

Product information IZM-Q

FOOD

Electromagnetic Flow Meter IZM-Q

Application/Specified usage

- Electromagnetic flowmeter for the measurement of flow rate and volume especially in US Milk receiving applications
- Suitable for liquids, mash and pastes with a minimum conductivity of $5 \mu\text{S}/\text{cm}$
- Precise measurement of media containing solids
- Measurement range from 0.88 gpm to 880 gpm

Hygienic design/Process connection

- All wetted materials are FDA-conform
- Wear-free measuring principle
- PFA material used in flow tube liner
- PFA liner resistant to steam and vacuum conditions
- Electrodes made of stainless steel 1.4404 / AISI 316L

Special features/Advantages

- For product and CIP/SIP temperatures up to 325°F / 163°C
- High measurement accuracy even at low flow rates
- Measurement independent of density, viscosity, pressure and temperature or the presence of suspended particulates and solids
- Paired with the Air Eliminator (AE) to remove air or gas entrapment in the product stream to achieve unparalleled accuracy
- Switch input for resetting the quantity-/volume counter (option)
- Automatic empty pipe detection avoids undefined readings for empty pipes
- PFA lining for maximum resistance to aggressive substances such as acids and bases
- Easy installation and start-up an minimal maintenance effort
- Automatic flow ranging and user-friendly parameterization
- 2-piece design provides optimal performance and longevity in hot, humid process environments
- Greater flexibility in the location and positioning of the operator display
- Protection for electronics from harsh operating environments
- Meets all USDA standards

Options/Accessories

- Converter RS232 to activate printer

Functional principle

The principle behind this measurement method is Faraday's law of induction. This law states that a voltage is induced in a conductor that moves in a magnetic field. In the magnetic-inductive measurement method, the flowing, conductive medium acts as the conductor. Two vertically positioned field coils generate a constant magnetic field. The voltage induced in the flowing medium is measured by two stainless steel electrodes that are arranged horizontally. The voltage is directly proportional to the flow rate and can be expressed as the flow volume using the nominal tube width. The determined measurement values are made available as a counting pulse and 4...20 mA standard signal.

