

RE 50 076/01.03

Replaces:05.00

**Pressure filters
for installation in pressure lines
Type ABZFD**

Series 1X

Maximum operating pressure 420 bar

Maximum flow 350 L/min



H6193 + H6190

Pressure filter type ABZFD
Variant A

Variant B

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Features

- These pressure filters are used in hydraulic systems to separate solid particles from hydraulic fluids. They are intended for in-line installation.
- They are characterised by the following features:
- Filter elements are based on anorganic fibres
 - Adsorption of finest particles over a wide differential pressure range
 - High contamination retention capacity due to large specific adsorption area
 - Good chemical resistance due to the use of epoxy resins for impregnation and bonding
 - High bursting pressure-resistance of the filter elements (e.g. during cold start)
 - Water and water shares in the hydraulic fluid do not result in the reduction of the filtration performance
 - Filter rating 10 mm absolute



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Ordering code

Pressure filter

Rexroth plant construction accessories

Filter

Pressure filter

Single pressure filter

Size (flow at $\Delta p = 1 \text{ bar} / 29 \text{ mm}^2/\text{s}$)

Series 40	= 0040
Series 80	= 0080
Series 160	= 0160
Series 240	= 0240
Series 350	= 0350

Filter element

Rating in micron absolute = 10

ABZ F D-S -10 - -1X/ -

A = Variant A
B = Variant B

M = See table (page 5)
V = See table (page 5)

Hydraulic fluid

Series 1X

1X = Series 10 to 19
(10 to 19: unchanged installation and connection dimensions)

Nominal pressure

100 = 100 bar
210 = 210 bar
420 = 420 bar

N = With by-pass valve
H = Without by-pass valve



Use filters only with clogging indicator fitted !

Variant A

Type	Material no.
Pressure filter with by-pass ($p = 100 \text{ bar}$)	
ABZFD-S0040-10N-100-1X/M-A	R900229557
ABZFD-S0080-10N-100-1X/M-A	R900229558
ABZFD-S0160-10N-100-1X/M-A	R900229559
ABZFD-S0240-10N-100-1X/M-A	R900229560
Pressure filter with by-pass ($p = 210 \text{ bar}$)	
ABZFD-S0040-10N-210-1X/M-A	R900229561
ABZFD-S0080-10N-210-1X/M-A	R900229562
ABZFD-S0160-10N-210-1X/M-A	R900229563
Pressure filter with by-pass ($p = 420 \text{ bar}$)	
ABZFD-S0040-10N-420-1X/M-A	R900229564
ABZFD-S0080-10N-420-1X/M-A	R900229565
ABZFD-S0160-10N-420-1X/M-A	R900229566
ABZFD-S0240-10N-420-1X/M-A	R900229567
ABZFD-S0350-10N-420-1X/M-A	R900229568
Pressure filter without by-pass ($p = 420 \text{ bar}$)	
ABZFD-S0040-10H-420-1X/M-A	R900229569
ABZFD-S0080-10H-420-1X/M-A	R900229570
ABZFD-S0160-10H-420-1X/M-A	R900229571

Variant B

Type	Material no.
Pressure filter with by-pass ($p = 100 \text{ bar}$)	
ABZFD-S0040-10N-100-1X/M-B	R900229575
ABZFD-S0080-10N-100-1X/M-B	R900229576
ABZFD-S0160-10N-100-1X/M-B	R900229577
ABZFD-S0240-10N-100-1X/M-B	R900229578
Pressure filter with by-pass ($p = 210 \text{ bar}$)	
ABZFD-S0040-10N-210-1X/M-B	R900229579
ABZFD-S0080-10N-210-1X/M-B	R900229580
ABZFD-S0160-10N-210-1X/M-B	R900229581
ABZFD-S0240-10N-210-1X/M-B	R900229685
Pressure filter with by-pass ($p = 420 \text{ bar}$)	
ABZFD-S0040-10N-420-1X/M-B	R900229582
ABZFD-S0080-10N-420-1X/M-B	R900229583
ABZFD-S0160-10N-420-1X/M-B	R900229584
ABZFD-S0240-10N-420-1X/M-B	R900229585
ABZFD-S0350-10N-420-1X/M-B	R900229586
Pressure filter without by-pass ($p = 420 \text{ bar}$)	
ABZFD-S0040-10H-420-1X/M-B	R900229587
ABZFD-S0080-10H-420-1X/M-B	R900229588
ABZFD-S0160-10H-420-1X/M-B	R900229589

Ordering code

Clogging indicator

ABZ F V - -1X/

Rexroth plant construction accessories

Filter

Clogging indicator

Visual differential pressure indicator ($p_{\max} = 210$ bar) with cracking pressure $\Delta p = 5 - 7$ bar	= MV5
Electrical differential pressure switch ($p_{\max} = 210$ bar) with cracking pressure $\Delta p = 5 - 7$ bar	= ME5
Visual differential pressure indicator ($p_{\max} = 420$ bar) with cracking pressure $\Delta p = 2 - 3$ bar	= HV2
Electrical differential pressure switch ($p_{\max} = 420$ bar) with cracking pressure $\Delta p = 2 - 3$ bar	= HE2
Visual differential pressure indicator ($p_{\max} = 420$ bar) with cracking pressure $\Delta p = 5 - 7$ bar	= HV5
Electrical differential pressure switch ($p_{\max} = 420$ bar) with cracking pressure $\Delta p = 5 - 7$ bar	= HE5

A = Variant A
B = Variant B

M = See table (page 5)
V = See table (page 5)

Hydraulic fluid

Series 1X

1X = Series 10 to 19
(10 to 19: unchanged installation and connection dimensions)



Use filters only with clogging indicator fitted !

Variant A

Type	Material no.
For filter $p = 100$ and 210 bar	
ABZFD-MV5-1X/M-A	R900229742
ABZFD-ME5-1X/M-A	R900229743
For filter $p = 420$ bar	
ABZFD-HV5-1X/M-A	R900229744
ABZFD-HE5-1X/M-A	R900229745

Variant B

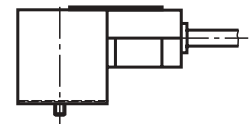
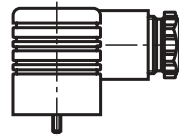
Type	Material no.
For filter $p = 100, 210$ and 420 bar with by-pass valve	
ABZFD-HV2-1X/M-B	R900229638
ABZFD-HE2-1X/M-B	R900229639
For filter $p = 420$ bar without by-pass valve	
ABZFD-HV5-1X/M-B	R900229640
ABZFD-HE5-1X/M-B	R900229641

Order example: Pressure filter for $p_{\max} = 100$ bar with by-pass valve for flow of 40 l/min with 10 μm filter element for the hydraulic fluid, mineral oil HLP to DIN 51524, variant A and clogging indicator variant A.

