

# DOZ01

## Flow sensor with oval rotor assembly for small flow volumes

- Unaffected by viscosity
- Compact design, no inlet piping required
- Materials: PP, ECTFE or stainless steel
- Output signals: pulses, 4 to 20 mA or 2 limit-value relays



### Description:

The model DOZ01 flow sensor with oval rotor assembly measures the flow of liquids, ranging from water to those with a maximum viscosity of 200 cSt, regardless of the actual viscosity of the liquid. In this type of sensor, the flowing liquid sets two toothed oval wheels within a measuring chamber in rotary motion. The rotary motion is detected by a Hall sensor and output as a series of pulses. The output frequency of these pulses is directly proportional to the flow rate. Alternatively, the pulsed output can be converted into an analog signal (4 to 20 mA) or into two limit contacts by optional downstream electronics. The flow sensor housing is available in different material combinations such as PP, ECTFE or stainless steel with the oval wheels made of PEEK. The availability of different oval-wheel axle shafts and gas-

kets allows the DOZ01 to be compatible with the widest varieties of liquids. The device offers two measuring ranges (2 to 10 GPH / 8 to 40 l/h and 3.7 to 21 GPH / 14 to 80 l/h)

### Typical Applications:

Model DOZ01 flow sensors are used wherever the flow of liquids having different viscosities must be reliably and economically measured, such as in the following cases:


- Central lubrication systems
- Transformer oils
- Aggressive/caustic liquids in the chemical industry,


and many more.

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## Models:

- DOZ01.P:** Standard model  
Housing of PP, oval wheels of PEEK  
Axles of zirconium dioxide (ceramics optional)  
Viton gaskets (EPDM or Kalrez optional)
- DOZ01.E:** Model for aggressive/caustic liquids  
Housing of ECTFE, oval wheels of PEEK  
Axles of zirconium dioxide (ceramics optional)  
Viton gaskets (EPDM or Kalrez optional)
- DOZ01.V:** Made of stainless steel for higher system pressures (up to 290 psi / 20 bar)  
Housing of stainless steel AISI 316 / 1.4401, oval wheels of PEEK  
Axles of zirconium dioxide (ceramics optional)  
Viton gaskets (EPDM or Kalrez optional)

## Measuring ranges:

Meas.-range (GPH / l/h)	Con-nection (female NPT or G)	Start-up (GPH / l/h)	Width (inch / mm)	Height w/o con-necter (inch / mm)	Depth (inch / mm)	Pulses / L approx. *)
2-10 / 8-40	1/4"	0.5 / 2	2.13 / 54	1.77 / 45	1.77 / 45	6000
3.7-21 / 14-80	1/4"	1.3 / 5	2.13 / 54	1.77 / 45	1.77 / 45	3400

\*) Due to manufacturing tolerances, the pulse/liter rating may vary by approx.  $\pm$  3%. However, each device is individually checked before delivery and provided with its own exact pulse/liter rating.

## Output signals:

- DOZ01...P:** Pulse output, rectangular pulse signal
- DOZ01...A:** Analog output, 4 to 20 mA, 2-wire
- DOZ01...S:** Switched output  
2 limit-value relays (0.1A at 24 VDC)  
Programmable, pulse output

## Electrical Connection:

	DOZ01P	DOZ01S	DOZ01A
Power supply	Pin 1		white
Signal	Pin 2		green
Ground	Pin 3		brown
Relais 1			yellow
Relais 1			grey
Relais 2			pink
Relais 2			blue
4...20mA Signal +		Pin 1	
4...20mA Signal -		Pin 2	

## Options:

- Gaskets of EPDM or Kalrez
- Ceramic axle shafts

## Model Coding:

**Order Number:** DOZ01 P. V. 1. P. 0.

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### Models:

P = PP housing, PEEK oval wheels  
E = ECTFE housing, PEEK oval wheels  
V = Stainless steel housing, PEEK oval wheels

### Gasket:

V = Viton (standard)  
E = EPDM  
K = Ceramic

### Measuring range:

1 = 2-10 GPH / 8-40 l/h  
2 = 3.7-21 GPH / 14-80 l/h

### Output signals:

P = Pulse output  
A = Analog output, 4 to 20 mA  
S = 2 limit-value relays and pulse output

### Options:

0 = None  
1 = Ceramic axle shafts  
N = 1/4" NPT process connection  
G = G 1/4 process connection  
9 = Please specify in writing.

## Technical Specifications:

### Max. pressure:

PP: 145 psi / 10 bar  
ECTFE: 145 psi / 10 bar  
Stainless steel: 290 psi / 20 bar

**Liquid temperature:** 32 to 176 °F / 0 to 80 °C

### Measuring error:

5 to 200 cSt:  $\pm$  2,5% of end value  
<5 cSt:  $\pm$  4%

**Process connection:** 1/4" female thread, NPT or G

**Installation position:** Any

### Voltage supply:


Pulse output: 4.5 to 24 VDC  
Analog output: 15 to 24 VDC  
Limit-value relay: 15 to 24 VDC

### Electrical connection:

Pulse and analog output: 5-pin plug connection as per EN 175301-803A  
Limit-value relay: female cable connector with matching plug fitted with 1 meter of cable

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