

DOZ07

Oval Gear Flowmeter for High Flow Rates

- **viscosity-independent**
- **connection size 1", 1 1/2", 2" and 3"**
- **measuring range: 5,7...170 l/min , 9,5...246 l/min, 15...379 l/min and 19...700 l/min**
- **high accuracy from 0,5 % of measured value**
- **materials: aluminium, st. steel, PVDF, PPS**
- **output signals:
pulse output (reed, PNP, NPN or NAMUR)**
- **optionally with separate display and
analogue and pulse output**
- **P_{max}: 210 bar, T_{max}: 120 °**



Description:

The DOZ07 oval gear flowmeter measures the volume flow of liquid media with a viscosity of up to 500.000 mm²/s, regardless of the actual viscosity of the medium.

In a measuring chamber, two toothed oval gears are rotated by the flowing medium. Each rotary movement transports a defined quantity of liquid through the meter. This rotational movement is detected by a reed contact and output as a pulse. The output frequency of these pulses is directly proportional to the flow rate.

Optionally, the device can be combined with an on-site display, which also offers an analogue or pulse output.

In addition to the connection size in combination with the measuring range, various material combinations, sealing materials and process connections ensure a wide range of applications.

Typical applications:

The DOZ07 oval gear flowmeters are used wherever the flow rate of liquids with different viscosities has to be measured reliably and cost-effectively. Due to the many material combinations, the meters are designed not only for standard applications but also for many chemical applications, e.g. for liquids based on hydrocarbons.

Due to the high accuracy of the oval gear flowmeters, they are generally used for high-precision measuring tasks.

Models:

Code	Material		T _{max} [°C]
	Housing	Rotor	
AR	aluminium	PPS	80
EE	st. steel*	st. steel*	120
ER	st. steel*	PPS	80
PR	PVDF	PPS	80

* stainless steel: 1.4571 (316 Ti)

Technical Data:

Size	Measuring range [l/min]	Visco- sity [mPa s]	Accuracy [% of m.v.]	Pulses/L	P _{max} [bar]
1"	5,7...170	> 5	± 0,5	ca. 43	210*
1"	9,5...150	< 5	± 1,5	ca. 43	210*
1" PVDF	5,7...120	> 5	± 1,5	ca. 43	16
1" PVDF	9,5...120	< 5	± 2,5	ca. 43	16
1 1/2"	9,5...245	> 5	± 0,5	ca. 17	50
1 1/2"	15...227	< 5	± 1,0	ca. 17	50
2"	15...380	> 5	± 0,5	ca. 9	40
2"	23...380	< 5	± 1,0	ca. 9	40
3"	20...700	> 5	± 0,5	ca. 3	25
3"	38...700	< 5	± 1,0	ca. 3	25

*applies to stainless steel housings. 140 bar for aluminium housing

Repeatability: 0,03 %

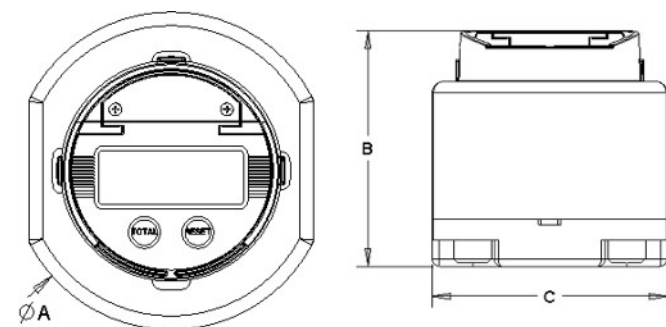
Info on viscosity specification:

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

Output Signals / Protection Class:

Pulse output R: pot. -free, reed contact, IP65, 2,7 m cable
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, U₀ 8,2 V (R_i approx. 1 kΩ)
LED switching status display,
2 m cable, IP66 / IP67, -25...70 °C

Dimensions:



Size	A [mm]	B [mm]	C [mm]	Inst. length flange [mm]
1"	100	99	92	170
1 1/2"	140	125	125	212
2"	150	136	134	264
3"	210	162	180	344

Order Code:

Order number: DOZ07. 25. AR. R. 1. V. 0

**Oval gear flowmeter
for high flow rates**

connection / measuring range / P_{max}:

25 = 1" / 5,7...170 l/min / st. steel: 210 bar,
aluminium: 140 bar, PVDF: 16 bar
40 = 1 1/2" / 9,5...245 l/min / 50 bar
50 = 2" / 15...380 l/min / 40 bar
80 = 3" / 20...700 l/min / 25 bar

Material housing / rotor, T_{max}:

AR = aluminium / PPS, 80 °C
(not for flange connection and 3" thread)
EE = st. steel / st. steel, 120 °C
ER = st. steel / PPS, 80 °C (not for 3")
PR = PVDF / PPS, 80 °C (for 1" only)

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, OC, unscaled, 3 m cable
N = NPN pulse output, OC, 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 = external on-site display with wall bracket
D2 = external on-site display with wall bracket,
analogue and pulse output, 3 m cable

Process connection:

1 = BSP female thread Rp
2 = NPT female thread
3 = DIN flange PN 16
4 = ANSI flange 150 lbs

Gaskets:

V = FKM
E = EPDM
F = FFKM

Options:

0 = without
V = for highly viscous media > 1000 mm²/s
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 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

Additional only for output signal B and D2:

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



PKP Prozessmesstechnik GmbH
Borsigstr. 24 • D-65205 Wiesbaden

+49 (0) 6122-7055-0 • +49 (0) 6122 7055-50
info@pkp.de • www.pkp.de

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