1:	ABZFD-S0040-10N-100-1X/M-A	Material number:	R900229557
2:	ABZFD-ME5-1X/M-A	Material number:	R900229743
3:	Leitungsdose Z14	Material number:	R900058528

Filter and clogging indicator variants A and B cannot be combined with each other

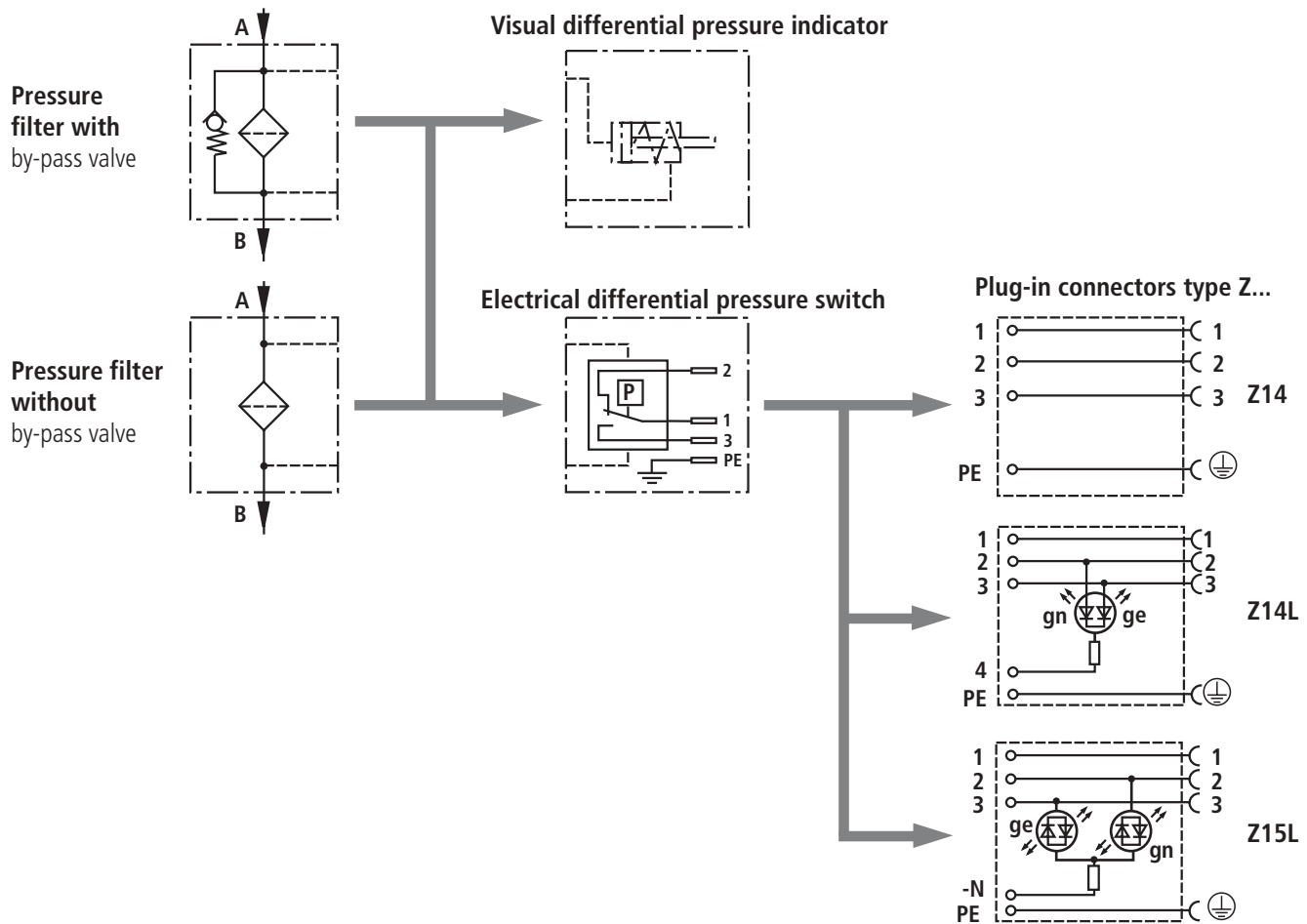
Plug-in connectors for mounting on electrical clogging indicators, variants A and B



Designation:	DC voltage	AC voltage	Material number	Cable length 5m	Cable length 10m
Plug-in connector "Z14" (standard) without circuitry	12 - 240 V		R900001260	R900058528	R900217139
"Z14L" with indicator lamp	24 V		-	R900210635	R900217140
"Z15L" with indicator lamp	24 V		R900545845	-	-
	110 V		R900545847	-	-
	220 V		R900545848	-	-

For technical data and unit dimensions, see data sheet RE 08 006, page 5 and 6.

Symbols



Function, section

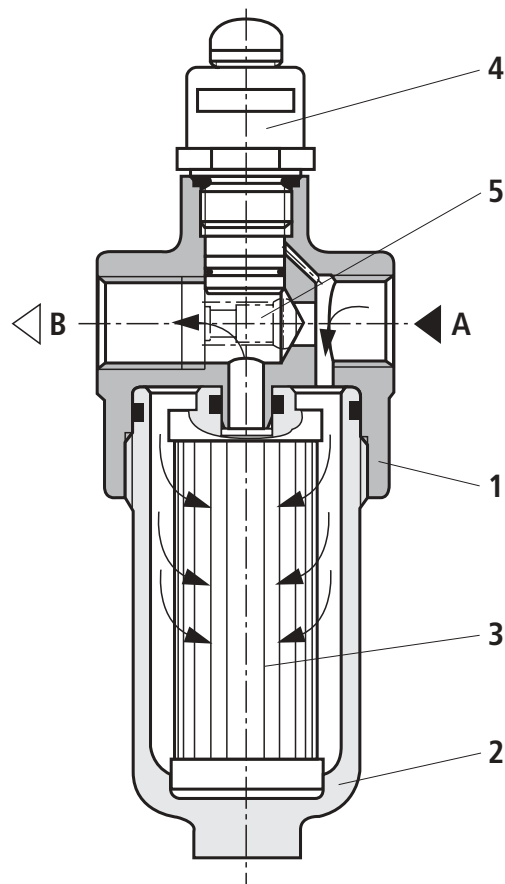
These pressure filters are suitable for direct installation in pressure lines. In most cases, they are installed upstream of open and closed-loop control components that are to be protected.

They basically consist of the filter head (1), a screw-in filter housing (2), filter element (3) as well as a clogging indicator (4) (connection provided as a standard) and a by-pass valve (5) on filters with low differential pressure-stable filter elements (= symbol N).

The hydraulic fluid is passed via port A to the filter element (3), where it is cleaned. The dirt particles filtered out settle in the filter housing (2) and the filter element (3). The filtered hydraulic fluid is directed via port B back into the hydraulic circuit.

The filter housing and all the connecting elements are designed so that pressure peaks – caused, e.g. by accelerated fluid volumes when large control valves suddenly open – can be safely taken up.

The basic version of these pressure filters does not include a clogging indicator (4). Visual or electrical clogging indicators must be ordered separately.



Technical data (for applications outside these parameters, please consult us!)

