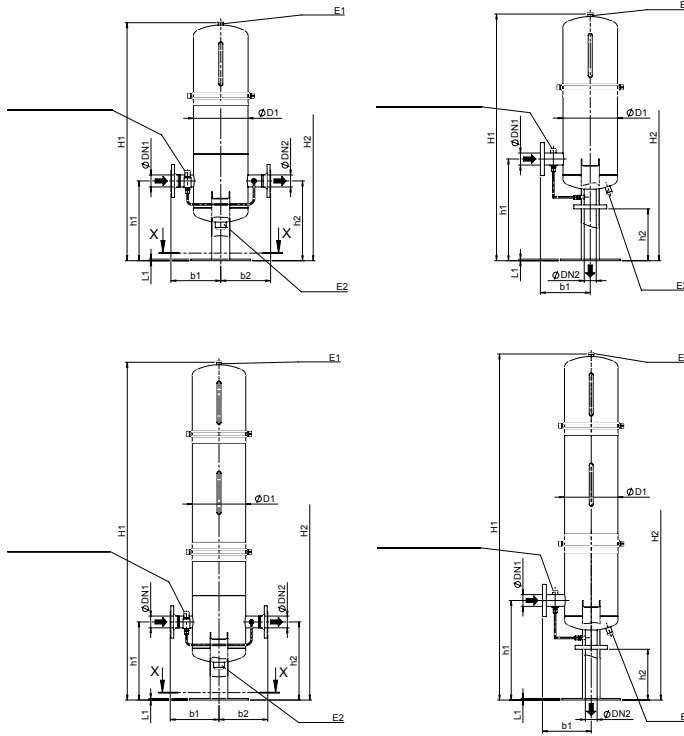
- RF3 — RF3-8
- RF5
- RF7
- RF10
- RF4-1
- RF4-2
- RF4-3
- RF12
- RF14
- BTU
- ATF-1
- ATF-2
- ATF-2.5
- ATF-3.5**
- ATF-4**
- ATF-4
- PLF1
- PLF2
- PVD

145 psi
10 bar

Or

230 psi
16 bar

⚡ Part of the Schroeder Industries 2030 Initiative



NOTES:

1. Top row represents the 10 bar version | In-line (1-stage). Bottom row represents the 10 bar version | In-line (2-stage)
2. Drawings of the 16 bar versions, both 1-stage and 2-stage, are also available upon request.

Filter Housing Specifications

Filter Size	NW1 in (mm)	NW2 in (mm)	H Max. in (mm)	h1 in (mm)	h2 in (mm)	h3 in (mm)	b1 in (mm)	b2 in (mm)	D in (mm)	d1 in (mm)	Installation Height in (mm)
1-stage	5.91 (150)	3.94 (100)	88.98 (2260)	70.28 (17.85)	77.95 (1980)	18.82 (478)	11.18 (284)	17.13 (435)	22.24 (565)	10.75 (273)	51.18 (1300)
2-stage	7.87 (200)	5.91 (150)	101.77 (2585)	78.94 (2005)	88.19 (2240)	22.91 (582)	14.45 (367)	20.24 (514)	26.38 (670)	12.75 (323.9)	40.06 (1170)

Filtration Rate: 1-90 µm

Operating Rate: 32°F - 194°F (0°C - 90°C)

Housing Material: Stainless Steel - E1 and E2

Flow Rate: 881 gpm
(4003 L/min)

Pressure Rating: 145 or 230 psi
(10 or 16 bar)

Connections Inlet/Outlet: 6" Flange
(DN 150)

Connection Discharge Line: G1" In-Line Version
G1/2" Outlet Version Downward

Filter Area: Contact Factory

Weight: 132 lbs
(60 kg)

Volume: 13 gal
(50 L)

How to Build a Valid Model Number for a PLF1:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	BOX 9	BOX 10	BOX 11	BOX 12	BOX 13
PLF1												

Example: NOTE: One option per box

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	BOX 9	BOX 10	BOX 11	BOX 12	BOX 13
PLF1	1	2	9HF	V	E1	S	C	E1	10	N	1	0

