

- M2, p1 = measure connection dirt side
- M2, p2 = measure connection clean side
- E1 = air bleeding dirt side
- E2 = drain dirt side
- E3 = drain clean side

1. Type index:

1.1. Complete filter: (ordering example)

NF. 1000. 10VG. 10. B. P. - . FS. 3. - . - . AE

1	2	3	4	5	6	7	8	9	10	11	12
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- 1 **series:**
NF = partial flow filter
- 2 **nominal size:** 1000
- 3 **filter-material and filter-fineness:**
25 VG = 20 $\mu\text{m}_{(e)}$, 16 VG = 15 $\mu\text{m}_{(e)}$, 10 VG = 10 $\mu\text{m}_{(e)}$,
6 VG = 7 $\mu\text{m}_{(e)}$, 3 VG = 5 $\mu\text{m}_{(e)}$ Interpor fleece (glass fibre)
10 WVG = 10 $\mu\text{m}_{(e)}$, 3 WVG = 5 $\mu\text{m}_{(e)}$ Watersorp-filter element
- 4 **resistance of pressure difference for filter element:**
10 = Δp 10 bar
- 5 **filter element design:**
B = both sides open
- 6 **sealing material:**
P = Nitrile (NBR)
V = Viton (FPM)
- 7 **filter element specification:** (see catalog)
- = standard
VA = stainless steel
ISO6 = see sheet-no. 31601
- 8 **connection:**
FS = SAE-flange connection 3000 PSI
- 9 **no. of version:**

version	A connection size	connection B connection size	C connection size
1	8	8	-
2	8	8	8
3	9	9	-
4	9	9	9

connection size: 8 = 2"
9 = 2 1/2"
- = without connection

- 10 **filter housing specification:** (see catalog)
- = standard
ISO6 = see sheet-no. 31605
- 11 **internal valve:**
- = without
S1 = with by-pass valve Δp 3,5 bar
- 12 **clogging indicator or clogging sensor :**
- = without
OP = visual, see sheet-no. 1628
OE = visual-electrical, see sheet-no. 1628
AE = visual-electrical, see sheet-no. 1609
VS1 = electrical, see sheet-no. 1607
VS2 = electrical, see sheet-no. 1608

1.2. Filter element: (ordering example)

01NR. 1000. 10VG. 10. B. P. -

1	2	3	4	5	6	7
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- 1 **series:**
01NR. = standard return line filter element according to DIN 24550, T4
- 2 **nominal size:** 1000
- 3 - 7 see type index-complete filter

2. Accessories:

- measure- and bleeder connection, see sheet-no. 1650
- evacuation- and bleeder-connections, see sheet-no. 1651
- counter flange, see sheet-no. 1652

weight : approx. 23 kg

3. Spare parts:

item	qty.	designation	dimension	article-no.
1	1	filter element	01NR. 1000	
2	1	filter cover without by-pass valve	31065-3	
	1	filter cover with by-pass valve S1	31461-3	
3	1	mini-measuring connection	MA.3.St	308630
4	3	screw plug	G ½	304678
5	1	O-ring (only with by-pass valve)	22 x 3	304387 (NBR) 304931 (FPM)
6	1	O-ring	170 x 6	304799 (NBR) 306529 (FPM)
7	2	O-ring	90 x 4	306941 (NBR) 307031 (FPM)
8	1	O-ring	22 x 3	304387 (NBR) 304931 (FPM)
9	1	clogging indicator, visual	OP	see sheet-no. 1628
10	1	clogging indicator, visual-electrical	OE	see sheet-no. 1628
11	1	clogging indicator, visual-electrical	AE	see sheet-no. 1609
12	1	clogging sensor, electronical	VS1	see sheet-no. 1607
13	1	clogging sensor, electronical	VS2	see sheet-no. 1608
14	2	O-ring	14 x 2	304342 (NBR) 304722 (FPM)
15	2	screw plug	G 1/8	304791
16	1	screw plug	G 1/8	305496
17	1	O-ring	183 x 4	337005 (NBR) 337006 (FPM)

item 15 execution only without clogging indicator or clogging sensor

4. Description:

The partial flow filter NF is foreseen for the fine filtration of hydraulic and lubrication circuits additionally to the main filter. The big filtration area in comparison to the nominal size is the premise for a high dirt-retaining capacity even in case of small filter-fineness.