General

Installation position	Vertical												
Direction of flow	Inlet and outlet at the side, opposite to each other												
Weight	Series			40		80		160		240		350	
		Variant		A	B	A	B	A	B	A	B	A	B
At nom. pressure	100 bar	with by-pass	kg	1.5	3.7	1.8	5.5	3.7	7.2	8.9	19	–	–
	210 bar	with by-pass	kg	3.2	3.7	3.7	5.5	7.2	7.2	–	19	–	–
	420 bar	with by-pass	kg	4.1	6.5	6.0	6.5	9.6	14.4	15.9	17.1	30.5	24.0
	420 bar	without by-pass	kg	4.1	6.8	9.6	8.2	11.3	18.3	–	–	–	–

Hydraulic

	Variant A	Variant B
Maximum operating pressure	bar	420
Cracking pressure of the by-pass valve	bar	6 + 0.6
Response pressure of clogging indicator		
Series 0040 to 0350 with by-pass	bar	5 + 0.5
Series 0040 to 0160 without by-pass	bar	5 + 0.5
Hydraulic fluid temperature range	°C	– 30 to + 100

Electrical

Electrical connection to DIN 43 650	Plug-in connection, 3-pin + PE
Contact load	AC voltage
	DC voltage
	5 A at 220 V resistive load
	3 A at 24 V resistive load
	With DC voltage inductive load, spark suppression must be provided to prolong the service life.
Max. switching power at resistive load	100 VA; 60 W

Filter element

	Variant A	Variant B									
Filter element	Discardable element on the basis of anorganic fibre										
Particle separation											
Series 0040 to 0350 with by-pass	$\beta_{10} \geq 200$ to $\Delta p = 15$ bar	$\beta_{10} \geq 200$ to $\Delta p = 4$ bar									
Series 0040 to 0160 without by-pass	$\beta_{10} \geq 200$ to $\Delta p = 25$ bar	$\beta_{10} \geq 200$ to $\Delta p = 16$ bar									
Permissible pressure differential											
Series 0040 to 0350 with by-pass	bar	25									
Series 0040 to 0160 without by-pass	bar	210									
Weight	Series	40		80		160		240		350	
		Variant		A	B	A	B	A	B	A	B
Differential pressure-stable $\Delta p = 25$ bar with by-pass	kg	0.2	0.2	0.3	0.2	0.4	0.4	1.0	0.9	1.7	0.9
Differential pressure-stable $\Delta p = 210$ bar without by-pass	kg	0.2	0.4	0.5	0.7	0.8	1.9	–	–	–	–

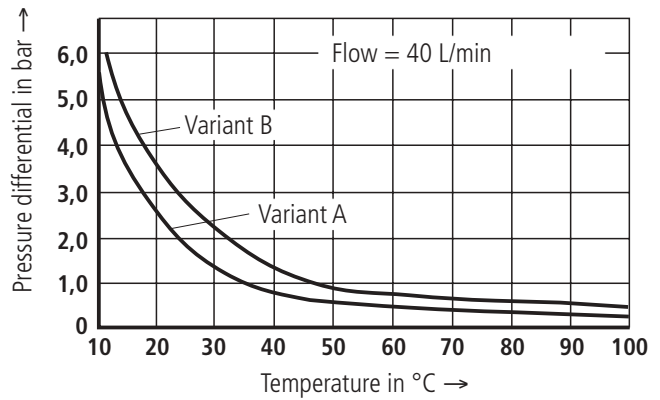
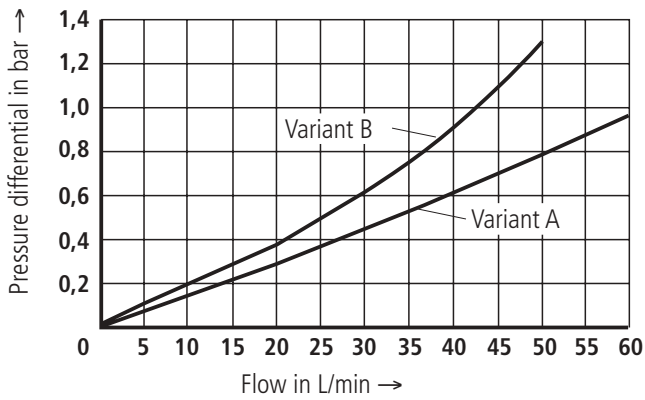
Hydraulic fluids

	Variant A	Variant B
Mineral oils		
Mineral oil	HLP	to DIN 51524
	M	M
Hardly inflammable hydraulic fluids		
Emulsions	HFA-E	to DIN 24320
	M	M
Synthetic, aqueous solutions	HFA-S	
	1)	1)
Viscosity-adjusted HFA fluids	HFA-V	
	V	V
Aqueous solutions	HFC	to VDMA 24317
	M	M
Phosphate esters	HFD-R	to VDMA 24317
	V	1)
Organic esters	HFD-U	to VDMA 24317
	V	1)
Fast bio-degradable hydraulic fluids		
Triglycerides (rape seed oil)	HETG	to VDMA 24568
	V	1)
Synthetic esters	HEES	to VDMA 24568
	V	1)
Polyglycols	HEPG	to VDMA 24568
	V	1)

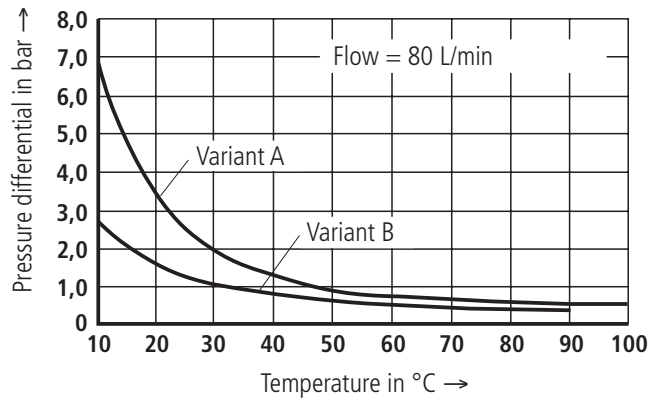
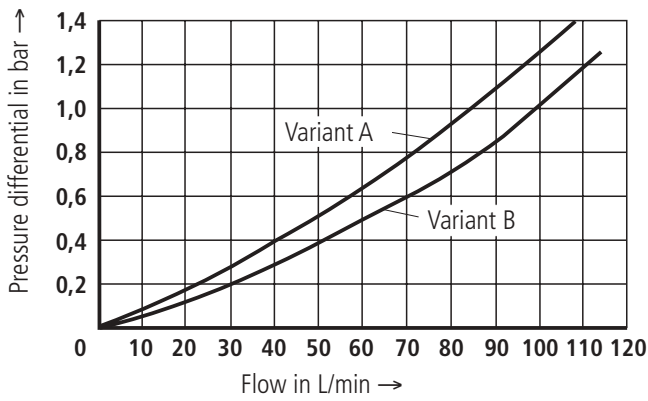
1) Enquiry stating the hydraulic fluid

Characteristic curves (measured with mineral oil HLP46 to DIN 52524 at $\vartheta_{oil} = 50\text{ }^{\circ}\text{C}$ ($v = 29\text{ mm}^2/\text{s}$))