=PLF1-129HF-VE1SCE110N10

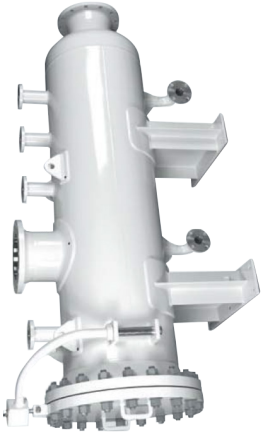
BOX 1	BOX 2	BOX 3	BOX 4
Filter Series	Filter Size	Filter Housing Length	Element Type
PLF1	For 9" High Flow or 1 = High Load Cascade filter elements 2 = For High Flow filter elements	1 = Single-Stage 2 = Double-Stage	6HF = 6" Filter element diameter High Flow 9HF = 9" Filter element diameter High Flow 9HLC = 9" filter element diameter
BOX 5	BOX 6	BOX 7	
Filter Orientation	Housing Material	Design Code	
V = Vertical H = Horizontal	E1 = Stainless Steel 1.4301 E2 = Stainless Steel 1.4571 SD = Superduplex D = Duplex A = w/ ANSI flanges "A" - readjusted additionally J = w/ JIS flanges "J" - readjusted additionally	S = Schroeder Standard A = ASME VIII Div. 1 U = ASME VIII Div. 1 stamped E = EN 13445	
BOX 8	BOX 9	BOX 10	BOX 11
Connection Code	Internal Parts	Pressure Ranges	Seal Material
G2 = Thread G2" (size 2 only) C = DIN DN 50 / 2" ANSI E = DIN DN 80 / 3" ANSI (size 1 only) F = DIN DN 100 / 4" ANSI (size 1 only) K = DIN DN 150 / 6" ANSI (size 1 only)	Stainless steel 1.4301 E1 = or similar material (group 304) Stainless steel 1.4571 E2 = or similar material (group 316) SD = Superduplex (on request) D = Duplex (on request)	10 = PN 10 16 = PN 16	N = NBR V = FPM (Viton) ¹ E = EPDM
BOX 12	BOX 13		
Accessories	Optional Fitting		
0 = w/o 1 = w/ visual CI (PVD 2B.1) 2 = w/ visual-electric CI (PVD 2D.0/L24) 3 = VO1 4 = Differential pressure gauge aluminum w/ 2 adjustable switching contacts 5 = Differential pressure gauge stainless steel w/ 2 adjustable switching contacts 6 = w/ electric CI (PVD 2C.0_ 7 = PVL2GW.0/-V-110 8 = PVL2GW.0/-V-120	3 = Air-bleed valve made of stainless steel 4 = Ball valve for draining 5 = Flange 6 = Clamp connection 7 = Special industrial part washers design (TRA) 8 = Including solenoid technology 9 = Height adjustable 3 legged base design for PLF1-2-6HF TRA (Option 7)		

¹For reservoirs made of stainless steel 1.4571 or similar material (group 316), use NBR or EPDM sealing material preferably

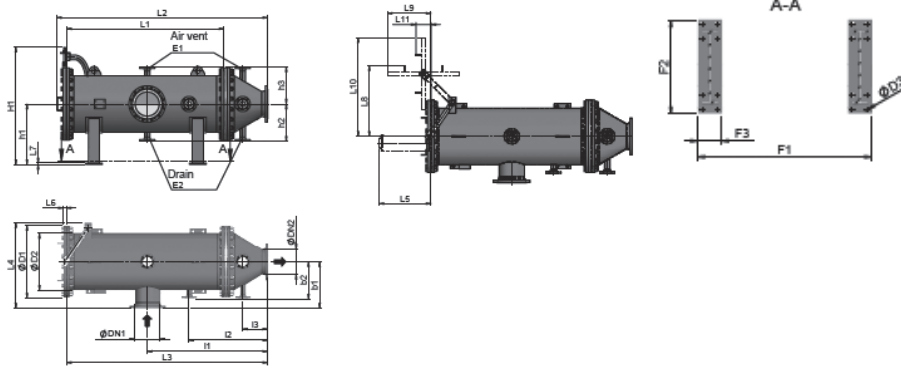
Filter Model Number Selection

- RF3 — RF3-8
- RF5
- RF7
- RF10
- RF4-1
- RF4-2
- RF4-3
- RF12
- RF14
- BTU
- ATF-1
- ATF-2
- ATF-2.5
- ATF-3
- ATF-3.5
- PLF1**
- PLF1
- PLF2
- PVD