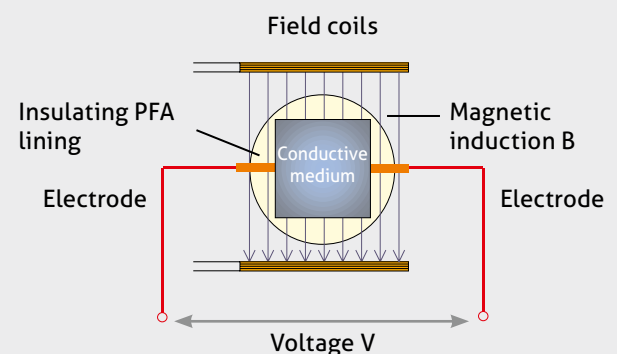
Communication

0/4...20 mA
 Hz
 0/1

IZM-Q flowmeter



Magnetic-inductive measurement



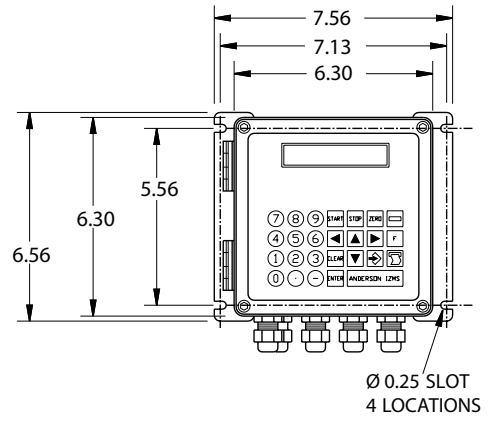
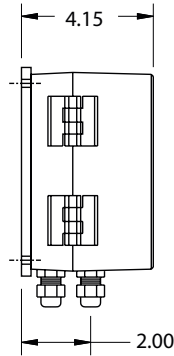
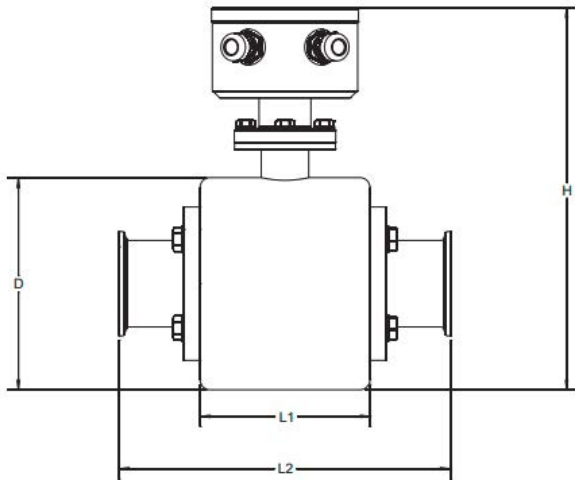
Specifications Flow tube		
Measurement flow tube	Measuring principle Measurement range Nominal width	Magnetic-inductive 0.88 gpm to 880 gpm 2", 2½", 3"
Process connection		Tri-Clamp®
Material	Seal Flow tube housing Flow tube lining Electrodes Connection box Transmitter housing Cable gland Wiring connection	EPDM, FDA number 21 CFR 177.2600 AISI 304 / 1.4301, blasted PFA, FDA number 21 CFR 177.1550 AISI 316L / 1.4404 AISI 304 / 1.4301 Cast aluminum (with special anti-corrosion paint) Brass galvanic nickel plated Water tight cord grip and 1/2" NPT NPT stainless steel conduit adapter sets supplied with each flow tube
Pipe connection		AISI 316L / 1.4404
Temperature ranges	Process, CIP/SIP cleaning	32...325 °F / 0...163 °C
Operating pressure	PN11	1.4...145 psi / 0.1...11 bar absolute, vacuum-tight (may be lower depending on the selected process adapter)
Protection class		IP 65
Product conductivity	Standard	> 5 µS/cm
Magnetic Field		DC pulsed with self-adapting adjustment

Flow Ranges

Connection Size	Total Operational Range gallons per minute [gpm]	Metering accuracy at rate [gpm]	
		< 1 %	< 0.25 %
2"	0.88...286	> 0.88	> 3.5
2½"	1.8...440	> 1.8	> 6.2
3"	2.6...880	> 2.6	> 10.8

Specifications Converter		
Electical connection	Power supply (field selectable by jumpers) Power consumption Fuse protection Entry Wiring Connections	115 V AC / 50...60 Hz / single phase 230 V AC / 50...60 Hz / single phase 10...30 V DC available 15 VA / 15 Watts 315 mA slow response, 5 x 20 mm Water tight cord grip and 1/2" female stainless steel NPT conduit adapter sets supplied with each converter
Measurement accuracy		see table "Flow ranges"
Scaled digital outputs	2 independent, scalable pulsed outputs Scaling factor	Open collector 30 V at 80 mA, Opto-isolated From 0.00001 to 10,000 pulses per volumetric unit
Output pulse (frequency and width)	Standard configuration Adjustable Fixed	1:1 pulse to pause ratio, 1 kHz max. 1...60,000 ms, 1 kHz max. 50 µs pulse width, 1 kHz max.
Output pulse config	Selectable	2 independent 2 channel by 90° shift 2 channel by 180° shift 3 channel by 120° shift 1 forward flow, 1 reverse flow
Output control signal	Selectable	Open collector 30 V at 80 mA forward flow / error signal
Analog output	Selectable Adjustable averaging Adjustable damping Load resistance	0/4...20 mA 0.1...10 sec 0...60 sec 500 Ω max.
Discrete inputs		Suspended operation - coil power supply off Remote reset internal totalizer with error reset Opto-isolated 10...30 V input from 3 kΩ internal resistor 1 ms min. pulse width with adjustable debounce
LED indicators		Pulse output 1, Pulse output 2, Forward flow, Error condition
Rezero feature	Pushbutton	for automatic hydraulic rezero of flow tube during field installation
Serial comm	RS485 serial interface	Control System Bus protocol, 57,600 Baud
Integral display (D option) and keypad		2-line, 20 digit alphanumeric backlit OLED display, 25 key membrane keypad
Interconnecting cable		25 ft. supplied as standard with factory prepared ends
Operating temperature		-4 °F...140 °F / -20 °C...60 °C
Converter construction		Cast aluminum with SGBL corrosionresistant coating
Sealing screws		The converter enclosure is supplied with two stainless steel screws, while the round terminal enclosure on top of the flow tube contains holes, for the installation of a sealing wire and seal for protection against alterations.