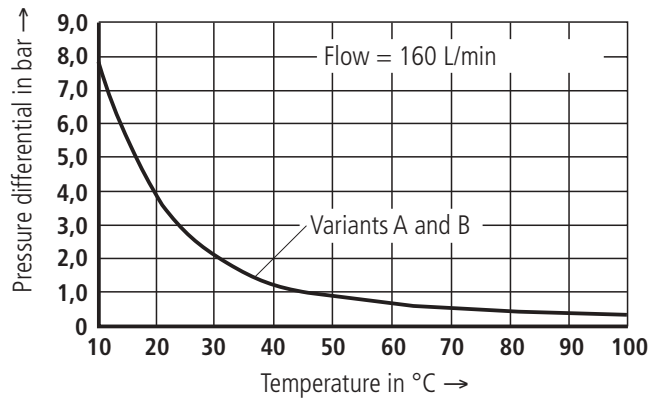
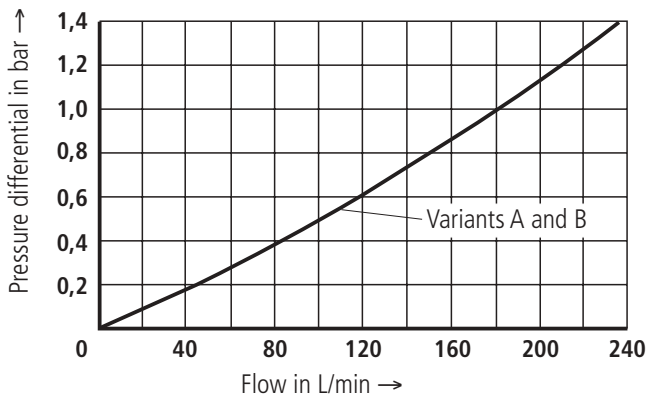
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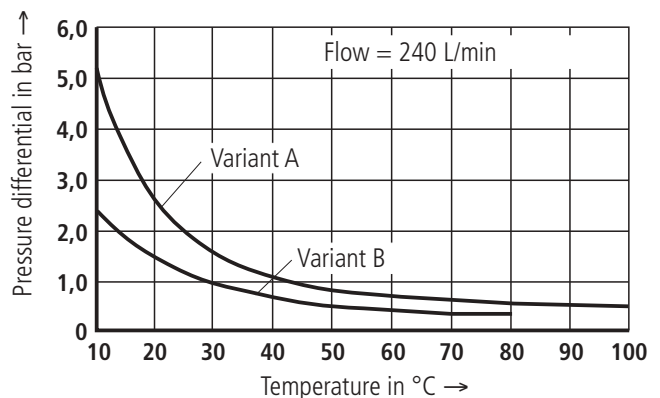
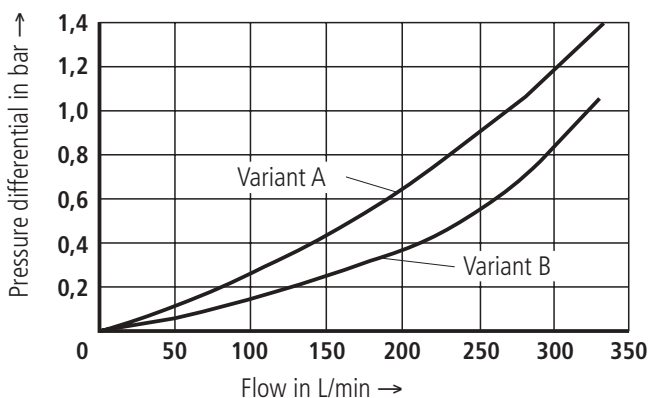
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ABZFD-S0160-10N-100-1X/M-. / ABZFD-S0160-10N-210-1X/M-.

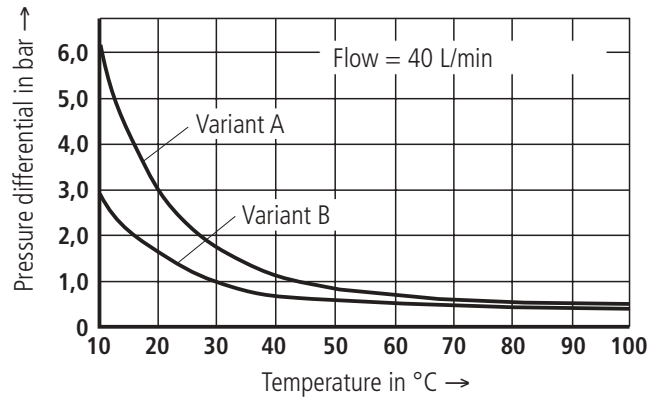
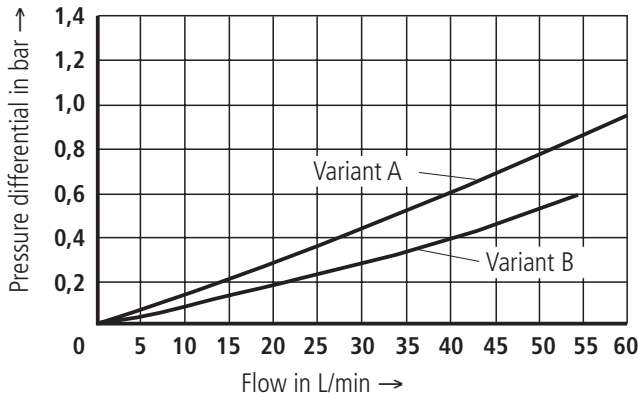


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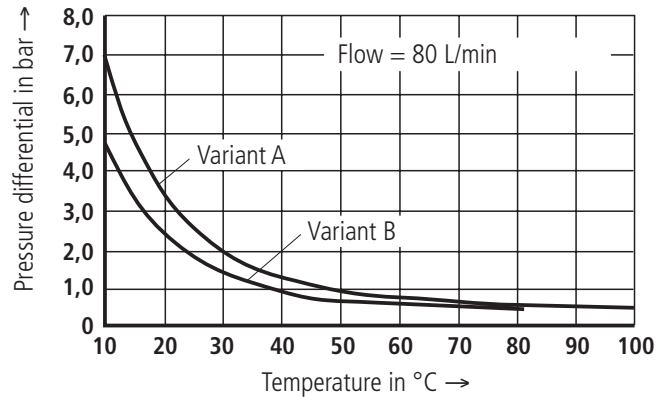
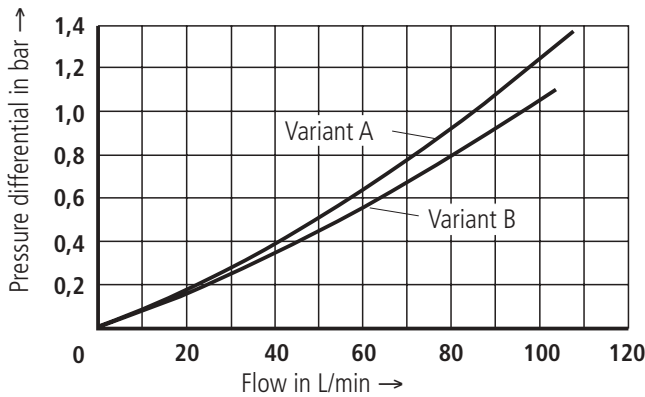


Characteristic curves (measured with mineral oil HLP46 to DIN 52524 at $\vartheta_{oil} = 50\text{ }^{\circ}\text{C}$ ($\nu = 29\text{ mm}^2/\text{s}$))

