



# Magnetic Inductive Flow Sensors **induQ**®

## Series VMI

**SIKA**®  
founded 1901  
Dr. Siebert & Kühn GmbH & Co. KG



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

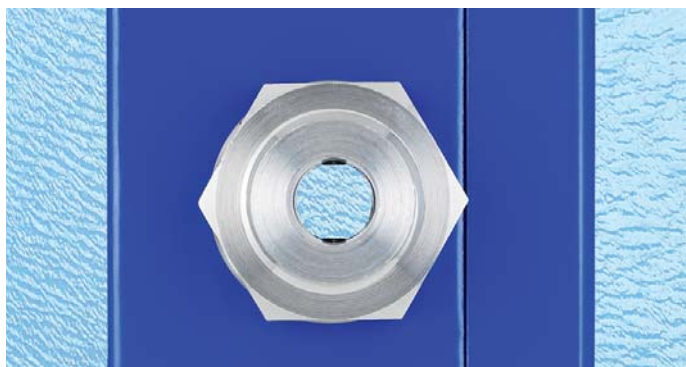
## Free Flow!

### Compact - cost-effective - robust!

The **induQ®** 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  $\mu\text{S}/\text{cm}$ .

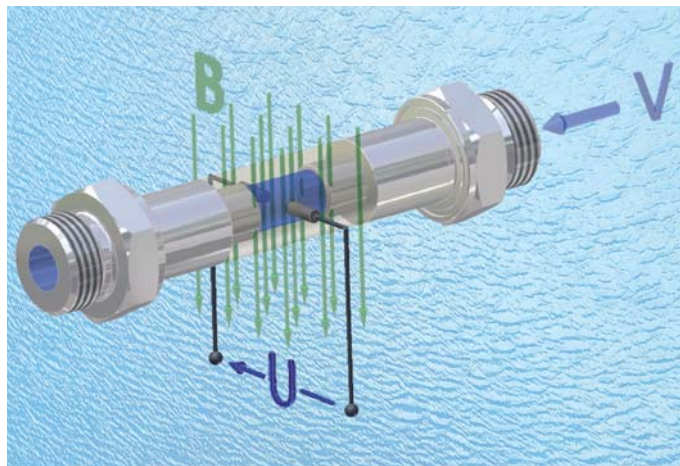
**induQ®** is the ideal flow sensor for interference free operation combined with long-life cycle.

### 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 1.4571
Process connections	Stainless steel 1.4571
Measuring pipe	PEEK-GF30
Gasket	EPDM
Housing	Aluminium casting

## Technical data

Type	VMI 07	VMI 10	VMI 20
Flow range	1...20 l/min	2...40 l/min	10...200 l/min
Accuracy	±2 % of reading	±1 % of reading	±2 % of reading
Signal output starting from	approx. 0.5 l/min	approx. 1 l/min	approx. 5 l/min
Repeatability	2 %	1 %	2 %
Medium / min. conductivity of medium	Water and other conductive liquids / 50 µS/cm (lower conductivity affects the accuracy)		
Max. medium temperature	85 °C		
Ambient temperature	5...70 °C		
Nominal pressure	PN16		
Diameter	DN 7	DN 10	DN 20
Process connection	½“ BSP male thread	½“ BSP male thread	1“ BSP male thread
Flow indication	LED green, flow proportional blinking		
Output signals			
Frequency output signal			
• Pulse rate**	Standard: 855 pulses/l, Optional: 1...2 000 pulses/l factory setting	Standard: 855 pulses/l, Optional: 1...1 000 pulses/l factory setting	Standard: 200 pulses/l, Optional: 1...200 pulses/l factory setting
• Resolution	Standard: 1.2 ml/pulse, Optional: 1 000...0.5 ml/pulse factory setting	Standard: 1.2 ml/pulse, Optional: 1 000...1 ml/pulse factory setting	Standard: 5 ml/pulse, Optional: 1 000...5 ml/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)	4...20 mA proportional to 0...20 l/min*	4...20 mA proportional to 0...40 l/min*	4...20 mA proportional to 0...200 l/min*
• 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

