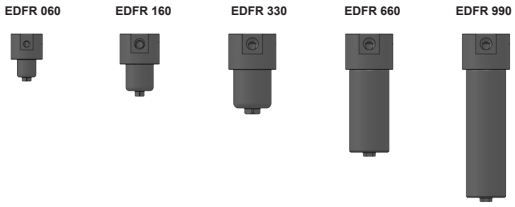
HYDAC INTERNATIONAL

Stainless steel pressure filter
EDFR



Specifications	
Connection:	G ½" – SAE 2"
$Q_{S\ max}$:	300 l/min
$p_{S\ max}$:	400 bar
Filtration ratings:	1 – 250 µm

1. GENERAL

Product description
- Stainless steel pressure filter
- Separation of solid particles from fluids
- 400 bar at 200°C

Filter element technology
- Filter elements of types:
  - DR with radial seal - suitable for EDFR
  - DA - suitable for EDFA
  - DH - suitable for hydraulic filter (DF / LF / ...)
- Filtration materials:
  - Chemicron® metal fibre fleece: 1 to 20 µm (absolute)
  - Glass fibre mesh Betamicron®: 3 – 20 µm (absolute)
  - Wire mesh: 25 to 250 µm (nominal)
  - Differential pressure stability up to 210 bar

Product advantages
- Optimum adaptation to the application thanks to 6 different sizes, materials and seal materials
- Easier and quicker filter element changing without removing the filter from the line - size 660 / 990 without removal of the filter bowl by means of a screw in cover
- Clogging control with clogging indicator
  - Visual
  - Electrical
  - Visual-electrical
- Pleated filter elements with large filter area (Chemicron® metal fibre fleece and wire mesh)
- Renewable filter elements save costs for disposal and replacement (Chemicron® metal fibre fleece and wire mesh)

Technical data, filter housing

Size	Mounting dimension [1]	Housing material	$p_{S\ max}$	$T_{S\ max}$ depending on the sealing material [2]	Weight [kg]	Volume [l]
060	G ¾"	Stainless steel: 1.4571 or similar (group 316)	400 bar at $T_{S\ max}$ 200 °C	• FPM / FKM: (from -20°C to +200°C) • EPDM: (from -60°C to +150°C) • NBR: (from -30°C to +110°C) • FEP uncoated O-ring (from -20°C up to +200°C) • FFKM (perfluorelastomer) (from -30°C up to +240°C)	8.5	0.23
160	G 1 ¼"				14.5	0.69
330	Standard: • G 1 ½" Optional: • SAE 1 ½" • SAE 2" • G 2"				34.5	1.62
660					50	2.8
990					64	4.0

[1] Maximum permissible pressure for SAE connections = 414 bar (6000 psi)
[2] Higher temperatures are possible depending on the pressure, please with headquarters

Technical data, filter elements

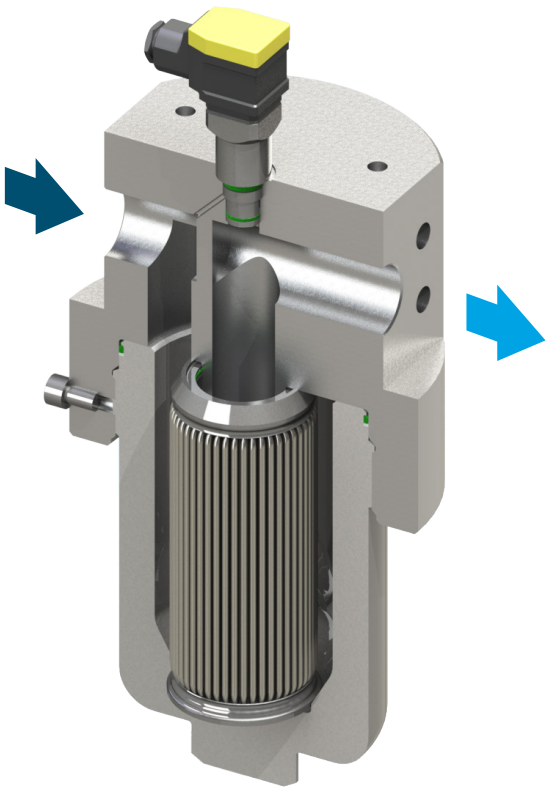
Filter element model				Filter materials and filtration ratings [µm]			Δp max [bar] filter-element
DR	Filter area [cm²]	DH	Filter area [cm²]	Betamicron® glass fibre fleece [1]	Chemicron® metal fibre fleece	Wire mesh	
–	–	030	310	• 3 • 5 • 10 • 20	• 1 • 3 • 5 • 10 • 20	• 25 • 40 • 60 • 100 • 150 • 200 • 250	210
060	430	060	390				
–	–	110	770				
–	–	140	990				
160	1230	160	945				
–	–	240	1475				
–	–	280	3105				
330	2100	330	2165				
660	4410	660	3430				
990	6350	990	4515				

