

Pos. I: filter 1 in operation
Pos II: filter 2 in operation

with pressure balance valve:
Pos III: valve open
Pos IV: valve closed

Connection standard as in drawing.
On request: inlet - on top and backside
outlet - bottom and backside

Please specify on order!

1) connection for the potential equalisation,
only for application in the explosive area

PRESSURE FILTER, change-over

Series DNR 1001-8201 DN 50-250 PN 16

1. Type index:

1.1. Complete filter: (ordering example)

DNR. 3001. 10VG. 10. B. P. -. FD1. D. -. -. AE

1	2	3	4	5	6	7	8	9	10	11	12
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- series:**
DNR = duplex filter with standard-return-line filter elements
- nominal size:** 1001, 2001, 3001, 4001 (1 level)
2201, 4201, 6201, 8201 (2 levels)
- filter-material and filter-fineness:**
80 G = 80 µm, 40 G = 40 µm, 25 G = 25 µm stainless steel wire mesh,
25 VG = 20 µm_(G), 16 VG = 15 µm_(G), 10 VG = 10 µm_(G), 6 VG = 7 µm_(G), 3 VG = 5 µm_(G) Interpor fleece (glass fibre)
- resistance of pressure difference for filter element:**
10 = Δp 10 bar
- filter element design:**
B = both sides open
- sealing material:**
P = Nitrile (NBR)
V = Viton (FPM)
- filter element specification:**
- = standard; VA = stainless steel; IS06 = see sheet-no. 31601; IS07 = see sheet-no. 31602
- connection:**
FD1 = flange DIN 2633, design C DIN 2526
FD2 = flange DIN 2633, design E DIN 2526
- connection size:**

filter nominal size	DNR 1001	DNR 2001	DNR 3001	DNR 4001
connection size	8-9-A-B	A-B-C-D	B-C-D-E	B-C-D-E
filter nominal size	DNR 2201	DNR 4201	DNR 6201	DNR 8201
connection size	A-B-C-D	A-B-C-D-E	B-C-D-E-F	B-C-D-E

8 = DN 50; 9 = DN 65; A = DN 80; B = DN 100; C = DN 125; D = DN 150; E = DN 200; F = DN 250

- filter housing specification:**
- = standard
IS06 = see sheet-no. 31605
- internal valve:**
- = without; S1 = with by-pass valve 3,5 bar
- clogging indicator or clogging sensor:**
- = without
AE = visual-electrical, see sheet-no.1609
OP = visual, see sheet-no.1614; VS1 = electrical, see sheet-no.1607
OE = visual-electrical, see sheet-no 1614; 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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- series:**
01NR. = standard-return-line filter element according to DIN 24550, T4
- nominal size:** 1000
- 7 | see type index-complete filter

2. Accessories:

- measure-and bleeder -connection, see sheet-no. 1650
- evacuation- and bleeder-connection, see sheet-no. 1651
- counter flange, see sheet-no. 1653
- shut-off valve, see sheet-no. 1655
- lifting mechanism, see sheet-no. 1661

Changes of measures and design are subject to alteration!