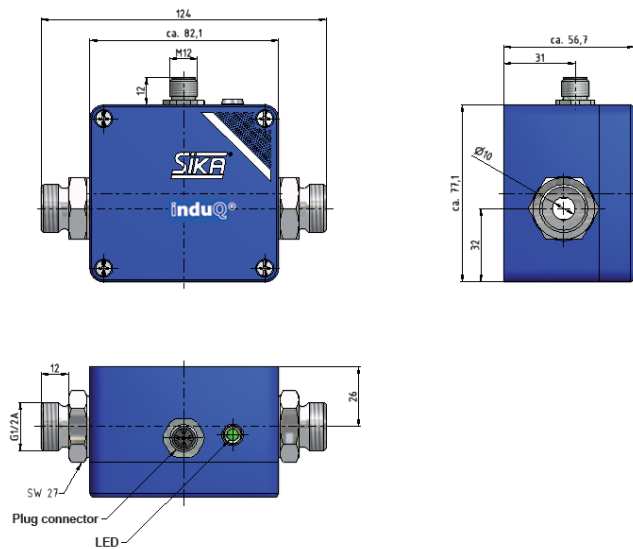
## Order code

		Order number		
Diameter	DN 7	VMI0720K7		A3
	DN 10	VMI1040K7		A3
	DN 20	VMI2011K7		A5
Output signal	Frequency output signal		2PT0	
	Analog and frequency output signal		BPT0	

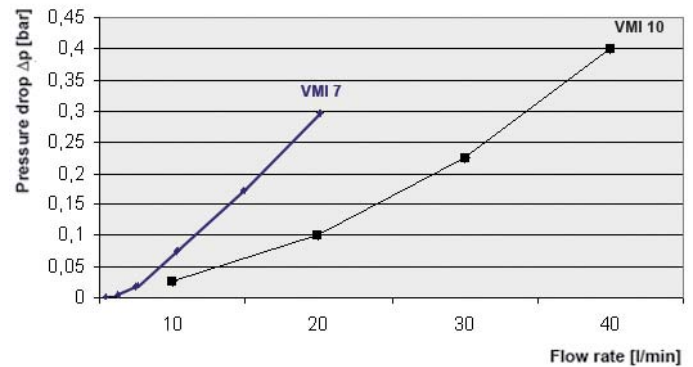
## Accessory

Accessory part	Length	Order code	
Connection cable with 4 pin cable socket M12x1, angle type molded lead, sheathing material PUR, screened, (T <sub>max</sub> = 80 °C) UL-approval	3 m	XVT 2053	
	5 m	XVT 2009	
	10 m	XVT 2070	

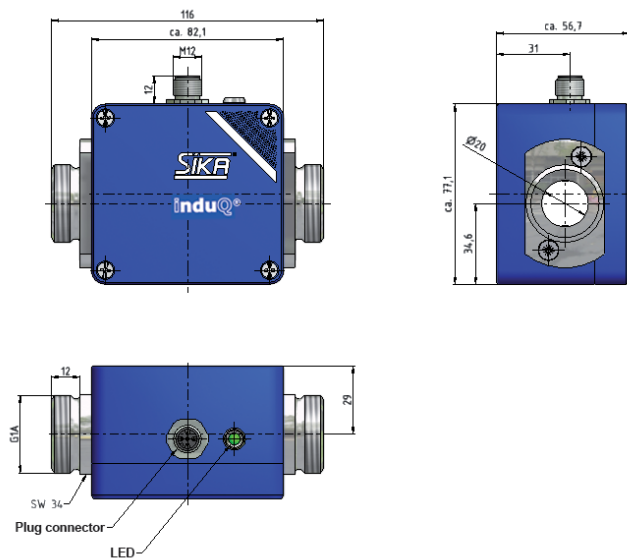
## Dimensions VMI 07 and VMI 10



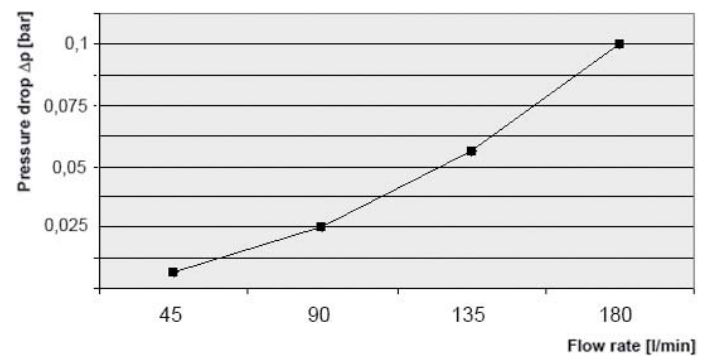
## Pressure drop VMI 07 and VMI 10



## Dimensions VMI 20



## Pressure drop VMI 20





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Flow Sensors without moving Parts



Turbine Flow Sensors



Flow Switches



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founded 1901  
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...measurement...control...calibration

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