

Flow sensor

DF090



Description

The DF090 flow sensor measures the flow of a fluid in a pipe system. A flow sensor detects a change in the flow rate. The flow sensor works based on the rotor principle. This rotor consists of five blades in which magnetic plates have been cast.

The flowing fluid causes the rotor to move, which generates current impulses in the magnetic field sensor, which is fitted in the flow sensor's body. The integrated signal amplifier converts these current impulses into a square wave signal that has an output frequency which is proportional to the flow rate.

Thanks to the open rotor construction, the blades have almost no effect on the fluid's flow pattern and the pressure loss is kept to a minimum.

Partly due to the lack of magnetic interaction between the rotor and the magnetic field sensor, the flow sensor's minimum flow rate is 0.3 m/s. The maximum flow rate is 3 m/s. Depending on the design, the output frequency is approximately 45 Hz at 1 m/s. The output signal's amplitude is equal to the supply voltage and can bridge a distance of 100 metres without additional amplification.

The DF090 flow sensor can measure the flow in any direction. The concentration of solid particles in the fluid must not exceed 2-5% of the volume. The fluid's viscosity must be 0.5-20 cSt.

Thanks to the few parts of the DF090 flow sensor that are in contact with the medium, it can be used in a wide variety of applications.

Materials

The DF090 flow sensor is made of the following materials:

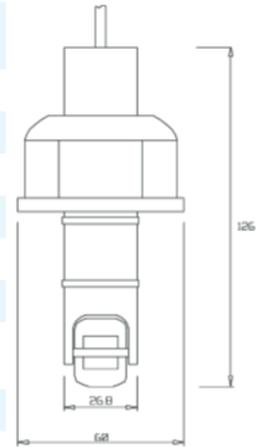
- Flow sensor body: PP
- Rotor: E-CTFE (HALAR) as standard
- Rotor shaft: stainless steel
- Seal (O-ring): EPDM

This combination of materials makes it possible to use the DF090 flow sensor in temperatures up to 100 °C at pressures up to 10 bar.

Technical specifications

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Supply voltage:	5-24 V (DC)
Maximum current consumption:	35 mA
Electrical connection:	Moulded cable, 3-wire, 2-metre cable
Ingress protection:	IP65 according to IEC529 and DIN 40050
Weight:	Approx. 190 g
Maximum cable length:	100m
Measurement range:	0.3-3 m/s
Output frequency:	Approx. 45 Hz/m/s
Output signal:	5-24 V square wave NPN (Pull down, open collector)
Measurement accuracy:	+/- 1% of the measurement range end value
Linearity:	+/- 1% across the entire measurement range
Reproducibility:	+/- 0.5% across the entire measurement range
Medium viscosity:	0.5-20 cSt.



Electrical connection:

