

# DR05

## Flow Sensor with Plastic Paddle Wheel

- **Made completely of plastic (no metal parts)**
- **For pipe sizes from 1" to 2"**
- **Materials: PP, ECTFE, ceramics, Viton**
- **Output signals: Pulses, 4 to 20 mA or 2 limit switches**
- **Turndown ratio up to 50:1**



### Description:

The DR05 paddle-wheel flow sensor measures the flow of water and substances similar to water. The flow sensor consists of a section of polypropylene pipe fitted with a paddle wheel. The paddle wheel, which extends into the area of flow, is set into rotation by the flowing liquid. 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 integrated electronics. DR05 paddle-wheel flow sensors are made completely of plastic; they have no metal parts. These devices are available for pipe sizes of 1" to 2" with turndown ratios of up to 50:1.

### Typical Applications:

Model DR05 paddle-wheel flow sensors are used wherever the flow of liquids having low viscosities must be reliably and economically measured, including but by no means limited to, the following cases:

- In cooling systems
- For demineralized water
- For aggressive/caustic liquids in the chemical industry

## Models:

**DR05.P:** Housing made of PP, rotor made of ECTFE, wheel axles and bearing made of ceramics, Viton gaskets (EPDM optional)

## Measuring Ranges:

Measuring range (GPM / l/min)	Connection (straight or NPT female thread)	Pulses / L (approx.)
1.3-66 / 5-250	1"	54
2.6-105 / 10-400	1-1/4"	32
4-160 / 15-600	1-1/2"	20
5.3-265 / 20-1000	2"	10

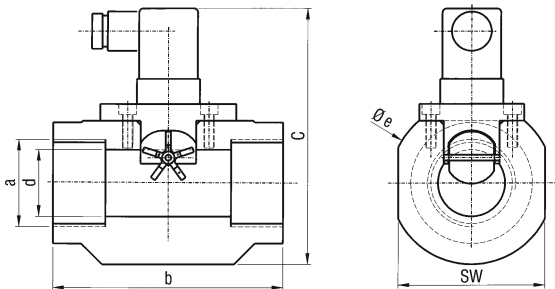
## Output Signals:

**DR05...P:** Pulse output  
Rectangular pulse signal

**DR05...A:** Analog output:  
4 to 20 mA, 2-wire

**DR05...S:** Switched output  
2 limit switches (0.1A at 24 VDC),  
programmable

## Dimensions:



Nominal size a	b (inch / mm)	c (inch / mm)	d (inch / mm)	e (inch / mm)	SW (inch / mm)
DN25 / 1"	4.33 / 110	4.69 / 119	0.98 / 25	2.91 / 74	2.76 / 70
DN32 / 1-1/4"	4.33 / 110	4.84 / 123	1.26 / 32	3.07 / 78	2.76 / 70
DN40 / 1-1/2"	4.72 / 120	4.92 / 125	1.57 / 40	3.15 / 80	2.95 / 75
DN50 / 2"	4.92 / 125	5.31 / 135	1.97 / 50	3.50 / 89	2.95 / 75

## Electrical Connection:

	DR05...P	DR05...A	DR05...S
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

## Ordering Code:

Order Number: DR05. P. V. 25G. P. 0

Plastic Paddle-wheel  
flow sensor

### Models:

P = PP housing, rotor of ECTFE

### Gasket:

V = Viton (standard)  
E = EPDM

### Measuring range and process connection:

<b>Threaded, NPT female:</b>	<b>Threaded, BSP female:</b>
25N = 1.3 - 66 GPM, 1"	25G = 5 - 250 l/min, 1"
32N = 2.6 - 105 GPM, 1 1/4"	32G = 10 - 400 l/min, 1 1/4"
40N = 4 - 160 GPM, 1 1/2"	40G = 15 - 600 l/min, 1 1/2"
50N = 5.3 - 265 GPM, 2"	50G = 20 - 1000 l/min, 2"

### Output Signal:

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

### Options:

0 = None  
9 = Please specify in writing.

## Technical Specifications:

**Max. pressure:** 145 psi / 10 bar

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

**Measuring error:** ± 3% of end value (full scale)

**Repeatability:** < ± 0.5% of end value (full scale)

**Process connection:** 1" to 2" BSP or NPT female thread

**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 switch: Female cable connector with matching plug fitted with 1 meter of cable