

EMD *flywheel* the simple solution

Transparent flow measuring device for fluid metals

Measurement principle: magnetic, mechanical

Signal output: 0-10V or 4-20 mA



Application area

The flow measuring device **EMD *flywheel*** is suitable for the following measurement tasks:

- ✓ Monitoring of fluid metal flows within closed pipes for nearly all metallic materials
- ✓ Monitoring of flow during continuous, chill and centrifugal casting
- ✓ Monitoring of fluid metal loops within nuclear facilities

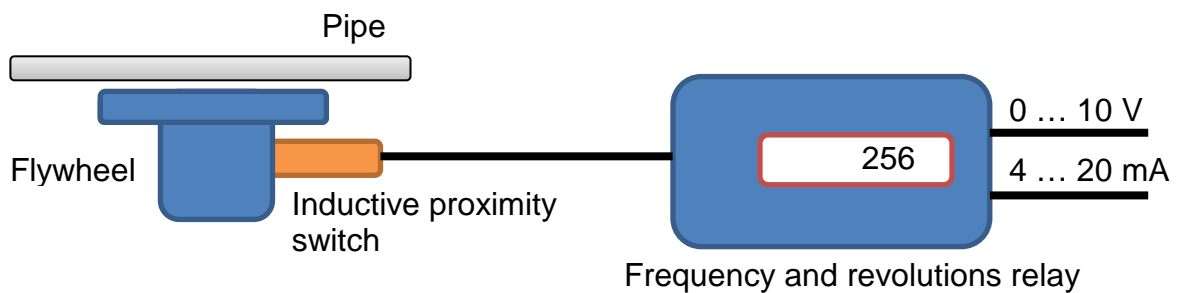
Your advantages

- Contact-free measurement principle
- Short reaction time for measurement
- Available for various pipe dimensions
- Immune to electro-magnetic disturbances
- Pre-calibratable with GaInSn

Measurement principle:

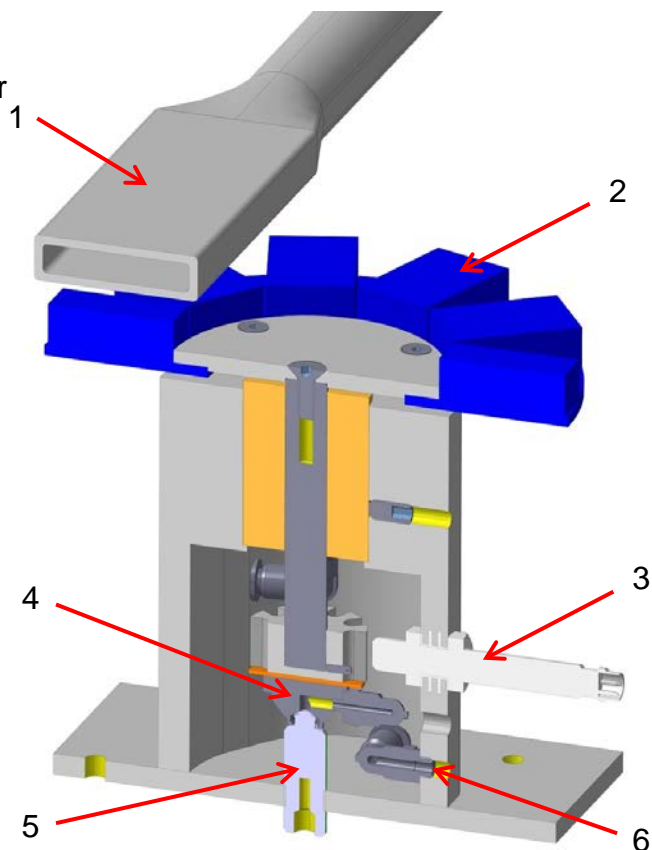
The flywheel is powered by the fluid in the above situated pipe. The rotation of the shaft is recorded by an inductive proximity switch and is subsequently analyzed by a frequency and rotation relay. The measurement can be read out in a voltage value ranging from 0 – 10 V or in a current value ranging from 4 – 20 mA.

Block diagram EMD fw:



Construction:

- (1) Pipe
- (2) Core pad
- (3) Inductive proximity switch
- (4) Air bearing pad
- (5) Center screw
- (6) Compressed air connector



technical data:

Power supply:

Supply voltage:	AC/DC 24 bis 240 V
Power input:	< 3 W und < 10 VA

Pressure supply:

Medium:	Nitrogen or compressed air
Pressure:	2 bar

Dimensions/weight:

Transducer: W x H x D [mm] & weight	70 x 90 x 58	0,2 kg
Sensor EMD fw: WxHxD [mm] & weight	150 x 125 x 150	6,0 kg
Sensor EMD fw: WxHxD [mm] & weight	130 x (170+h_Kanal) x 130	6,5 kg
Mounting position of sensor unit	Horizontal	
Degree of protection of enclosure	IP30	

Medium ambience conditions:

Allowed ambient temperature	0°C bis 60°C
Allowed relative humidity	<85%
Other mounting conditions	dry interieur room
Medium	liquid metal electr. conductance $>10^5$ S/m and $\leq 10^7$ S/m

Measurement range:

Flow measurement range	0,05 m/s – 2 m/s, bubble-free flow
Response time	>5s
Dimensions of the flow channel (diameter)	Standard: 15 mm – 73 mm (larger dimensions on request)
Output parameters / interfaces	0 – 10 V or 4 – 20 mA / Open-Collector
Measurement error	10-15 % of full scale
Length of inlet path	5 x d _i (inside pipe diameter)
Length of outlet path	3 x d _i (inside pipe diameter)

Imprint:

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