

# DOZ05

## Oval Gear Flowmeter for Middle Flow Rates

- **viscosity independent**
- **process connection 1/2", 3/4" and 1"**
- **measuring range: 1...30 l/min , 2...60 l/min  
and 2,3...68 l/min**
- **high accuracy from 0,5 % of measured value**
- **materials: aluminium, st. steel, PVDF, PPS, LCP**
- **output signals:  
pulse output (Reed, PNP, NPN or NAMUR)**
- **optionally with separate display and  
analogue and pulse output**
- **P<sub>max</sub>: 210 bar, T<sub>max</sub>: 120 °C**



### Description:

The DOZ05 oval gear flowmeter measures the volume flow of liquid media with a viscosity of up to 500.000 mm<sup>2</sup>/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 DOZ05 oval gears flowmeters are used wherever the flow rate of liquids with different viscosities must 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 wheel meters, they are generally used for high-precision measuring tasks.

## Models:

Code	Material		P <sub>max</sub> [bar]	T <sub>max</sub> [°C]
	Housing	Rotor		
AL	aluminium	LCP	140	80
EE	st. steel*	st. steel*	210	120
ER	st. steel*	PPS	210	80
PR	PVDF	PPS	16	80

\* st. steel: 1.4571 (316 Ti)

## Technical Data:

Size	Measuring range [l/min]	Viscosity [mPa s]	Accuracy [% of m.v.]	Pulses/L
1/2"	1...30	> 5	± 0,5	ca. 100
1/2"	2...25	< 5	± 1,5	ca. 100
3/4"	2...60	> 5	± 0,5 (1,5*)	ca. 66
3/4"	4,5...53	< 5	± 1,5 (2,5*)	ca. 66
1"	2,3...68	> 5	± 0,5	ca. 66
1"	5,3...60	< 5	± 1,5	ca. 66

\* valid for PVDF-version

**Repeatability:** 0,03 %

**Info on viscosity specification:**

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

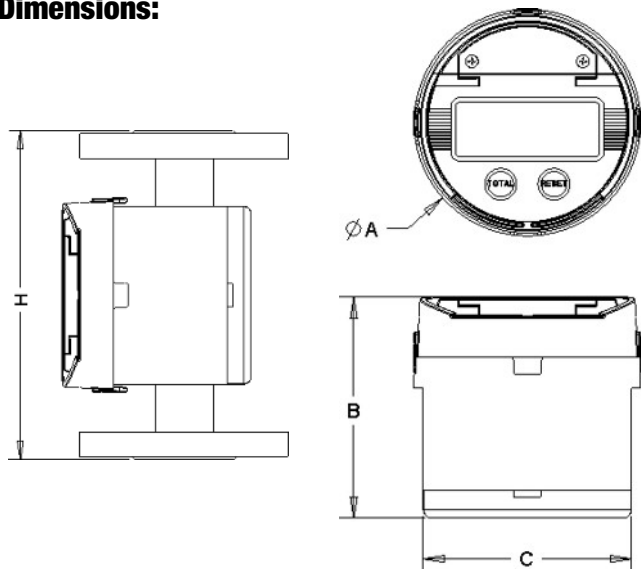
## Output Signals / Protection Class:

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, U<sub>0</sub> 8,2 V (R<sub>i</sub> approx. 1 kΩ)  
LED switching status display,  
2 m cable, IP66 / IP67, -25...70 °C

## Dimensions:



Size	A [mm]	B [mm]	C [mm]	H [mm]
1/2"	100	88	92	170
3/4"	100	98	92	170
1"	100	98	92	170

## Order Code:

Order number: DOZ05. 15. AL. R. 1. V. 0

**Oval gear flowmeter  
for middle flow rates**

**Connection / Measuring range:**

15 = 1/2" / 1...30 l/min (not with PVDF)  
20 = 3/4" / 2...60 l/min  
25 = 1" / 2,3...68 l/min

**Material housing / rotor, P<sub>max</sub>, T<sub>max</sub>:**

AL = aluminium / LCP, 140 bar, 80 °C

(not with flange connection)

EE = st. steel / st. steel, 210 bar, 120 °C

ER = st. steel / PPS, 210 bar, 80 °C

PR = PVDF / PPS, 16 bar, 80 °C (for 3/4" 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), 3 m cable

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...500.000 mm<sup>2</sup>/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:**

11-11-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 pro-  
grammable)

**Supply:**

battery CR123A, additional  
5...30 VDC (I ≤ 15 mA)