[1] Only for hydraulic applications

2. FUNCTION AND SPECIAL FEATURES

FUNCTIONAL PRINCIPLE

- Flow through the filter element is from the outside to the inside
- The separated solids remain on the outer side of the filter element
- Particles being deposited during the filtration causes a loss of pressure
- The contaminated filter element can be replaced or cleaned



3. CLOGGING INDICATORS*

Type **Clogging indicator/differential pressure monitoring**	Image	Description
Visual **PVD x B.x**		• Visual display with green/red field • Automatic reset
Electrical **PVD x Cx**		• Electrical signal when trigger point is reached • Switch type: normally closed or normally open • Automatic reset
Visual-electrical **PVD x D.x/-L**		• Lamp for visual display • Electrical signal (normally closed or normally open) • Automatic reset

* For clogging indicators, see also separate data sheet.

4. FILTER CALCULATION*

CHECKLIST FOR FILTER CALCULATION

STEP 1: REQUIRED OPERATING DATA

- According to European Pressure Equipment Directive 2014/68/EU
- Type of operating medium
- Viscosity
- Operating pressure
- Operating temperature
- Flow rate
- Required filtration rating
- Type of solid substances to be discharged
- Solid particle content

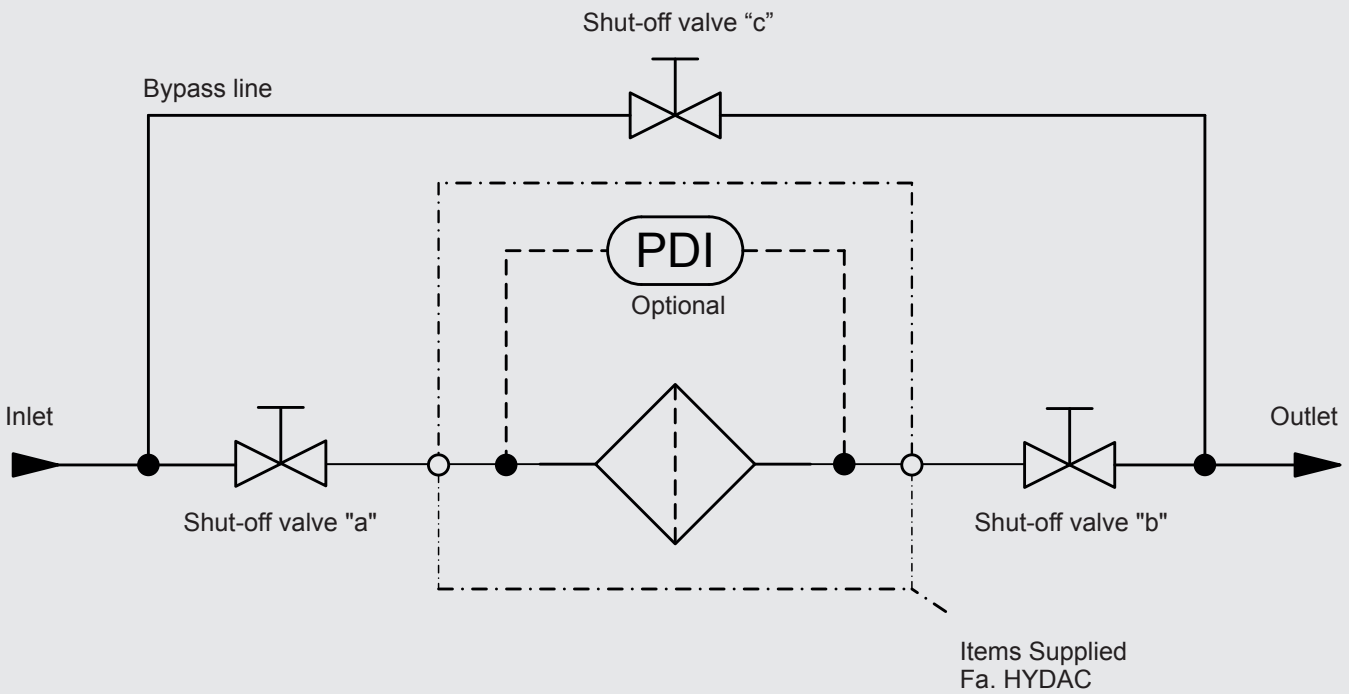
STEP 2: FILTER SIZING

- Configured on basis of pressure drop curves

STEP 3: DETERMINING THE FILTRATION RATING

- **As a basic rule:**
  as coarse as possible – as fine as necessary!

CIRCUIT DIAGRAM

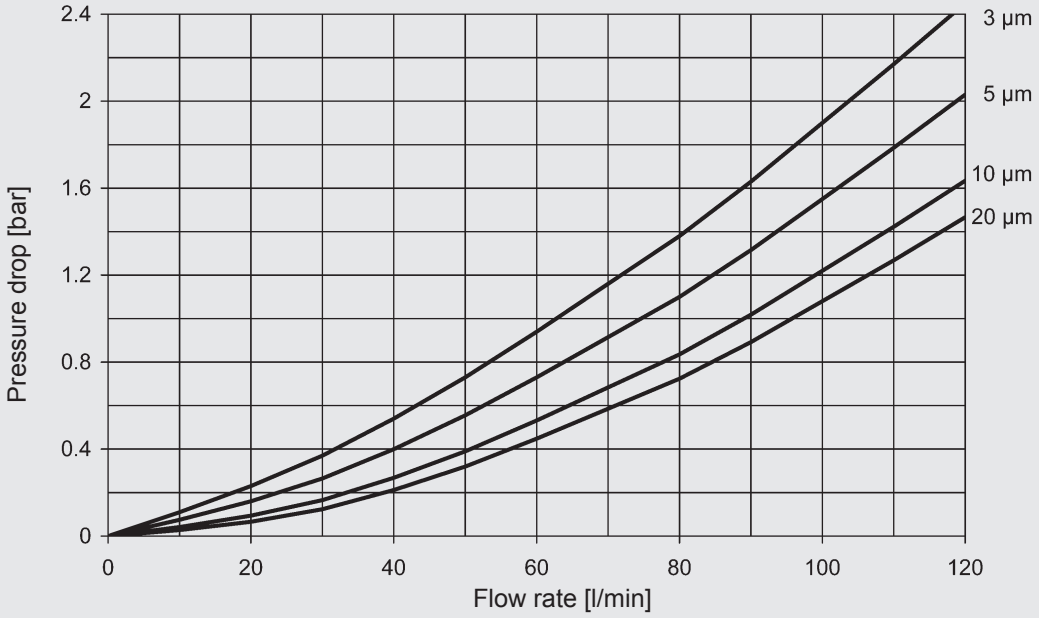


* Please contact our Head Office if you have any queries regarding filter calculation