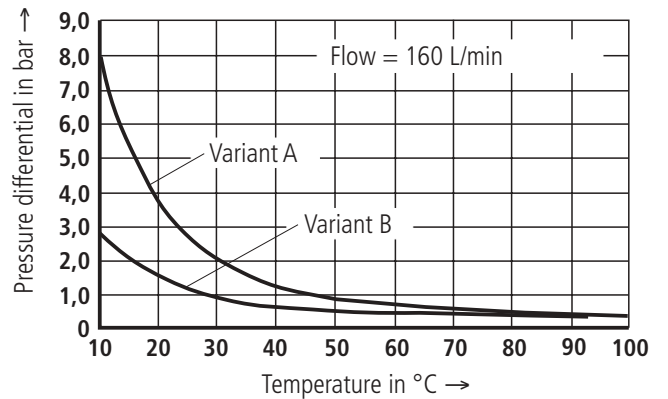
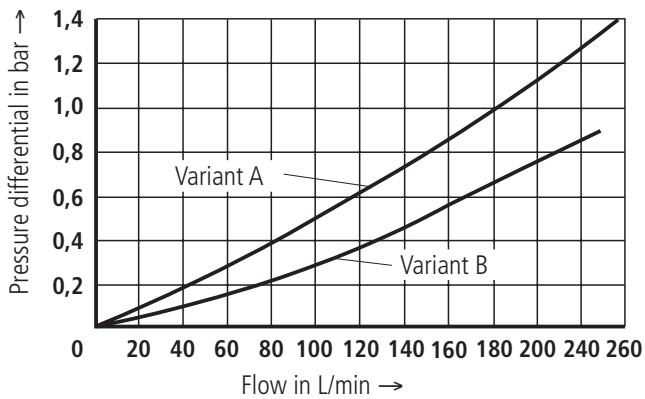
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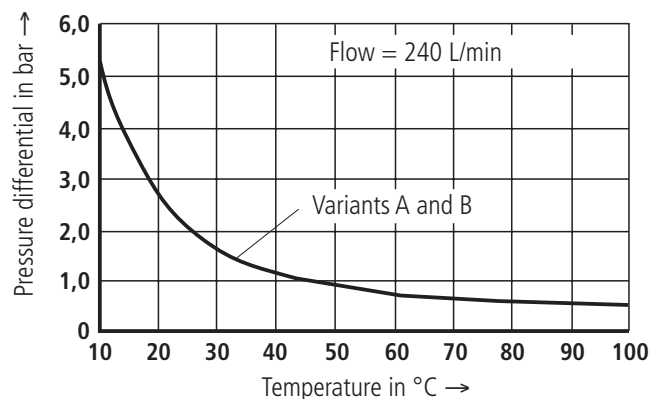
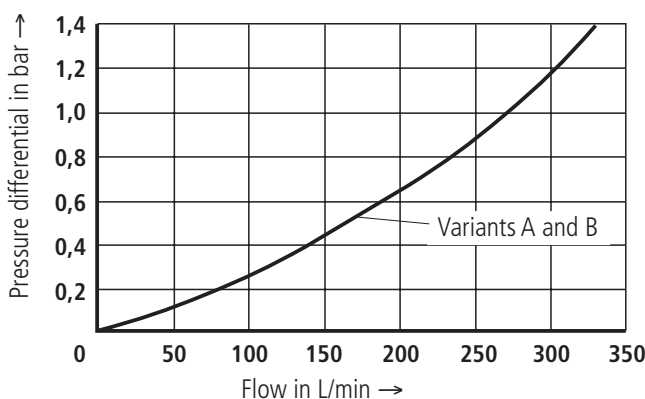
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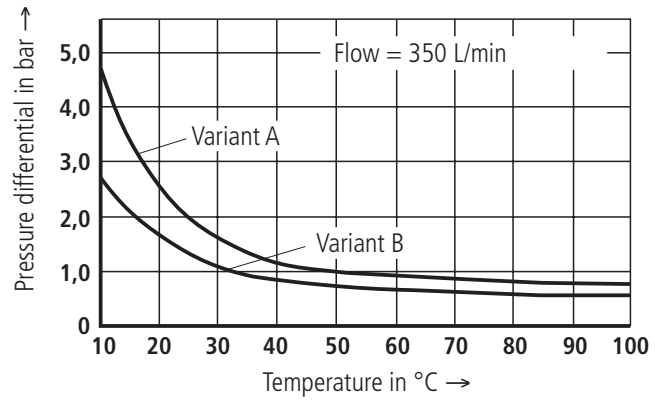
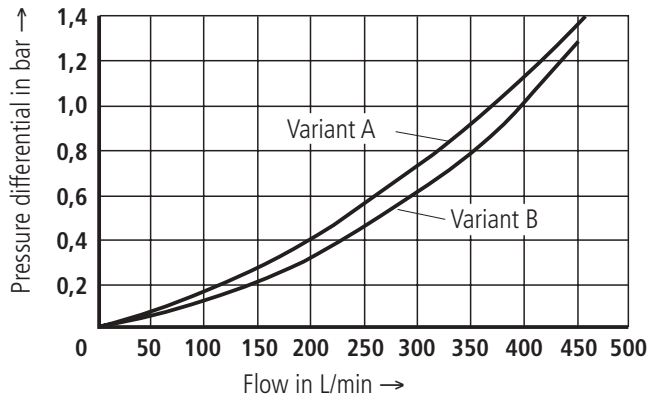


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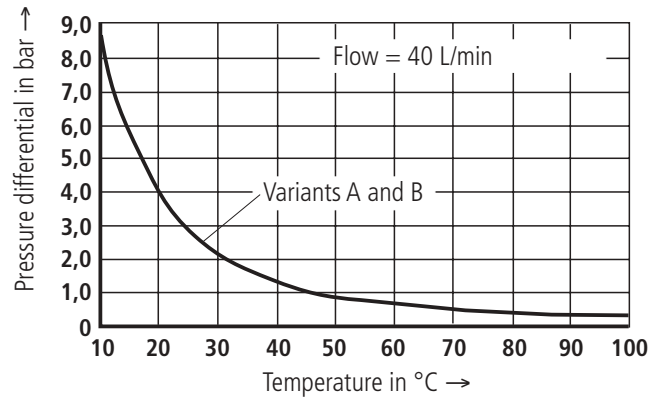
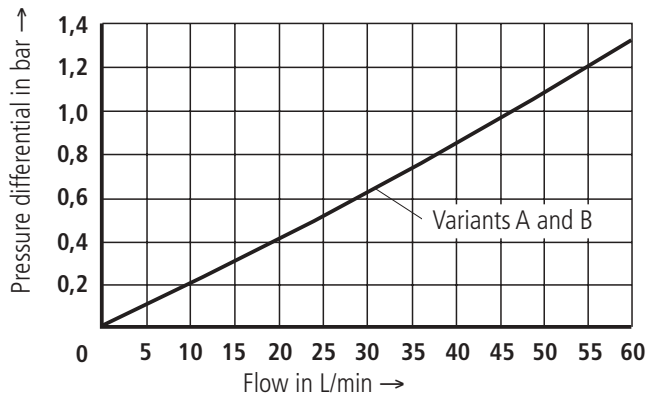


Characteristic curves (measured with mineral oil HLP46 to DIN 52524 at $\vartheta_{oil} = 50\text{ °C}$ ($v = 29\text{ mm}^2/s$))