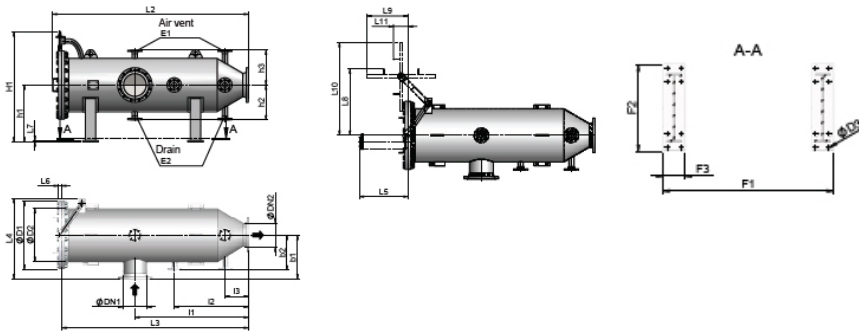
Max. 232 psi
16 bar



Filter Housing, two-part, carbon steel



Filter Housing, one-part, stainless steel



NOTES:

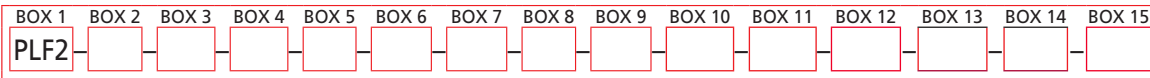
1. The dimensions indicated have ± 10 mm tolerances.
2. Subject to technical modifications.

Contact Factory for Dimensional Drawing.

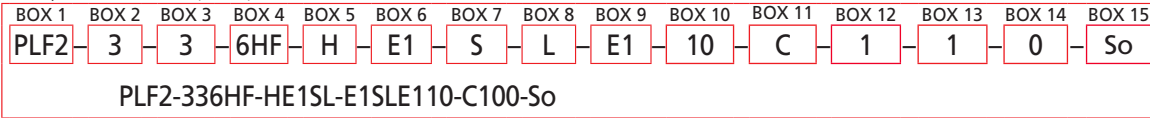
Filter Housing Specifications

Filtration Rate:	1-90 μ m
Operating Rate:	Carbon 33°F - 140°F (1°C - 60°C) Stainless 33°F - 194°F (1°C - 90°C)
Housing Material:	Stainless Steel Carbon Steel
Flow Rate Q max:	5150 gpm (1170 m ³ /h)
Pressure Rating:	87 or 145 or 230 psi (6 or 10 or 16 bar)
Connections Inlet/Outlet:	6" - 16" Flange (150-400 DIN)
Connection Discharge Line:	G1" In-Line Version G1/2 Outlet Version Downward 2" (DN50)
Filter Area:	Contact Factory
Weight:	Contact Factory
Volume:	Up to 350 gal (1330 L)

How to Build a Valid Model Number for a PLF2:



Example: NOTE: One option per box



Filter Model Number Selection

- RF3 — RF3-8
- RF5
- RF7
- RF10
- RF4-1
- RF4-2
- RF4-3
- RF12
- RF14
- BTU
- ATF-1
- ATF-2
- ATF-2.5
- ATF-3
- ATF-3.5
- ATF-4
- PLF2**
- PLF2
- PVD