Dimensions and weight							
Model	Sanitary Connection Size	D	H	L1	L2		Approx. Weight [lbs]
					Standard	Option 1	
050	2"	5.08	9.53	7.01	9.88	13.25	19.8
065	2½"	5.08	9.53	7.01	13.25	13.25	25.3
080	3"	6.06	10.51	7.87	13.25	13.25	37.4



Note



All dimensions in inches unless otherwise stated.

Mechanical Connection / Installation



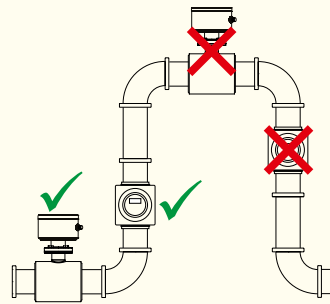
· For installation please check also the installation remarks mentioned in the product manual.

· **Correct installation:**

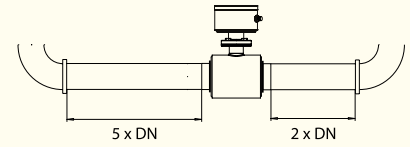
- Before or into an ascending pipe.

· **Wrong installation:**

- Before or into a descending pipe.
- Into the highest point of a pipe, air bubbles will concentrate there.



Flow direction of media →



Flow direction of media →

Notice on CE



- Applicable directives:
Electromagnetic Compatibility Directive 2014/30/EU
- Compliance with the applicable EU directives is identified by the CE label on the product.
- The operating company is responsible for complying with the guidelines applicable to the entire installation.

Disposal



- Electrical devices should not be disposed of with household trash. They must be recycled in accordance with national laws and regulations.
- Take the device directly to a specialized recycling company and do not use municipal collection points.

Cleaning/Maintenance



- When using a pressure washer, do not point the nozzle directly at the electrical connections.

Standards and guidelines



- Compliance with the applicable regulations and directives is mandatory.

Transport/Storage



- Do not store outside
- Store in an area that is dry and dust-free
- Do not expose to corrosive media
- Protect against solar radiation
- Avoid mechanical shock and vibration
- Storage temperature 0...55 °C / 32...131 °F
- Relative humidity max. 80 %

Reshipment



- Sensors and process connection must be clean and must not be contaminated with hazardous media and/or heat-conductive paste. Please note the cleaning notice!
- To avoid damage of the equipment, use suitable transport packaging only.

Note on 3-A Sanitary Standard 28-



Information on installation according to 3-A standard is available on our website:
www.anderson-negele.com/3A28.pdf

Click on the PDF icon to download the document.

Order code

IZM Electromagnetic flow meter

Converter type

S Standard converter
T With RS232 for printer

Q Fixed character

Flow tube

050 2"
065 2½"
080 3"

Display

0 No display (only with "S" converter)
D Display option

Operating power

0 24 V DC
1 110 V AC

Interconnect cable

0 25' cable
1 50' cable
2 75' cable
3 100' cable

1 Fixed character

Meter length

0 Standard
1 13¼"

Country

0 US
C Canada

IZM S Q/ 050/ 0/ 0/ 0/ 1/ 0/ 0