



Magnetic Inductive Flow Sensors induQ®



Series VMI



Magnetic Inductive Flow Sensors **induQ®**, Series VMI

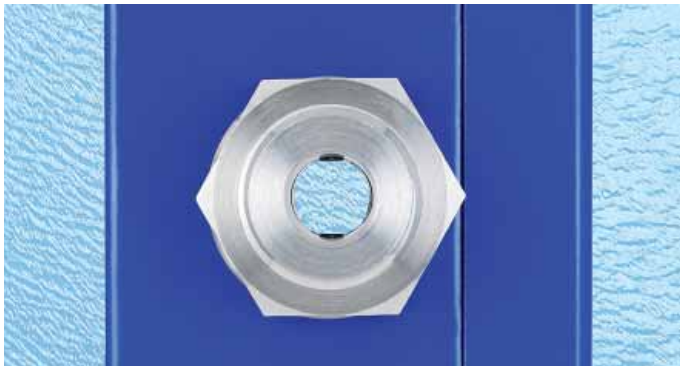
Free Flow!

Compact - cost-effective - robust!

The **induQ®** series from SIKA is a trio of extremely compact, low cost, magnetic inductive flow sensors. This new product line allows a unique and highly reliable measuring technique to be introduced into areas of process control previously considered not possible.

The advantages of the **induQ®** will convince you:

- No moving parts
- No mechanical wear
- Free pipe cross section
- No additional pressure drop
- Insensitive with contaminated liquids
- Maintenance-free
- Quick response time (< 500 ms)
- Minor requirements to the inlet pipe



Changes of temperature, density, viscosity, concentration or electrical conductivity of the medium do not affect the output signal.

Typical application areas

induQ® can be used in areas where flow sensors with moving parts e. g. paddle wheel sensors, cannot be applied due to contaminated media.

The sensor is intended for continuously measuring of flow rates or for dosing / batching of electrically conductive liquids with a minimum conductivity of 50 $\mu\text{S/cm}$.

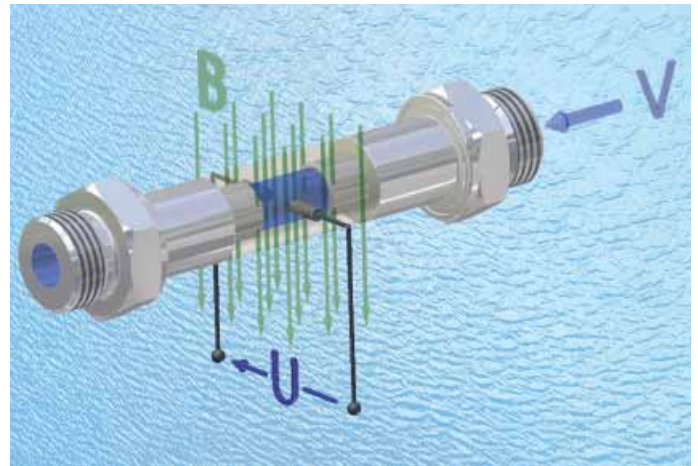
induQ® is the ideal flow sensor for interference free operation combined with long-life cycle.

Operational principle

The flow sensor **induQ®** operates on the inductive principle:

The measuring pipe is in a magnetic field (B). If an electrically conductive medium with the measured flow (Q) passes through the pipe and thus right-angled to the magnetic field, a voltage (U) will be induced into the medium which is proportional to the average flow velocity and picked up by the two electrodes.

The output signal is issued as a flow proportional frequency signal.