<p>BOX 1</p> <p>Indicator Code</p> <p>PLF2 = Multiple-place filter housing</p>	<p>BOX 2</p> <p>Size of Filter</p> <p>3 = 3 Support Tubes 5 = 5 Support Tubes 7 = 7 Support Tubes 10 = 10 Support Tubes 13 = 13 Support Tubes</p>	<p>BOX 3</p> <p>Length of Filter Housing</p> <p>1 = 1-stage (on request) 2 = 2-stage (on request) 3 = 3-stage</p>	<p>BOX 4</p> <p>Filter Element Diameter and Filter Element Type</p> <p>6HF = 6" filter element diameter HighFlow (HF)</p>										
<p>BOX 5</p> <p>Filter Alignment</p> <p>H = Horizontal V = Vertical (on request)</p>	<p>BOX 6</p> <p>Housing Material</p> <p>NP = Carbon steel, 2-comp. PUR internal coating V = Carbon steel, 3 mm rubber lining (on request) E1 = Stainless steel 1.4301 / 1.4541 or similar (Group 304 / 321) E2 = Stainless steel 1.4571 or similar (Group 316) SD = Super Duplex (on request) D = Duplex (on request) A = For ANSI flanges, add suffix "A" J = For JIS flanges, add suffix "J"</p>		<p>BOX 7</p> <p>Design Code</p> <p>S = HYDAC Standard (AD 2000) ASME VIII Div. 1 (material and calculation...) A = ASME VIII Div. 1 Stamped U = EN 13445</p>										
<p>BOX 8</p> <p>Type of Connection</p> <table border="1"> <tr> <th>Connection Size</th> <th>Filter Size</th> </tr> <tr> <td>L = DIN DN 200 / 8" ASME</td> <td>3</td> </tr> <tr> <td>M = DIN DN 250 / 10" ASME</td> <td>5</td> </tr> <tr> <td>N = DIN DN 300 / 12" ASME</td> <td>7</td> </tr> <tr> <td>Q = DIN DN 400 / 16" ASME</td> <td>10/13</td> </tr> </table>		Connection Size	Filter Size	L = DIN DN 200 / 8" ASME	3	M = DIN DN 250 / 10" ASME	5	N = DIN DN 300 / 12" ASME	7	Q = DIN DN 400 / 16" ASME	10/13	<p>BOX 9</p> <p>Material of Internal Parts</p> <p>E1 = stainless steel 1.4301 or similar (Group 304) E2 = stainless steel 1.4571 or similar (Group 316) SD = Super Duplex (on request) D = Duplex (on request)</p>	<p>BOX 10</p> <p>Pressure Ranges</p> <p>6 = PN 6 10 = PN 10 16 = PN 16</p>
Connection Size	Filter Size												
L = DIN DN 200 / 8" ASME	3												
M = DIN DN 250 / 10" ASME	5												
N = DIN DN 300 / 12" ASME	7												
Q = DIN DN 400 / 16" ASME	10/13												
<p>BOX 11</p> <p>Sealing Material</p> <p>C = Asbestos-free gasket N = NBR V = FKM (Viton) E = EPDM</p>	<p>BOX 12</p> <p>Clogging Indicator</p> <p>0 = Without clogging indicator 1 = Visual indicator (PVD 2B.1) 2 = Visual-electrical indicator (PVD 2D.0/-L24) 3 = V01 4 = Differential pressure gauge in aluminum with 2 adjustable switching contacts 5 = Differential pressure gauge in stainless steel with 2 adjustable switching contacts 6 = Electrical indicator (PVD 2C.0) 7 = PVL2GW.0/-V-110 8 = PVL2GW.0/-V-120</p>		<p>BOX 13</p> <p>Optional Equipment</p> <p>Pivoting lid device (only for 1 = horizontal variant) / davit (only for vertical variant) 2 = Toggle screws 3 = Stainless steel air vent ball valve 4 = Drain flap DN 50</p> <p>(Multiple fittings possible, please provide the corresponding number combination)</p>										
<p>BOX 14</p> <p>Modification Number</p> <p>0</p>	<p>BOX 15</p> <p>Supplementary Details</p> <p>So = Code number for special equipment</p>												

¹For reservoirs made of stainless steel 1.4571 or similar material (group 316), use NBR or EPDM sealing material preferably

0-6092 psi
0-420 bar



General

The PVD Clogging Indicators for Process Filters are designed to indicate visually and/or electronically when the filter elements must be cleaned or changed. The use of clogging indicators guarantees both the operational safety of the system and the efficient utilization of the filter elements.