Filter elements as fine as 5 µm_(c) are available; finer filter elements on request.

To protect the filter elements and the filter housing equipment with by-pass valves is foreseen. Element change without tools is possible. After release of the straining screw and removal of the cover the elements are accessible and could be changed. The filter elements were delivered completely inclusive seals. Cleaning of the elements not possible therefore the user should have enough spare elements on stock.

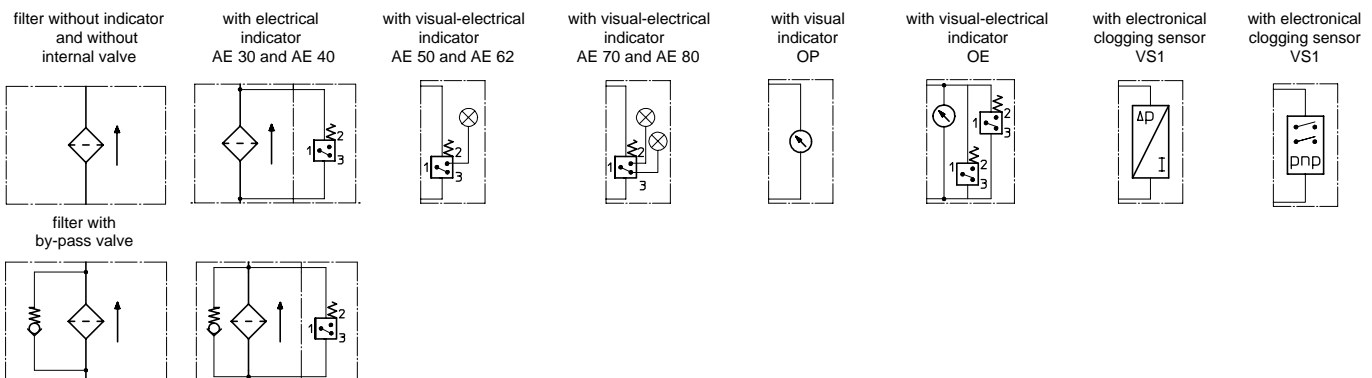
5. Technical data:

temperature range:	- 10°C to + 80°C (for a short time + 100 °C)
operating medium:	mineral oil, other media on request
max. operating pressure:	16 bar
test pressure:	23 bar
connection:	SAE-flange connection 3000 PSI
housing material:	aluminium forging alloy
sealing material:	Nitrile (NBR) or Viton (FPM), other materials on request
installation-position:	vertical
measure connection:	G ¼
evacuation -or bleeder connection:	G ½
volume tank:	11,4 l

Classified under the Pressure Equipment Directive 97/23/EC for mineral oil (fluid group 2), Article 3, Para. 3.

Classified under ATEX Directive 94/9/EC according to specific application (see questionnaire sheet-no. 34279-4).

6. Symbols:



7. Pressure drop flow curves: Precise flow rates see 'INT-Expert-System Filter', respectively Δp-curves; depending on filter fineness and viscosity.

8. Test methods:

Filter elements are tested according to the following ISO standards:

ISO 2941	Verification of collapse/burst resistance
ISO 2942	Verification of fabrication integrity
ISO 2943	Verification of material compatibility with fluids
ISO 3723	Method for end load test
ISO 3724	Verification of flow fatigue characteristics
ISO 3968	Evaluation of pressure drop versus flow characteristics
ISO 16889	Multi-pass method for evaluating filtration performance