Output signals

Two options are available for output signals:

- Frequency output signal (standard)
- Analog and frequency output signal (option)

Materials

Electrodes	Stainless steel 316 TI
Process connections	Stainless steel 316 TI
Measuring pipe	PEEK-GF30
Gasket	EPDM
Housing	Aluminium casting

Technical data

Type	VMI 07	VMI 10	VMI 20
Flow range	0.25...5.3 GPM	0.5...10.5 GPM	2.5...52.8 GPM
Accuracy	±2 % of reading	±1 % of reading	±2 % of reading
Signal output starting from	approx. 0.13 GPM	approx. 0.25 GPM	approx. 1.3 GPM
Repeatability	2 %	1 %	2 %
Medium	Water and other conductive liquids		
Minimum conductivity of medium	50 µS/cm (lower conductivity affects the accuracy)		
Max. medium temperature	185 °F		
Ambient temperature	41...158 °F		
Nominal pressure	232 psi		
Diameter	1/4“	3/8“	3/4“
Process connection	1/2“ NPT male thread	1/2“ NPT male thread	1“ NPT male thread
Flow indication	LED green, flow proportional blinking		
Output signals			
Frequency output signal			
• Pulse rate**	Standard: 3,237 pulses/Gal, Optional: 4...7,700 pulses/Gal factory setting	Standard: 3,237 pulses/Gal, Optional: 4...3,800 pulses/Gal factory setting	Standard: 757 pulses/Gal, Optional: 4...770 pulses/Gal factory setting
• Resolution	Standard: 0.0003 Gal/pulse, Optional: 0.26...0.00013 Gal/pulse factory setting	Standard: 0.0003 Gal/pulse, Optional: 0.26...0.00026 Gal/pulse factory setting	Standard: 0.0013 Gal/pulse, Optional: 0.26...0.0013 Gal/pulse factory setting
• Signal shape	Square wave signal NPN, internal pull-up resistor 2 kΩ pulse duty ratio 50:50	Square wave signal NPN, internal pull-up resistor 2 kΩ pulse duty ratio 50:50	Square wave signal NPN, internal pull-up resistor 2 kΩ pulse duty ratio 50:50
• Signal current	Max. 20 mA, current limited	Max. 20 mA, current limited	Max. 20 mA, current limited
Analog output signal (optional)			
• Scaling	4...20 mA corresp. 0... 5GPM*	4...20 mA corresp. 0...10 GPM*	4...20 mA corresp. 0...52 GPM*
• Current limitation	approx. 26 mA	approx. 26 mA	approx. 26 mA
• Max. burden	250 Ω to GND	250 Ω to GND	250 Ω to GND
General data			
Response time	< 500 ms		
Electrical connection	Plug connector M12x1		
Power supply	24 VDC ±10 %		
Current consumption	Max. 80 mA		
Electr. protection measures	Short-circuit proof (up to 30 V) and polarity protection (up to -30 V)		
Protection class	IP 65		

* others on request

**optional output signal with lower frequency, designed specifically for connection to digital PLC input modules

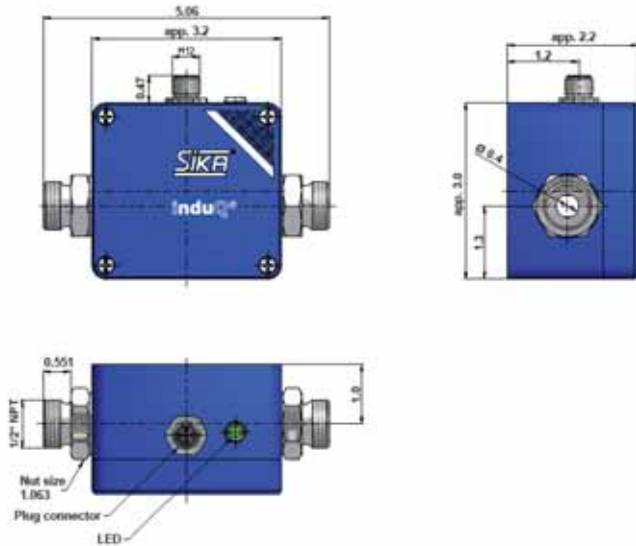
Order code

		Order number		
Diameter	1/4"	VMI0720K7		N3
	3/8"	VMI1040K7		N3
	3/4"	VMI2011K7		N5
Output signal	Frequency output signal Analog and frequency output signal		GPT0 CPT0	