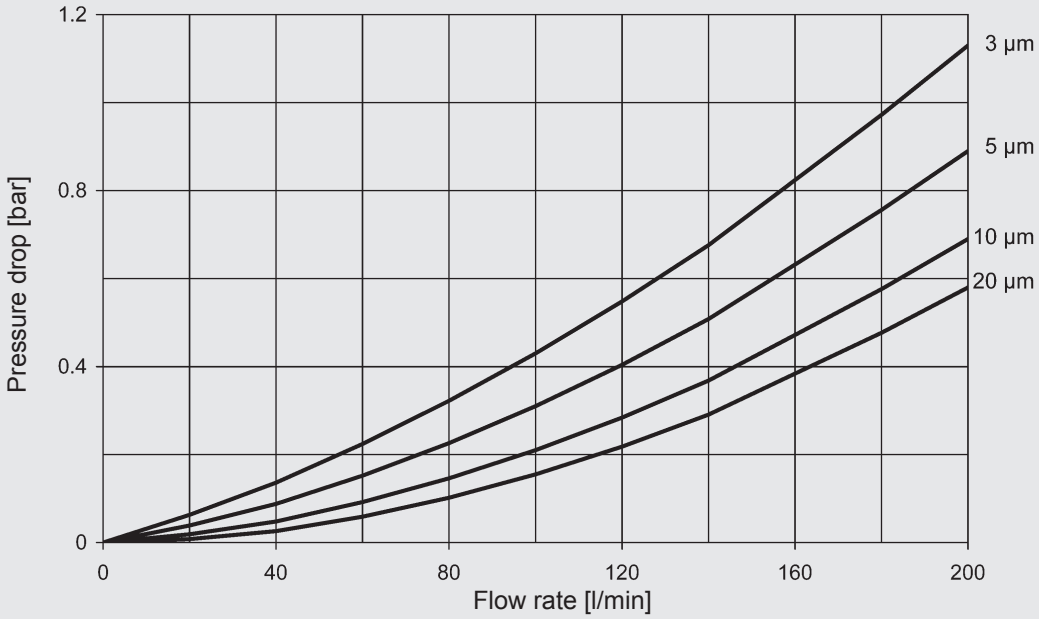
PRESSURE DROP CURVES

(Applies for water at 20 °C or for media up to 15 mm²/s)