Seals

V (=Viton) or T (=FEP encapsulated)

Construction

Differential pressure indicators are used on all process filters. They react to the pressure differential between the filter inlet and filter outlet, which rises as the level of contamination in the element increases.

Simplest fitting of the differential pressure indicator:

G1/2" cavity
(acc. Schroeder's works standard HN 28-22)

The differential pressure indicator type V01 is piped up separately.

For duplex filter housings, the differential pressure indicators are connected using an adapter block.

Special Indicators

Electrical ATEX indicators:

Optional: electrical indicator for process filters for use in potentially explosive atmospheres subject to the ATEX equipment directive 94/9/EC and the ATEX operator directive 1999/92/EC.

Torque Values - Differential Pressure Indicators

Note: The clogging indicators must only be tightened or adjusted on the spanner flats.

- PVD..B.1: SW27
 - PVD..C.0: SW30
 - PVD..D.0/L...: SW30
- max. torque value: 100 Nm

Clogging Indicators According To Filter Type

Type	Filter Types				
	PRFL PRFLD	PRFS PRFSD	PFM PFH	EDF	PMRF PMRFD
PVD ..B	•	•	•	•	•
PVD ..C	•	•	•	•	•
PVD ..D	•	•	•	•	•
V01 ..VZ	•	•	On Request		•
Differential Pressure Gauge	•	•	On Request		•

Clogging Indicators for Process Filters

PVD



Type Of Indication: Visual, red/green band
Automatic reset

Weight: 110 g

Cracking Pressure Or Indication Range:
1 bar ± 10% 3 bar ± 10%
1.5 bar ± 10% 5 bar ± 10%
2 bar ± 10% 8 bar ± 10%

Perm. Operating Pressure: 6092 psi (420 bar)

Perm. Temperature Range: -20°C to 100°C

Thread: G 1/2

Max. Torque Value: 100 Nm

Switching Type: -

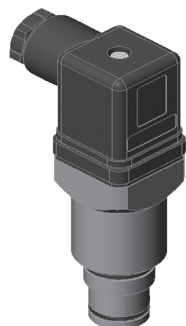
Max. Switching Voltage: -

Electrical Connection: -

Max. Switching Voltage At Resistive Load: -

Switching Capacity: -

Protective Class Acc. DIN 40050: -



Type Of Indication: Electrical switch

Weight: 220 g

Cracking Pressure Or Indication Range:
1 bar ± 10% 3 bar ± 10%
1.5 bar ± 10% 5 bar ± 10%
2 bar ± 10% 8 bar ± 10%

Perm. Operating Pressure: 6092 psi (420 bar)

Perm. Temperature Range: -20°C to 100°C

Thread: G 1/2

Max. Torque Value: 100 Nm

Switching Type: N/C or N/O (change-over contacts)

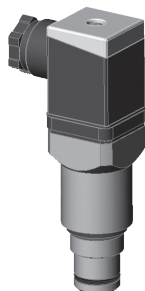
Max. Switching Voltage: 230 V

Electrical Connection: Male Connection M20x1.5 acc. EN 50262
Female Connector acc. DIN 43650

Max. Switching Voltage At Resistive Load: 60 W =
100 VA ~

Switching Capacity: Ohmic 3 A at 24 V =
Ohmic 0.03 to 5 A at max. 230 V ~

Protective Class Acc. DIN 40050: IP 65 (only if the connector is wired and fitted correctly)



Type Of Indication: Visual indicator and electrical switch

Weight: 250 g

Cracking Pressure Or Indication Range:
1 bar ± 10% 3 bar ± 10%
1.5 bar ± 10% 5 bar ± 10%
2 bar ± 10% 8 bar ± 10%