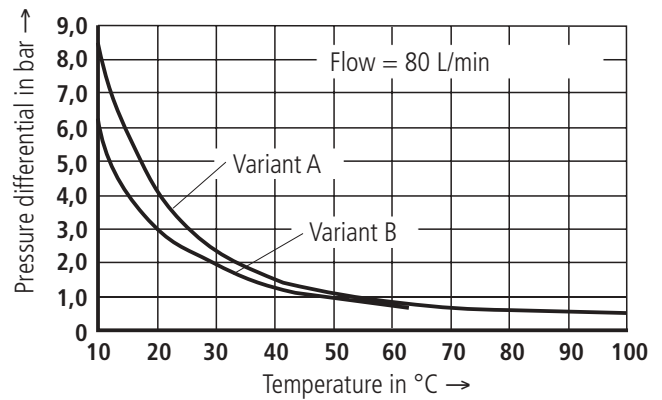
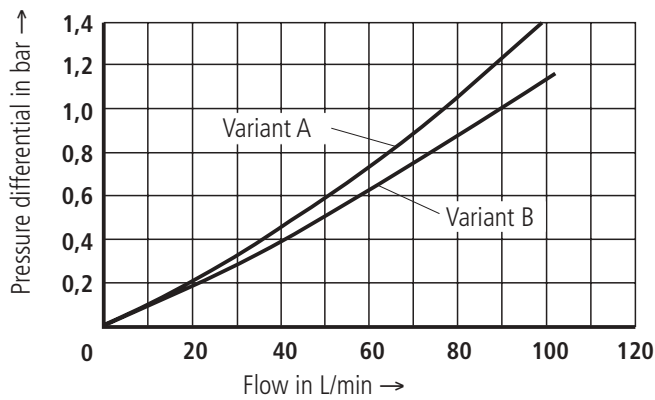
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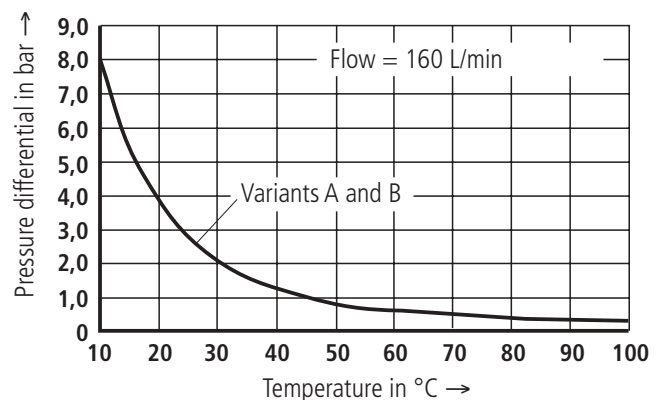
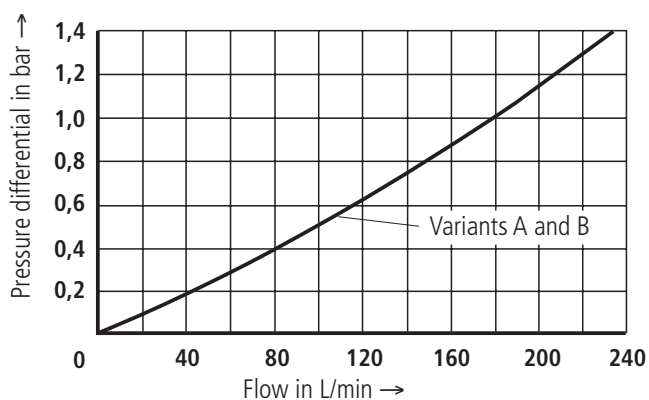
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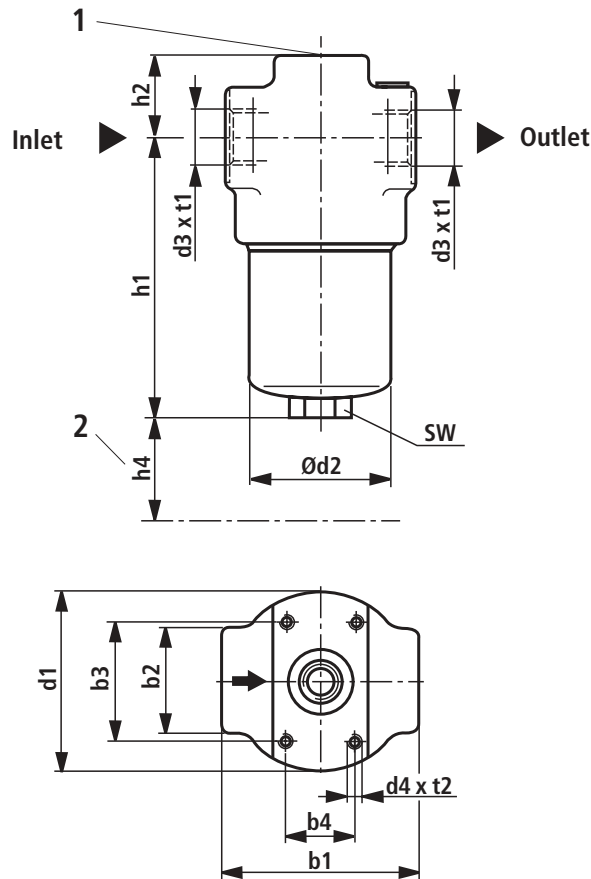
ABZFD-S0080-10H-420-1X/M-



ABZFD-S0160-10H-420-1X/M-



Variant A



- 1 Place of connection for clogging indicator
- 2 Minimum space required to change element

Pressure filter with by-pass

Type	b1	b2	b3	b4	Ød1	Ød2	d3 ¹⁾	d4	h1	h2	h4	SW	t1	t2
ABZFD-S0040-10N-100-1X/..-A	92	50	56	32	84	68	G 3/4	M6	137.5	40	75	27	17	9
ABZFD-S0080-10N-100-1X/..-A	92	50	56	32	84	68	G 3/4	M6	205	40	75	27	17	9
ABZFD-S0160-10N-100-1X/..-A	128	65	85	35	116	95	G 1 1/4	M10	190.5	47	95	32	21	14
ABZFD-S0240-10N-100-1X/..-A	128	65	85	35	116	95	G 1 1/2	M10	432.5	47	95	32	21	14
ABZFD-S0040-10N-210-1X/..-A	90	67	56	32	78	59	G 3/4	M6	133	40	75	27	17	9
ABZFD-S0080-10N-210-1X/..-A	90	67	56	32	78	59	G 3/4	M6	202	40	75	27	17	9
ABZFD-S0160-10N-210-1X/..-A	126	82	85	35	112	84	G 1 1/4	M10	179	47	85	32	21	14
ABZFD-S0040-10N-420-1X/..-A	93	50	56	32	84	68	G 3/4	M6	137.5	40	85	27	17	9
ABZFD-S0080-10N-420-1X/..-A	93	50	56	32	84	68	G 3/4	M6	205	40	85	27	17	9
ABZFD-S0160-10N-420-1X/..-A	128	65	85	35	117	95	G 1 1/4	M10	193.5	47	105	32	21	14
ABZFD-S0240-10N-420-1X/..-A	128	65	85	35	117	95	G 1 1/4	M10	435.5	47	105	32	21	14
ABZFD-S0350-10N-420-1X/..-A	167	138	115	60	159	130	G 1 1/2	M12	426	52	115	36	23	17