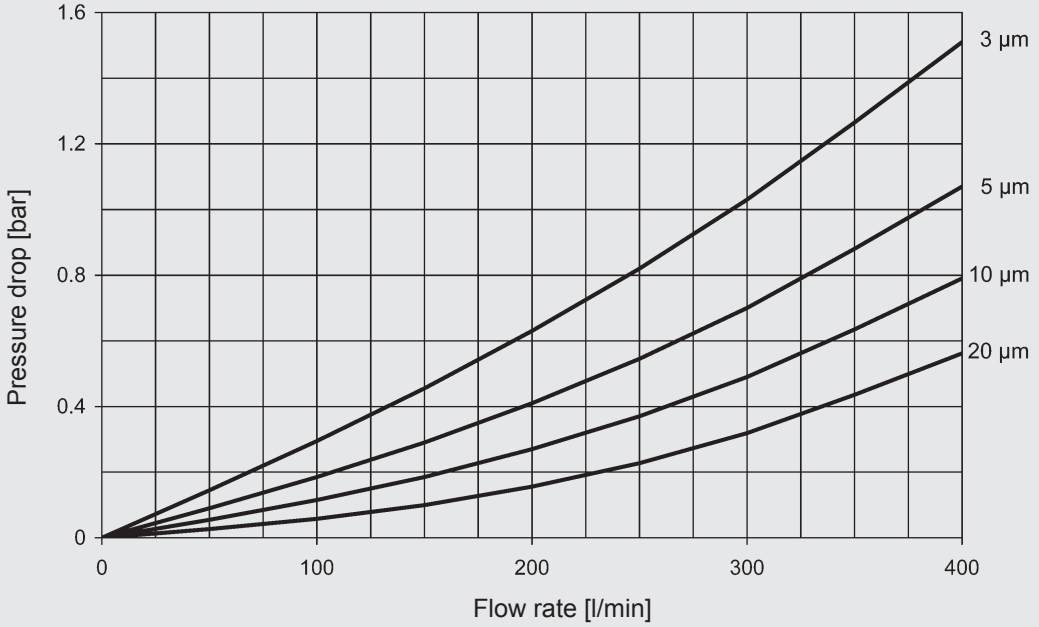
EDFR
Size
060



EDFR
Size
160



EDFR
Size
330 / 660 / 990



5. FILTER CONFIGURATION*

	Standard	Optional
Connections / sizes	**Threaded connections**	**SAE connections**
060	G ¾“	
160	G 1 ¼“	
330	G 1 ½“	
660	G 1 ½“	SAE 1 ½“ - 414 bar / 6000 psi
990	G 1 ½“	SAE 2“ - 414 bar / 6000 psi
Sealing materials	• FPM / FKM (from -20 °C to +200 °C) • EPDM (from -60 °C to +150 °C) • NBR (from -30 °C to +110 °C) • FEP coated O-ring (from -20°C up to +200°C)	• FFKM (perflorelastomer) (from FFKM -30°C to +240 °C) • Other sealing materials on request
Differential pressure monitoring with PVD display	Filter modification code 2: • Visual • Electrical • Visual-electrical	Optional with cooling body for T_S > 100 °C
Differential pressure monitoring with pressure gauge		Filter modification code 1 valid for sizes 330 / 660 / 990
Filter elements / filter material	• M = Chemicron® metal fibre fleece, end caps crimped • D = wire mesh, end caps crimped • BH/HC = Betamicron® only for hydraulic applications	
Documentation	Operating and maintenance instructions	• Manufacturer’s test certificate according to DIN 55350, part 18 “M” for construction and pressure testing • Material certificates according to EN 10204, 3.1 for pressurised housing parts in contact with media

* Other versions and customised special solutions following consultation with our Head Office.

6. MODEL CODE

MODEL CODE FOR STAINLESS STEEL PRESSURE FILTER EDFR

EDFR – D – 060 – G – 100 – 1 – V – 2 – L24

Type
EDFR

Filter material
M = Chemicron® metal fibre fleece
MS = Chemicron® metal fibre fleece with support spring, end caps crimped (only size 060 / 160 / 330)
D = wire mesh, end caps crimped
DS = wire mesh with support spring, end caps crimped (only size 160 / 160 / 330)
BH = Betamicron end caps glued

Size
060
160
330
660
990

Connection type
G = threaded connection
S = SAE connection

Fitration rating in µm
Chemicron® metal fibre fleece 1 / 3 / 5 / 10 / 20 µm
Wire mesh 25 / 40 / 60 / 100 / 150 / 200 / 250 µm
Betamicron® 3 /5 / 10 / 20 µm (only for hydraulic applications)

Clogging indicator version
0 = none
1 = with visual CI (PVD 5 B.1)
2 = with visual/electrical CI (PVD 5 D.0/-L..)
6 = with electrical CI (PVD 5 C.0)
Permissible temperature range for clogging indicators: -20°C to +100°C

Sealing material
V = FPM / FKM (from -20°C to +200 °C)
E = EPDM (from -60°C to +150 °C)
N = NBR (from -30°C to +110 °C)
T = FEP-coated O-ring (from -20 °C to +200 °C)
M = FFKM (Perfluorelastomer) (from -30°C to +240°C)
Other seals on request

Modification code
2 = currently for size 060 / 160 / 330
1 = preferably for size 660 / 990; also possible for size 330