Perm. Operating Pressure: 6092 psi (420 bar)

Perm. Temperature Range: -20°C to 100°C

Thread: G 1/2

Max. Torque Value: 100 Nm

Switching Type: N/C or N/O (change-over contacts)

Max. Switching Voltage: 24, 48, 110, 230 V depending on the light insert

Electrical Connection: Male Connection M20x1.5 acc. EN 50262
Female Connector acc. DIN 43650

Max. Switching Voltage At Resistive Load: 60 W =
100 VA ~

Switching Capacity: Ohmic 3 A at 24 V =
Ohmic 0.03 to 5 A at max. 230 V ~

Protective Class Acc. DIN 40050: IP 65 (only if the connector is wired and fitted correctly)

PVD x B.x

RF3 —
RF3-8

RF5

RF7

RF10

RF4-1

RF4-2

RF4-3

RF12

PVD x C.x

RF14

BTU

ATF-1

ATF-2

ATF-2.5

ATF-3

ATF-3.5

ATF-4

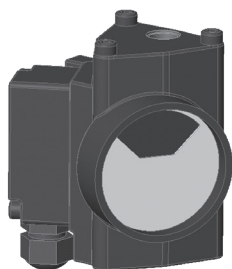
PLF1

PVD x
D.x / -L

PVD

PVD

V01 x VZ.x



Type Of Indication: Visual/analogue indicator and 1 electrical switching contact at 75% and 100% of the cracking pressure

Weight: 650 g

Cracking Pressure Or Indication Range: 0.8 bar ± 10%
2.0 bar ± 10%
4.3 bar ± 10%

Perm. Operating Pressure: 2321 psi (160 bar)

Perm. Temperature Range: -20°C to 100°C

Thread: G 1/4

Max. Torque Value: -

Switching Type: 75% - N/O contact
100% - N/C contact

Max. Switching Voltage: 250 V

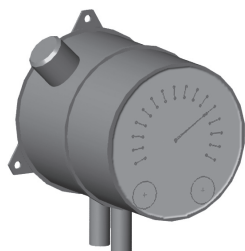
Electrical Connection: Threaded connection
M20x1.5 acc. EN 50262

Max. Switching Voltage At Resistive Load: 75% contact 100% contact
120 W = 30 W =
120 VA ~ 60 VA ~

Switching Capacity: Ohmic 2.5 A at 24 V
Ohmic 1 A at 250 V

Protective Class Acc. DIN 40050: IP 55

DS11



Type Of Indication: 2 microswitches, 1-pole change-over contacts, can be adjusted manually to recommended set values

Weight: 1.2 - 3.5 kg

Cracking Pressure Or Indication Range: 0 - 1.6 bar
0 - 4 bar on request

Perm. Operating Pressure: 363 psi (25 bar); 580 psi (40 bar) on request

Perm. Temperature Range: -10°C to 100°C

Thread: G 1/4

Max. Torque Value: -

Switching Type: Change-over contacts

Max. Switching Voltage: U~max = 250 V AC
U~max = 3- V DC

Electrical Connection: Hard-wired numbered cable, cable connector, 7 pole plug-in connection

Max. Switching Voltage At Resistive Load: I_{max} = 5 A, P_{max} = 250VA,
I_{max} = 0.4 A, P_{max} = 10 W

Switching Capacity: -

Protective Class Acc. DIN 40050: IP 55

Clogging Indicators for Process Filters

PVD

How to Build a Valid Model Number for a BTU:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5
PVD				

Example: NOTE: One option per box

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5
PVD	2	D.	0	-L24

= PVD-2-D.-0 / -L24

BOX 1	BOX 2	BOX 3																	
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Filter Model Number Selection

- RF3 — RF3-8
- RF5
- RF7
- RF10
- RF4-1
- RF4-2
- RF4-3
- RF12
- RF14
- BTU
- ATF-1
- ATF-2
- ATF-2.5
- ATF-3
- ATF-3.5
- ATF-4
- PLF1
- PVD**
- PVD