3. Dimensions:

type	connection DN	A	B	C	D	E	F	G	H	J	K	L	M	N	weight kg	volume tank
DNR 1001	50	796	915	890	395	330	465	190	340	219	111	70	18	330	170	2x 22,5 l
	65	822	915	890	395	347	465				123					2x 22,5 l
	80	862	965	940	395	400	515				138					2x 24,0 l
	100	914	995	970	395	421	545				159					2x 25,0 l
DNR 2001	80	1092	1105	1070	500	400	645	250	580	406	138	90	22	550	530	2x 94,0 l
	100	1144	1135	1100	500	421	675				159					2x 98,0 l
	125	1182	1175	1140	500	446	715				181					2x 103,0 l
	150	1212	1235	1200	500	492	775				200					2x 109,0 l
DNR 3001	100	1144	1135	1100	500	421	675	250	580	406	159	90	22	550	540	2x 98,0 l
	125	1182	1175	1140	500	446	715				181					2x 103,0 l
	150	1212	1235	1200	500	492	775				200					2x 109,0 l
	200	1330	1345	1310	530	543	885				242					2x 121,0 l
DNR 4001	100	1274	1165	1130	520	421	705	240	715	508	159	90	22	650	550	2x 152,0 l
	125	1322	1205	1170	520	446	745				181					2x 165,0 l
	150	1352	1275	1240	530	492	815				200					2x 178,0 l
	200	1440	1375	1340	560	543	915				242					2x 195,0 l
DNR 2201	80	862	1365	1340	395	400	515	190	340	219	138	70	18	330	240	2x 38,0 l
	100	914	1395	1370	395	421	545				159					2x 39,0 l
	125	1000	1395	1370	410	446	545				181					2x 39,0 l
	150	1060	1395	1370	420	492	545				200					2x 39,0 l
DNR 4201	80	1092	1475	1440	500	400	615	250	580	406	138	90	22	550	960	2x 137,0 l
	100	1144	1475	1440	500	421	615				159					2x 137,0 l
	125	1182	1475	1440	500	446	615				181					2x 137,0 l
	150	1212	1475	1440	500	492	615				200					2x 137,0 l
DNR 6201	200	1330	1575	1540	550	543	675	240	580	406	242	90	22	550	570	2x 149,0 l
	100	1144	1475	1440	500	421	615				159					2x 137,0 l
	125	1182	1475	1440	500	446	615				181					2x 137,0 l
	150	1212	1475	1440	500	492	615				200					2x 137,0 l
DNR 8201	250	1450	1595	1560	560	618	735	240	715	508	288	90	22	650	830	2x 151,0 l
	100	1274	1495	1460	520	421	635				159					2x 218,0 l
	125	1322	1495	1460	520	446	635				181					2x 218,0 l
	150	1352	1515	1480	530	492	655				200					2x 222,0 l
	200	1440	1575	1540	560	543	715				242					2x 233,0 l

4. Spare parts:

4.1. Depending on different series:

item	designation	qty.	dimension and article-no. DNR 1001	qty.	dimension and article-no. DNR 2001	qty.	dimension and article-no. DNR 3001	qty.	dimension and article-no. DNR 4001	qty.	dimension and article-no. DNR 2201	qty.	dimension and article-no. DNR 4201	qty.	dimension and article-no. DNR 6201	qty.	dimension and article-no. DNR 8201
1	filter element	2	01NR. 1000	4	01NR. 1000	6	01NR. 1000	8	01NR. 1000	4	01NR. 1000	8	01NR. 1000	12	01NR. 1000	16	01NR. 1000
2	stop flap ¹⁾	4	DN 50-100	4	DN 80-150	4	DN 100-200	4	DN 100-200	4	DN 100-150	4	DN 80-200	4	DN 100-250	4	DN 100-200
3	O-ring	2	225 x 5 308652 (NBR) 311473 (FPM)	2	429 x 6 308659 (NBR) 310273 (FPM)	2	429 x 6 308659 (NBR) 310273 (FPM)	2	516 x 6 301962 (NBR) 311474 (FPM)	2	225 x 5 308652 (NBR) 311473 (FPM)	2	429 x 6 308659 (NBR) 310273 (FPM)	2	429 x 6 308659 (NBR) 310273 (FPM)	2	516 x 6 301962 (NBR) 311474 (FPM)
4	O-ring	6	90 x 4 306941 (NBR) 307031 (FPM)	12	90 x 4 306941 (NBR) 307031 (FPM)	18	90 x 4 306941 (NBR) 307031 (FPM)	24	90 x 4 306941 (NBR) 307031 (FPM)	10	90 x 4 306941 (NBR) 307031 (FPM)	20	90 x 4 306941 (NBR) 307031 (FPM)	30	90 x 4 306941 (NBR) 307031 (FPM)	40	90 x 4 306941 (NBR) 307031 (FPM)
5	O-ring	2	78 x 10 305017 (NBR) 305552 (FPM)	2	78 x 10 305017 (NBR) 305552 (FPM)	2	78 x 10 305017 (NBR) 305552 (FPM)	2	78 x 10 305017 (NBR) 305552 (FPM)	2	78 x 10 305017 (NBR) 305552 (FPM)	2	78 x 10 305017 (NBR) 305552 (FPM)	2	78 x 10 305017 (NBR) 305552 (FPM)	2	170 x 10 308662 (NBR) 317149 (FPM)
6	O-ring	2	62 x 4 308045 (NBR) 311472 (FPM)	4	62 x 4 308045 (NBR) 311472 (FPM)	6	62 x 4 308045 (NBR) 311472 (FPM)	8	62 x 4 308045 (NBR) 311472 (FPM)	2	62 x 4 308045 (NBR) 311472 (FPM)	4	62 x 4 308045 (NBR) 311472 (FPM)	6	62 x 4 308045 (NBR) 311472 (FPM)	8	62 x 4 308045 (NBR) 311472 (FPM)
7	circlip	2	DIN 472-75x2,5 311471	4	DIN 472-75x2,5 311471	6	DIN 472-75x2,5 311471	8	DIN 472-75x2,5 311471	2	DIN 472-75x2,5 311471	4	DIN 472-75x2,5 311471	6	DIN 472-75x2,5 311471	8	DIN 472-75x2,5 311471
8	by-pass valve	2	DN 50 311974	4	DN 50 311974	6	DN 50 311974	8	DN 50 311974	2	DN 50 311974	4	DN 50 311974	6	DN 50 311974	8	DN 50 311974
9	screw plug	6															
10	gasket	6															

