DOZ03

Oval Gear Flowmeter for Low Flow Rates

- **viscosity-independent**
- **connection size 1/8“ and 1/4“**
- **measuring ranges: 0,017...0,83 l/min, 0,04...1,67 l/min and 0,25...8,33 l/min**
- **high accuracy from 0,5 % of measured value**
- **materials: aluminium, stainless steel, PVDF, PPS**
- **output signals: reed contact and Hall sensor (2 pulse outputs)**
- **optionally with separate display and analogue and pulse output**
- **P_{max}: 100 bar, T_{max}: 120 °C**

Description:

The DOZ03 oval gear flowmeter measures the volume flow of liquid media with a viscosity of up to 500,000 mm^2/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 rotation is detected by a Hall sensor or 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 and 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 DOZ03 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.

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Subject to technical changes

Models:

Code	Material		P_{max} [bar]	T_{max} [°C]
	Housing	Rotor		
AE	aluminium	st. steel*	55	120
EE	st. steel*	st. steel*	100	120
PE	PVDF	st. steel*	16	60
AR	aluminium	PPS	55	80
ER	st. steel*	PPS	100	80
PR	PVDF	PPS	16	60

* st. steel: 06 and 08A: 1.4435 (316 Ti), 08B: 1.4571 (316 Ti)

Technical Data:

Size	Measuring range [l/min]	Visco-sity [mPa s]	Accuracy [% of m.v.]	Pulses/L
1/8“	0,017...0,83	> 5	± 1,0	ca. 4400
1/8“	0,033...0,83	< 5	± 1,5	ca. 4400
1/4“	0,04...1,6	> 5	± 1,0 (1,5*)	ca. 2170
1/4“	0,09...1,6	< 5	± 1,5 (2,5*)	ca. 2170
1/4“	0,25...8,3	> 5	± 1,0 (1,5*)	ca. 390
1/4“	0,44...8,3	< 5	± 1,5 (2,5*)	ca. 390

*valid for PVDF-version

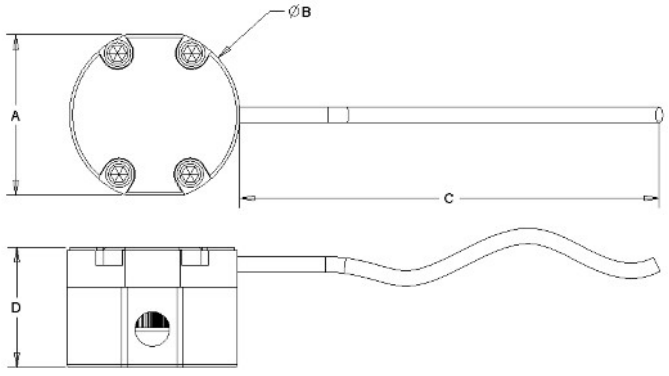
Repeatability: 0,03 %
Output signal: 2 pulse outputs (reed contact and Hall sensor)
Protection class: IP67
Info on viscosity specification:

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

Calibration to Increase Accuracy (option):

Cali-bration	Medium	Viscosity	Accuracy [%]
S1	ISO VG 2	2,7 mPa s (3,3 mm²/s]	± 1,0
S2	ISO VG 5	6,4 mPa s (7,6 mm²/s]	± 0,8
S3	ISO VG 10	18 mPa s (20,5 mm²/s]	± 0,6
S4	ISO VG 32	75 mPa s (87 mm²/s]	± 0,4
S5	ISO VG 100	290 mPa s (330 mm²/s]	± 0,3

Dimensions:



Size	A [mm]	B [mm]	C [m]	D [mm]
1/8“	52	55	3	32
1/4“	52	55	3	40

Order Code:

Order number: DOZ03. | 06. | AE. | RH. | 1. | V. | 0

Oval gear flowmeters for low flow rates

Connection / measuring range:
06 = 1/8“ / 1...50 l/h (0,017...0,83 l/min)
(in version EE only)
08A = 1/4“ / 2,4...100 l/h (0,04...1,67 l/min)
08B = 1/4“ / 15...500 l/h (0,25...8,33 l/min)

Material housing / rotor, P_{max}, T_{max}:
AE = aluminium / stainless steel, 55 bar, 120 °C
EE = st. steel / st. steel, 100 bar, 120 °C
PE = PVDF / stainless steel, 16 bar, 60 °C
AR = aluminium / PPS, 55 bar, 80 °C
ER = stainless steel / PPS, 100 bar, 80 °C
PR = PVDF / PPS, 16 bar, 60 °C

Output signal:
RH = potential-free reed contact and Hall sensor (2 pulse outputs), 3 m cable
D1 = on-site display with wall bracket
D2 = on-site display with wall bracket, analogue and pulse output NPN, 3 m cable

Process connection:
1 = BSP female thread Rp
2 = NPT female thread

Gaskets:
V = FKM
E = EPDM
F = FFKM

Options:
0 = without
HV = for highly viscous media >1000...500.000 mm²/s (only for 08B)
S = special calibration for higher accuracy
9 = please specify in plain text

ATEX version on request

On-Site Display, Transmitter (D1 and 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 option 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)

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