Supplementary details
L 24 = max. switching voltage depending on lighting kit, lamp 2 V
L48 = max. switching voltage depending on lighting kit, lamp 48V
L110 = max. switching voltage depending on lighting kit, lamp 110V
L220 = max. switching voltage depending on lighting kit, lamp 230V
applies to visual-electric CI (PVD 5 D.0/L)

TYPE CODE - FILTER ELEMENTDR / DH / DA

060 – DR – 100 – D – V

Size
DR / DA 060 / 160 / 330 / 660 / 990
DH 030 / 060 / 110 / 140 / 160 / 240 / 280 / 330 / 500 / 660

Filter element type
DR suitable for EDFR (up to max. +200°C)
DA suitable for hydraulic filters (up to max. +200°C)
DH suitable for EDFA (up to max. +400°C)

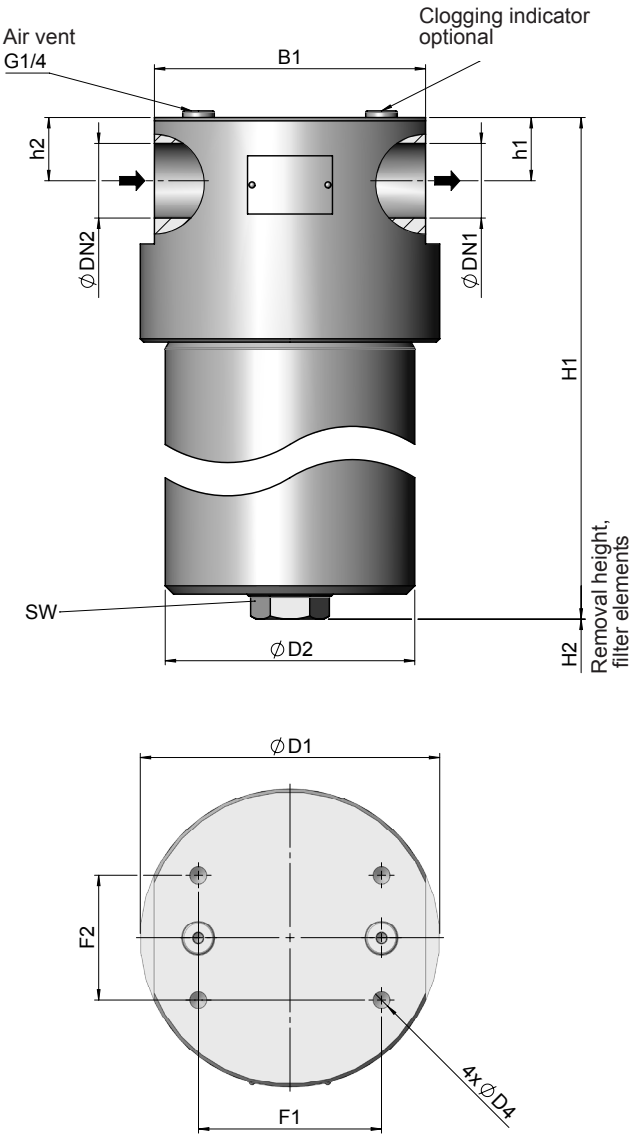
Filter rating in µm
Chemicron® metal fibre fleece 1 / 3 / 5 / 10 / 20
mesh wire 25 / 40 / 60 / 100 / 150 / 200 / 250
Betamicron® 3 / 5 / 10 / 20 µm

Filter material
M = Chemicron® metal fibre fleece
MS = Chemicron® metal fibre fleece with support spring, end caps crimped (only size 060 / 160 / 330)
D = wire mesh, end caps crimped
DS = wire mesh with support spring, end caps crimped (only size 160 / 160 / 330)
BH = Betamicron end caps glued (only for hydraulic applications)

