DND01

Nutating Disc Meter

- **for liquids and oils**
- **Process connection: 3/4" male, 1" male, 1 1/4" male, 1 1/2" female and 2" female**
- **max. viscosity: 700 mPas**
- **measuring range: 1...100 l/min up to 8...643 l/min**
- **materials: PA, PPO, bronze, LCP, st. steel**
- **output signals: pulse output (Reed, PNP, NPN or NAMUR)**
- **optional with separate display and analogue and pulse output**
- **P_{max}: 16, T_{max}: 120 °C**

Description:

Nutating disc meters measure the volume flow directly. In the spherical measuring chamber there is – as a movable chamber wall – the nutating disc with a central bearing, which is driven by the liquid flowing through it. With each complete wobble movement, a defined volume flows through the measuring chamber. An O-ring seal at the outlet guarantees that the incoming medium can only leave the meter through the measuring chamber, thus ensuring measuring accuracy. The number of nutating disc movements is transmitted via a magnetic coupling to the surface-mounted device.

Typical applications:

Nutating disc meters of the DND01 series are mainly used for clean to slightly contaminated liquids, hard and demineralised water, oils, fuels and solvents.

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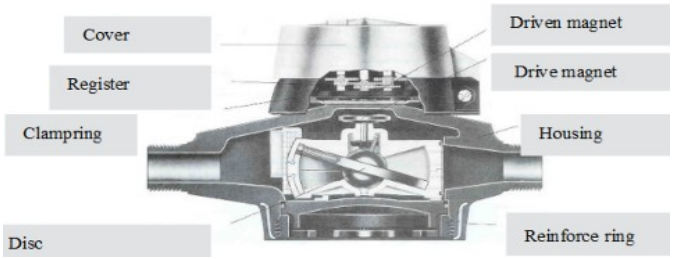
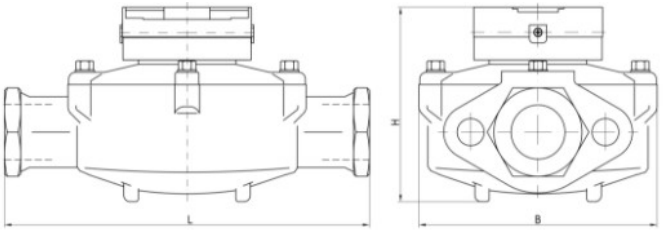
20230907
Subject to technical changes

Construction:

The measuring chamber with nutating disc, positioning bar and transmission magnet forms a unit which is completely inserted into the meter housing. A sieve at the meter inlet protects the measuring chamber from coarse impurities in the liquid.



Dimensions / Technical Data:



Connection code:	P_{max} [bar]	T_{max} [° C]	Weights [kg]	L [mm]	B [mm]	H [mm]
01	16	50	1,2	190	122	125
02	16	50	1,2	190	122	125
03	16	50	1,8	190	122	125
04	16	50	1,8	190	122	125
05	16	120	1,8	190	122	125
06	16	120	1,8	190	122	125
07	16	50	5,8	190	135	130
08	16	120	5,8	190	135	130
09	16	50	1,8	270	151	150
10	16	50	7	230	135	130
11	16	50	5,5	270	184	165
12	16	120	5,5	270	184	165
13	16	50	10,5	321	223	178
14	16	120	10,5	321	223	178
15	16	50	13,6	387	240	204

Output Signals / Technical Data

Pulse output R:	potential free, reed contact, IP65
Pulse output N/P:	PNP or NPN, open collector, 3-wire 5-30 VDC (I ≤ 15 mA), IP66 / IP67 3 m cable
NAMUR M:	N/O, 2-wire, U_0 8,2 V (R_i approx.. 1 kΩ) LED switching status display, 2 m cable, IP66 / IP67, -25...70 °C
Gasket material:	measur. chamber of PPO: Buna (rubber) measur. chamber of LCP: FKM
Accuracy:	± 1,5 % m.v. (± 0,5 % with MB span 1:10)
Viscosity:	max. 700 mPa s

Info on viscosity specification:

1 mPa s (as well cPoise) = $\frac{1\,mm^2/s\,(cStoke)}{medium\,density\,[g/cm^3]}$

Order Code:

Order number:	DND01.	01.	0.	R.	0

Nutating disc meter

Connection / housing / measuring chamber / integrated filter / measuring range :
01 = 3/4“ male / PA 6.6 / PPO / with int. filter / 1...100 l/min
02 = 1“ male / PA 6.6 / PPO / with int. filter / 1...100 l/min
03 = 3/4“ male / bronze / PPO / with int. filter / 1...100 l/min
04 = 1“ male / bronze / PPO / with int. filter / 1...100 l/min
05 = 3/4“ male / bronze / LCP / without filter / 3...100 l/min
06 = 1“ male / bronze / LCP / without filter / 3...100 l/min
07 = 1“ male / st. steel* / PPO / without filter / 1...100 l/min
08 = 1“ male / st. steel* / LCP / without filter / 3...100 l/min
09 = 1 1/4“ male / PA6.6 / PPO / with int. filter / 2...160 l/min
10 = 1 1/4“ male /st. steel* / PPO / without filter / 2...160 l/min
11 = 1 1/4“ male / bronze / PPO / with filter / 4...265 l/min
12 = 1 1/4“ male / bronze / LCP / without filter / 19...265 l/min
13 = 1 1/2“ female NPT / bronze / PPO / with filter / 8..454 l/min
14 = 1 1/2“ female NPT / bronze / LCP / without filter/ 18...454 l/min
15 = 2“ female NPT / bronze / PPO / with filter / 8...643 l/min
* stainless steel 1.4571

Nickel plated:
0 = no
N = nickel plated (only possible with bronze housing)

Output signal:
R = potential free reed contact, pulse output, 2,7 m cable
M = NAMUR pulse output, unscaled, 2 m cable
P = PNP pulse output, open collector, unscaled, 3 m cable
N = NPN pulse output, open collector, unscaled, 3 m cable
A = built-up on-site display, battery-powered
B = built-up on-site display, pulse output NPN, analogue output (4...20 mA)
D1 = on-site display with wall bracket
D2 = on-site display with wall bracket, analogue and pulse output NPN

Options:
0 = without
9 = please specify in plain text

ATEX version on request

On-Site Display, Transmitter

Output signal A or D1 and
Output signal B or D2:

Display:	6-digit, LCD (different units of measurement possible) flow rate or total display
Totalizer:	11-digit (not resettable) 6- digit (resettable)
Ambient temperature:	-20 °C ... 80 °C
Supply:	battery, replaceable (CR123A)
Calibration factor:	can be entered and stored
9-point linearization:	medium: water, for other media please contact PKP.
Protection class:	IP65

Additionally only for output signal B and D2:

Pulse output:	NPN open collector, scalable, adjustable pulse length
Analogue output:	4...20 mA (min / max values programmable)
Supply:	battery CR123A, additional 5...30 VDC (I ≤ 15 mA)

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