Pressure filter without by-pass

Type	b1	b2	b3	b4	Ød1	Ød2	d3 ¹⁾	d4	h1	h2	h4	SW	t1	t2
ABZFD-S0040-10H-420-1X/..-A	93	50	56	32	84	68	G 3/4	M6	137.5	40	85	27	17	9
ABZFD-S0080-10H-420-1X/..-A	128	65	85	35	117	95	G 1 1/4	M10	193.5	47	105	32	21	14
ABZFD-S0160-10H-420-1X/..-A	128	65	85	35	117	95	G 1 1/4	M10	253.5	47	105	32	21	14

¹⁾ Threaded connection to ISO 228

Variant B

Pressure filter

($p = 100$ bar and 210 bar)

ABZFD-S0040-10N-100-1X/..-B

ABZFD-S0040-10N-210-1X/..-B

ABZFD-S0080-10N-100-1X/..-B

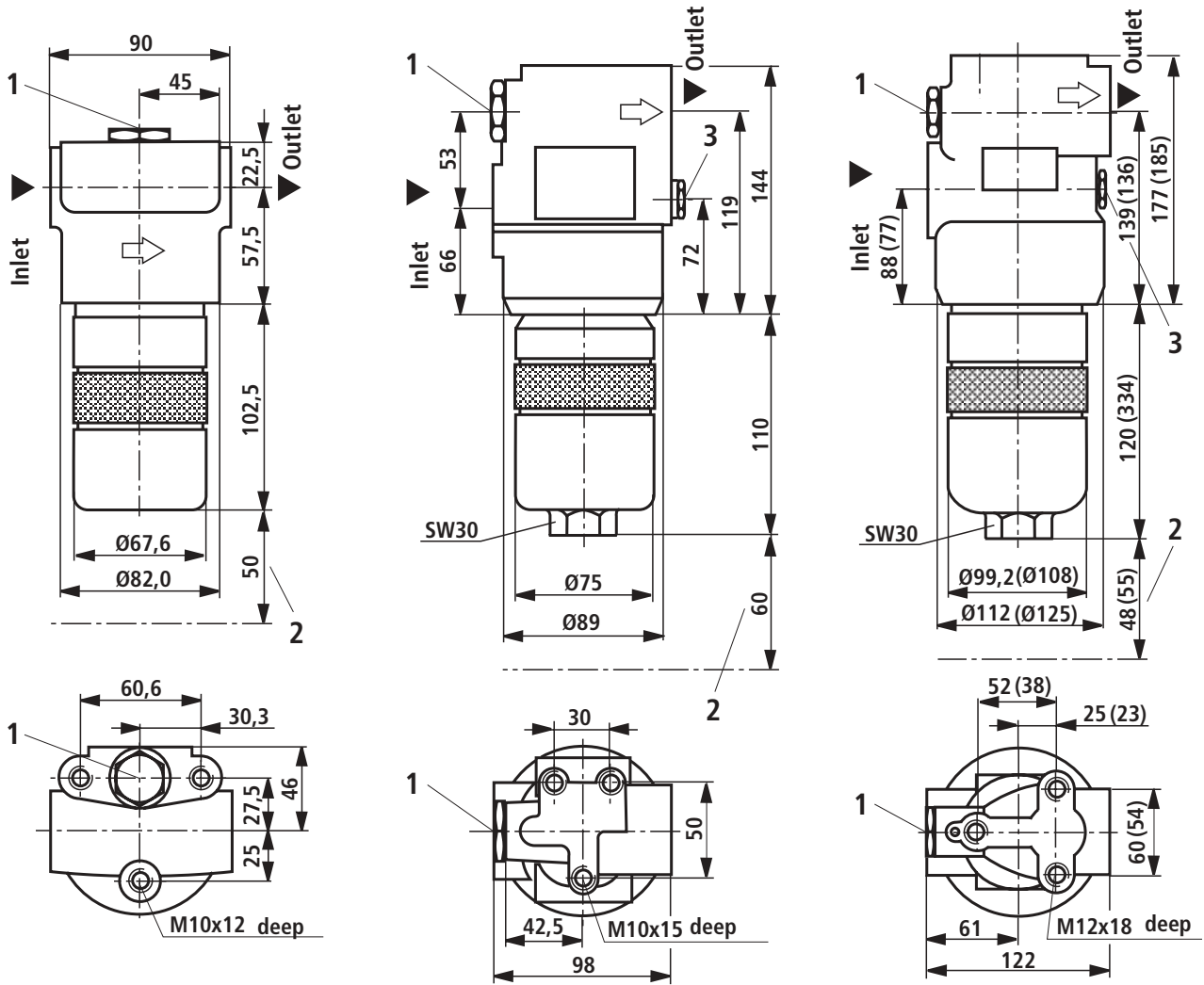
ABZFD-S0080-10N-210-1X/..-B

ABZFD-S0160-10N-100-1X/..-B

ABZFD-S0160-10N-210-1X/..-B

ABZFD-S0240-10N-100-1X/..-B Maße ()

ABZFD-S0240-10N-210-1X/..-B Maße ()



Connections Inlet: G 1/2
Outlet: G 1/2

Inlet: G 1
Outlet: G 1

Inlet: G 1 1/4 (G 1 1/2)
Outlet: G 1 1/4 (G 1 1/2)

- 1 Place of installation for clogging indicator
- 2 Minimum space required to remove element
- 3 Port for taking samples G 1/4