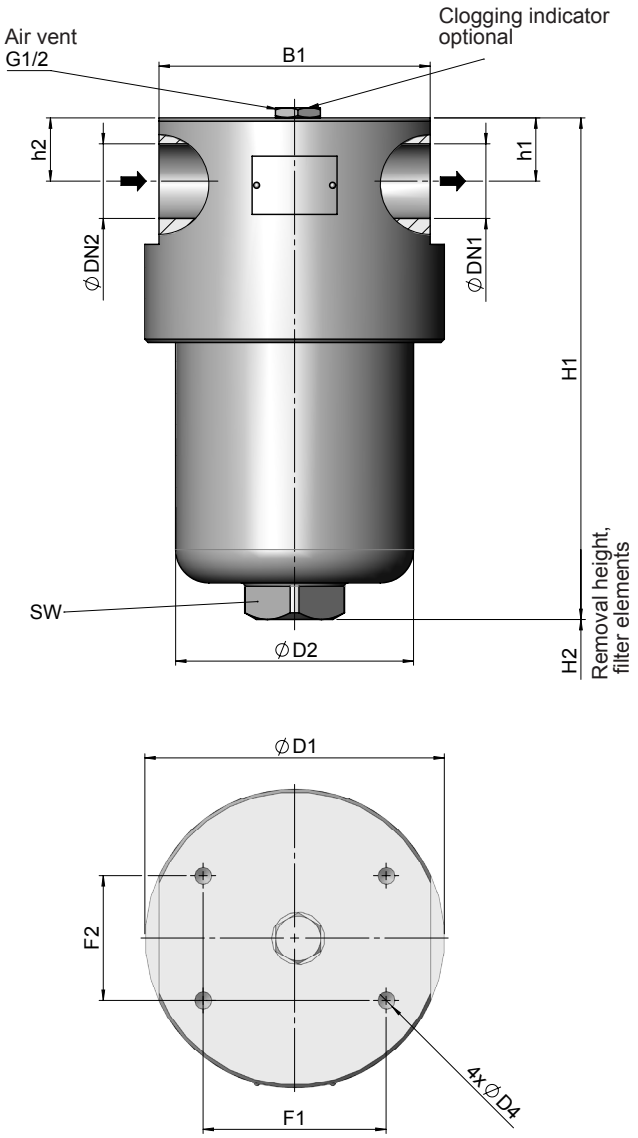
Sealing material
V = FPM / FKM (from -20°C to +200 °C)
E = EPDM (from -60°C to +150 °C)
N = NBR (from -30°C to +110 °C)
T = FEP-coated O-ring (from -20 °C to +200 °C)
M = FFKM (perfluorelastomer) (max +240°C)
Other seals on request

7. DIMENSIONS, FILTER

Filter modification number 1
Standard for sizes 660 / 990



Filter modification number 2
Standard variant for sizes 060 / 160 / 330

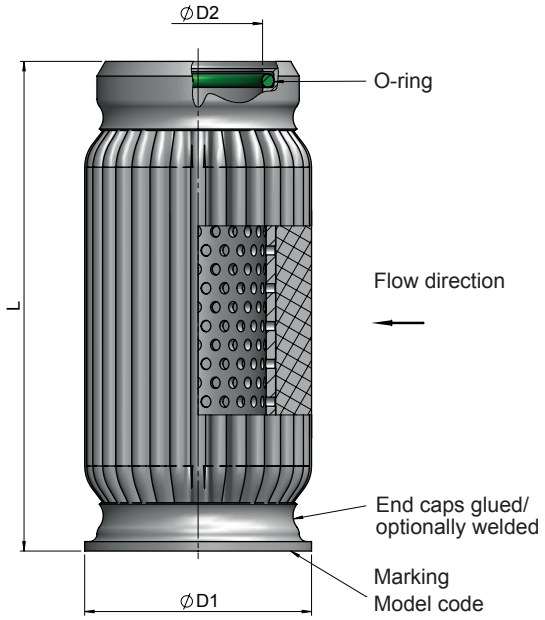


The dimensions quoted are approximations, given in mm.
Subject to technical modifications.