¹⁾ dimension of stop flap = connection size

4.2. Depending on the series:

item	qty.	designation	dimension	article-no.
11	1	clogging indicator, visual	OP	see sheet-no. 1614
12	1	clogging indicator, visual-electrical	OE	see sheet-no. 1614
13	1	clogging indicator, visual-electrical	AE	see sheet-no. 1609
14	1	clogging sensor, electronical	VS1	see sheet-no. 1607
15	1	clogging sensor, electronical	VS2	see sheet-no. 1608
16	2	O-ring	14 x 2	304342 (NBR) 304722 (FPM)
17	2	gasket	A 14 x 18	306330
18	2	screw plug	G ¼	309734

5. Description:

Duplex filters of the series DNR 1001-8201 are suitable for a working pressure up to 16 bar.

Pressure peaks can be absorbed with a sufficient margin of safety.

Four mechanically connected change-over flaps enabling the change-over without service-interruption from the clean to the dirty filter-side.

The filters can be installed as suction filter, pressure filter or return-line filter.

The filter element consist of star-shaped, pleated filter material which is supported on the inside by a perforated core tube and is bonded to the end caps with a high-quality adhesive. The flow direction is from outside to the inside. Filter finer than 40 µm should use throw-away elements made of Interpor fleece (glass fibre). Filter elements as fine as 5 µm₉₀ are available; finer filter elements on request.

INTERNORMEN-Filter elements are known as elements with a high intrinsic stability and an excellent filtration capability, a high dirt-retaining capacity and a long service life.

INTERNORMEN-Filter are suitable for all petroleum based fluids, HW-emulsions, most synthetic hydraulic fluids and lubrication oils.

Approvals according to TÜV, and the mayor „Shipyards Classification Societies“ D.N.V.; B.V.; G.L.; L.R.S.; R.I.N.A.; A.B.S.; P.R.S.;USS.R.S. and others are possible.

6. Technical data:

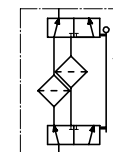
temperature range:	- 10°C to + 80°C (for a short time + 100°C)
operating medium:	mineral oil, other media on request
max. operating pressure:	16 bar
test pressure:	23 bar
connection system:	flange DIN 2633, 16 bar
housing material:	C-steel
sealing material:	Nitrile (NBR) or Viton (FPM), other materials on request
installation position:	vertical
mini-measuring connection:	G ¼ for screw coupling (mini-measuring)

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

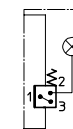
Classified under ATEX Directive 94/9/EC according to specific application (see questionnaire sheet-no. 34279-4).

7. Symbols:

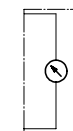
without indicator



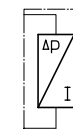
with visual - electrical indicator
AE 50 and AE 62



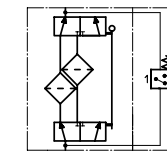
with visual indicator
OP



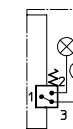
with electronical clogging sensor
VS1



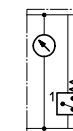
with electrical indicator
AE 30 and AE 40



with visual - electrical indicator
AE 70 and AE 80



with visual - electrical indicator
OE



with electronical clogging sensor
VS2



8. Pressure drop flow curves:

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

9. 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