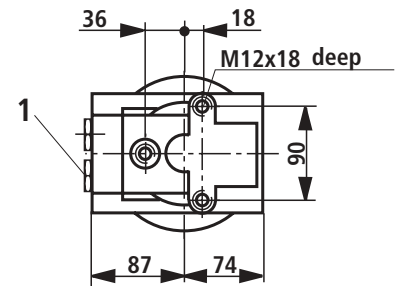
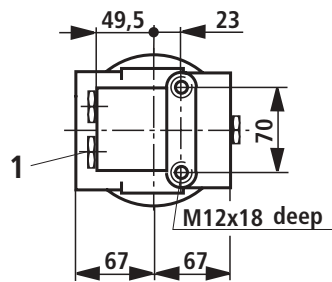
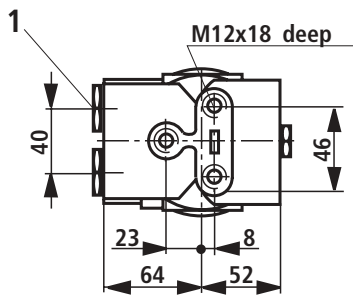
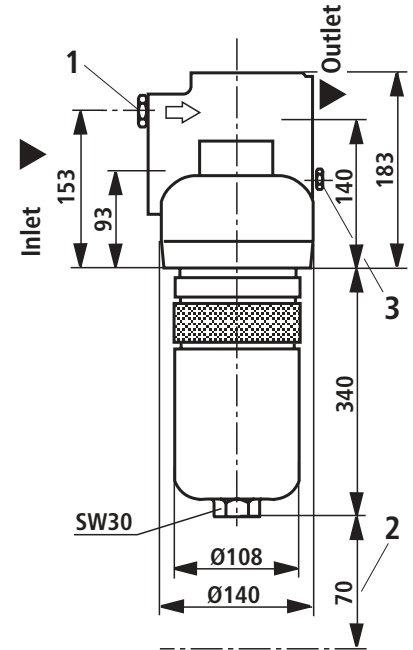
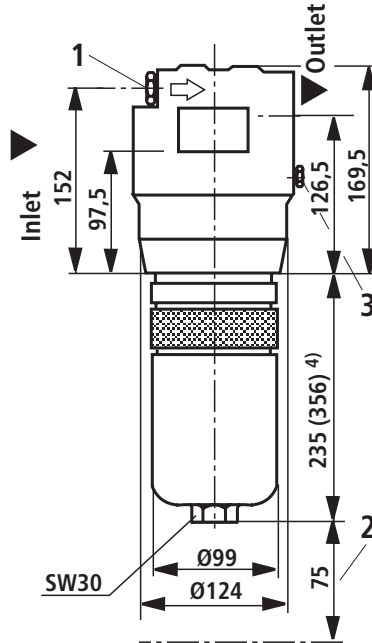
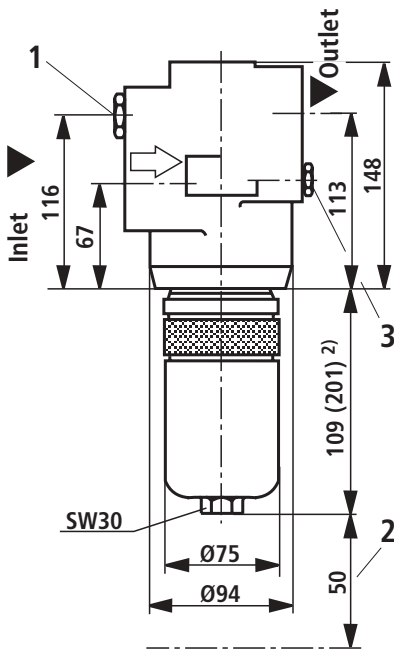
Variant B

Pressure filter (p = 420 bar)

ABZFD-S0040-10N-420-1X/...-B
 ABZFD-S0080-10N-420-1X/...-B
 ABZFD-S0040-10H-420-1X/...-B
 ABZFD-S0080-10H-420-1X/...-B

ABZFD-S0160-10N-420-1X/...-B
 ABZFD-S0240-10N-420-1X/...-B
 ABZFD-S0160-10H-420-1X/...-B

ABZFD-S0350-10N-420-1X/...-B



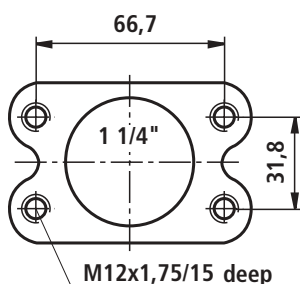
Connections

Inlet: G 3/4¹⁾
 Outlet: G 3/4¹⁾
 Inlet: G 1²⁾
 Outlet: G 1²⁾

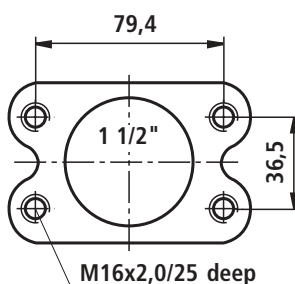
Inlet: G 1 1/4³⁾
 Outlet: G 1 1/4³⁾
 Inlet: SAE 1 1/4
 High-pressure series to ISO 6162⁴⁾
 Outlet: SAE 1 1/4
 High-pressure series to ISO 6162⁴⁾

Inlet: SAE 1 1/2
 High-pressure series to ISO 6162
 Outlet: SAE 1 1/2
 High-pressure series to ISO 6162

Flange dimensions to ISO 6162 for ABZFD-S0240



Flange dimensions to ISO 6162 for ABZFD-S0350



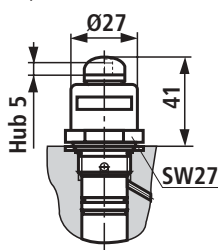
- 1 Place of installation for clogging indicator
- 2 Minimum space required to remove element
- 3 Port for taking samples G 1/4
 - 1) with ABZFD-S0040-10N... with ABZFD-S0040-80N... with ABZFD-S0040-10H...
 - 2) with ABZFD-S0080-10H...
 - 3) with ABZFD-S0160...
 - 4) with ABZFD-S0240...

Clogging indicator

(Dimensions in mm)

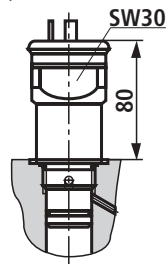
Variant A

Visual differential pressure indicator



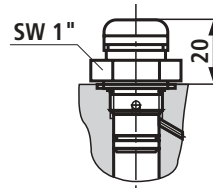
ABZFV-M..., maximum tightening torque $M_{T \max} = 33 \text{ Nm}$
 ABZFV-H..., maximum tightening torque $M_{T \max} = 100 \text{ Nm}$

Electrical differential pressure switch



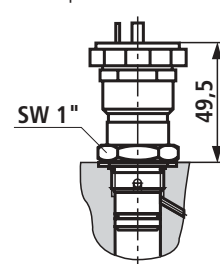
Variant B

Visual differential pressure indicator



maximum tightening torque $M_{T \max} = 54 \text{ Nm}$

Electrical differential pressure switch



Note: Adjustments and fixing only at the specified spanner flats. The specified tightening and adjustment torques must not be exceeded.

Spare parts

Filter element

ABZ F E - -10-1X/ -

Rexroth plant construction accessories

Filter

Filter element

Low differential pressure-stable filter elements for pressure filters with $\Delta p \geq 20 \text{ bar}$ with by-pass valve = **N**
 High differential pressure-stable filter elements for pressure filters with $\Delta p \geq 210 \text{ bar}$ without by-pass valve = **H**

Size (flow)

Series 40	= 0040
Series 80	= 0080
Series 160	= 0160
Series 240	= 0240
Series 350	= 0350

Variant A (filter element)

for filter with by-pass

Filter element	Material no.
ABZFE-N0040-10-1X/M-A	R900229750
ABZFE-N0080-10-1X/M-A	R900229751
ABZFE-N0160-10-1X/M-A	R900229752
ABZFE-N0240-10-1X/M-A	R900229753
ABZFE-N0350-10-1X/M-A	R900229754

for filter without by-pass

ABZFE-H0040-10-1X/M-A	R900229755
ABZFE-H0080-10-1X/M-A	R900229756
ABZFE-H0160-10-1X/M-A	R900229757

Variant A (seal kits)

for filter with by-pass

Seal kit	Material no.
ABZFZ-D0040/0080-D100/420-1X/M-A	R900229761
ABZFZ-D0040/0080-D210-1X/M-A	R900229657
ABZFZ-D0160/0240-D100/420-1X/M-A	R900229762
ABZFZ-D0160-D210-1X/M-A	R900229658
ABZFZ-D0350-D210-1X/M-A	R900229763

¹⁾ for pressure filters with by-pass $p = 100/210 \text{ bar}$

²⁾ for pressure filters with by-pass $p = 420 \text{ bar}$

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