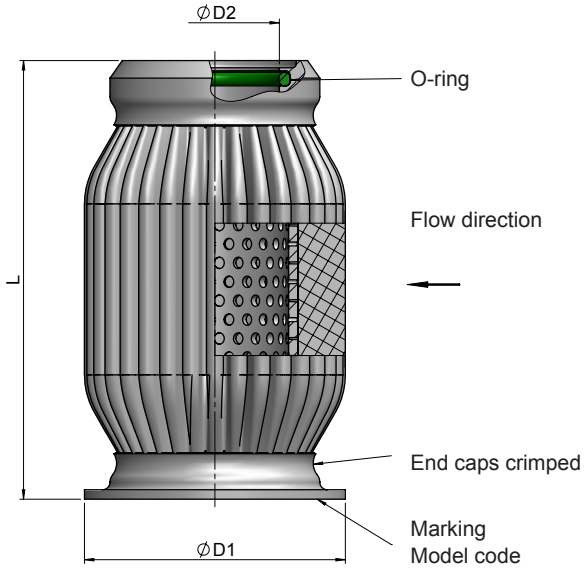
Size	DN1	DN2	B1	h1	h2	H1	H2	D1	D2	D4	SW	E1	F1	F2
EDFR 060	G3/4	G3/4	110	39	39	179	50	120	72	M6	27	G1/2	60	40
EDFR 160	G1 1/4	G1 1/4	135	33	33	230	60	150	105	M10	32	G1/2	80	50
EDFR 330	G1 1/2	G1 1/2	180	38	38	302	75	200	143	M12	46	G1/2	110	75
EDFR 660	G1 1/2	G1 1/2	180	38	38	460	75	200	150	M12	46	G1/2	110	75
EDFR 990	G1 1/2	G1 1/2	180	38	38	629	75	200	150	M12	46	G1/2	110	75

7. DIMENSIONS, FILTER ELEMENTS

DR



DH



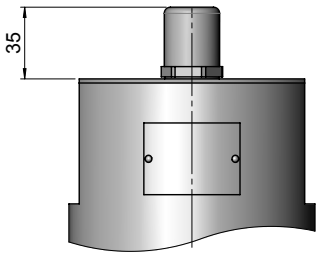
The dimensions quoted are approximations, given in mm.
Subject to technical modifications.

DR filter element	L	D1	D2
060	91	44	22
160	129	60	34
330	180	77	48
660	349		
990	518		

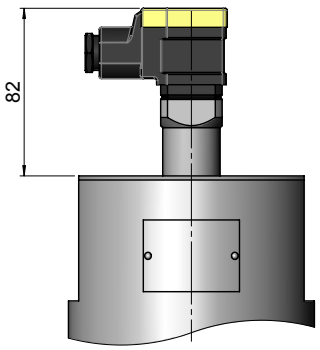
DH filter element	L	D1	D2
030	94	35	12
060	83	47	22
110	153		
140	193		
160	116	69	34
240	175		
280	356		
330	164	91	48
660	329		
990	518	77	

8. DIMENSIONS, CLOGGING INDICATORS*

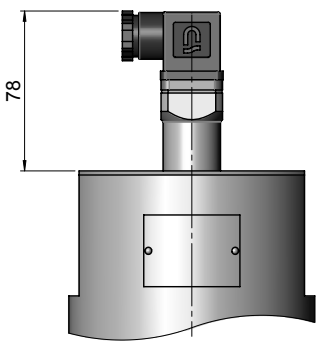
Visual clogging indicator



Visual-electrical clogging indicator



Electrical clogging indicator



* For clogging indicators, see also separate data sheet.

NOTE

The information in this brochure relates to the operating conditions and applications described.
For applications and/or operating conditions not described, please contact the relevant technical department.
Subject to technical modifications.

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