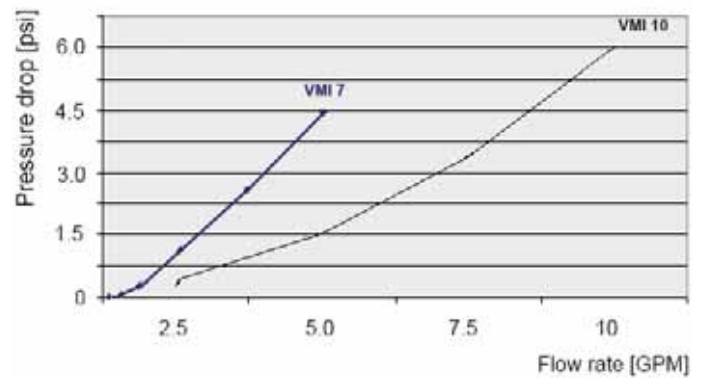
Accessory

Accessory part	Length	Order code	
Connection cable with 4 pin cable socket M12x1, angle type molded lead, sheathing material PUR, screened, ($T_{\max} = 176^{\circ}\text{F}$) UL-approval	9.8 Ft	XVT 2053	
	16.4 Ft	XVT 2009	
	32.8 Ft	XVT 2070	

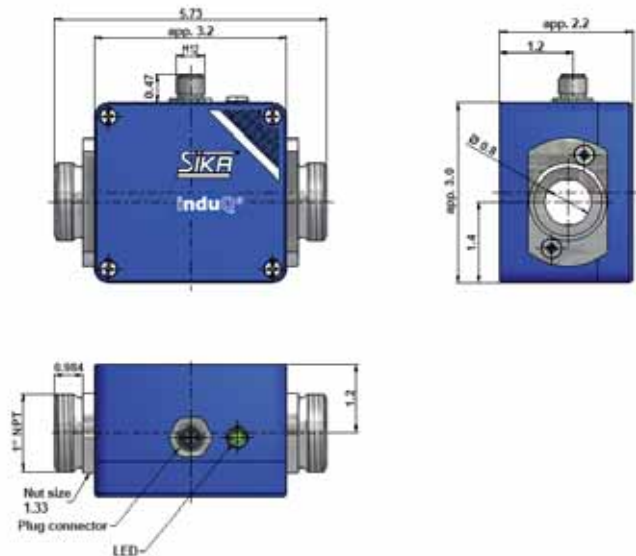
Dimensions VMI 07 and VMI 10



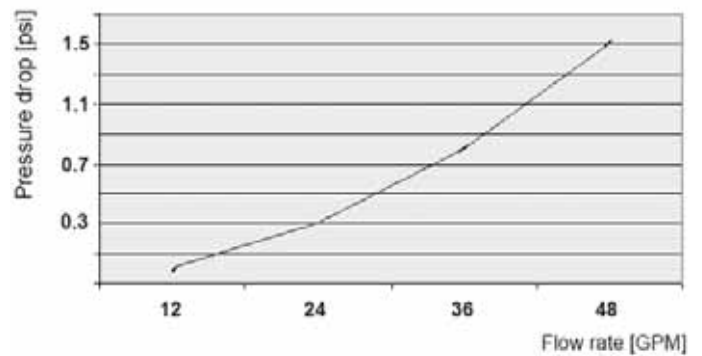
Pressure drop VMI 07 and VMI 10



Dimensions VMI 20



Pressure drop VMI 20



Our Production and Sales Range



Flow Sensors without moving Parts



Turbine Flow Sensors



Flow Switches



Pressure Gauges and Pressure Sensors



Industrial Thermometers



Electronic Digital Thermometers, Dial Thermometers



Measuring Instruments



Temperature Sensors



Calibrators, DKD-Laboratory

Your competent partner for measurement and control

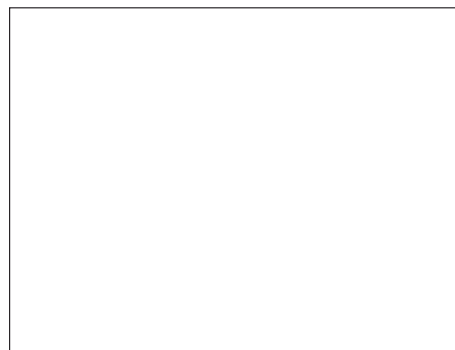
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Subject to technical modification



VMI_u/0709