EMV-500™
Electromagnetic Velocity
Open Channel Flow Meter

EMV-500™ SIZE A

EMV-500™ SIZE B

The EMV-500™ is a water/wastewater electromagnetic velocity open channel flow meter sensor which is available in two sizes:
- SIZE A is suited for pipes or channels from 150 mm to 500 mm diameter
- SIZE B is suited for pipes or channels from 500 mm to 2,000 mm diameter.

The sensor is encapsulated in an IP68 submersible ultra high molecular polyethylene body to be mounted with a special sensor mounting band in the pipe.

When combined with the appropriate level sensor, the EMV-500™ constitutes an efficient electromagnetic area/velocity flow meter measuring both velocity and level in the same crosssection (or slice of pipe). This is a requirement necessary for accurate flow rate measurement using the continuity equation: \( Q = \bar{v} \times A \)

In addition, electromagnetic sensors are totally unaffected by the concentration of debris or dilution of wastewater by rain.

Technical Specifications

Velocity Measurement
Method: Electromagnetic (Faraday's Law)
Range: 0 to +2.5 m/s (other ranges available up to 10 m/s, must be specified at ordering time)
Accuracy: ±1% of measured value or ±0.03 m/s (whatever value is bigger)
Min. conductivity of the medium needed: 10pS/cm

Velocity Measurement Method
The principle of magnetic inductive flow measurements utilizes the Faraday's law, where a conductor moving in a magnetic field induces a voltage of amplitude proportional to the velocity of the conductor. The conductor is the media being measured.

Material & Dimensions
Material: Ultra High Molecular Polyethylene (PEUHM)
Stainless steel 316 electrodes
Protection rate: IP68
Dimensions:
- Size A: 165 mm L, 40 mm W, 25 mm H
- Size B: 190 mm L, 60 mm W, 45 mm H
Weight:
- Size A: 0.300 Kg (without cable)
- Size B: 0.750 Kg (without cable)

Operating Temperature Range and Pressure
0°C to 80°C (depending on pressure)
Max. pressure 4 bar (depending on temperature)

Sensor Cable
Material: Polyurethane jacketed
Length:
- 10 m (standard)
- 20 m, 30 m or length up to 100 m (optional)

Converter for EMV-500™ (included)
Operating temp.: -10°C to +50°C
Protection rate: IP66
Power supply: 18-36 VDC
Output: One 4-20 mA analog output for velocity (m/s) to be connected to a PLC or the UNITRANS™ for flow conversion
Max. impedance: 500 Ohm

Application fields
- Drinking water supplies
- Water treatment plants
- Cooling water control and monitoring
- Chemical and pharmaceutical plants
- Flow measurements in industry

Specifications are subject to change without notice
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