



# Electromagnetic Flowmeter

**HART**  
COMMUNICATION PROTOCOL



**NIVOMAG**  
MFI 960

**NIVOMAG**  
MFI 860

## Features

- Universal Power Supply
- Bi-directional Flow Measurement
- Built-in Totaliser
- Available with IoT Solutions
- Conforms to International Standards



# Electromagnetic Flowmeter

The electromagnetic flow meter accurately measures the flow rate of conducting liquids or slurries flowing in closed pipes. It is obstruction less and hence does not add pressure drop to the process. Absence of moving parts eliminates the need for maintenance. The performance of the instrument is not affected by the properties of the material such as corrosiveness, viscosity and density.

The instrument works on the principle of Faraday's law of Electromagnetic Induction. A magnetic field is generated by the instrument in the flow tube. The fluid flowing through this magnetic field generates a voltage that is proportional to the flow velocity. This voltage is measured by the electronics and a corresponding output provided.

### Universal Power supply

Accepts any voltage from 90 Vac to 265 Vac.

### Bi-directional Flow Measurement

Measures the flow in both forward and reverse directions.

### Built-in Totaliser

Provides a separate totalized volume value for flow in each direction.

### Available with IoT Solutions

Monitor & log data from anywhere & anytime.

### Conforms to International Standards

Designed to meet global requirements and available with international approvals.

## NIVOMAG MFI 960

## NIVOMAG MFI 860



### Technical Specifications

Line Size	: 10 NB to 600 NB
Mains supply	: 90 Vac to 265 Vac, 50/60 Hz
Option	: 18 Vdc to 30 Vdc
Outputs	: 4-20mA, Relay, Frequency, Pulse, RS 485, HART (optional)
Accuracy	: $\pm 0.5$ % of reading, optional 0.3%
Minimum Conductivity	: 5 $\mu$ s/cm
Lining Material	: PTFE, Rubber
Electrodes	: SS 316, Hastalloy 'C', Titanium, Monel and Pt-Rh
Process Temperature	: + 150° C max
Housing	: Cast Aluminium
Protection	: IP 67
Option	: IP 68 for sensor

## Product Range

A range of converters are available to suit the specific needs of the customer.

### MFI 960

Advanced SMART Microprocessor based instrument with high accuracy and offering complete flexibility at site with interchangeable electronics.

### MFI 860

A full featured, microcontroller based flow meter with programming capabilities offering the user greater flexibility in configuring the instrument to his needs.

Instruments with IP68 protection, remotely mounted electronics and Stainless Steel Construction for use in the water industry.

### Sanitary Version

Instruments with sanitary connections and complete Stainless Steel construction for use in hygienic applications in the Food, Beverage and Pharmaceutical Industries.

## Lining

The sensor liner and electrodes are available in various materials to ensure optimal suitability with different applications.

### PTFE Lining

Suitable for use in high temperature and corrosive applications.

### Rubber Lining

Suitable for use in water applications as well as in abrasive applications.

## Electrodes

### General applications

The standard electrode for general-purpose applications is SS316.

### Corrosive applications

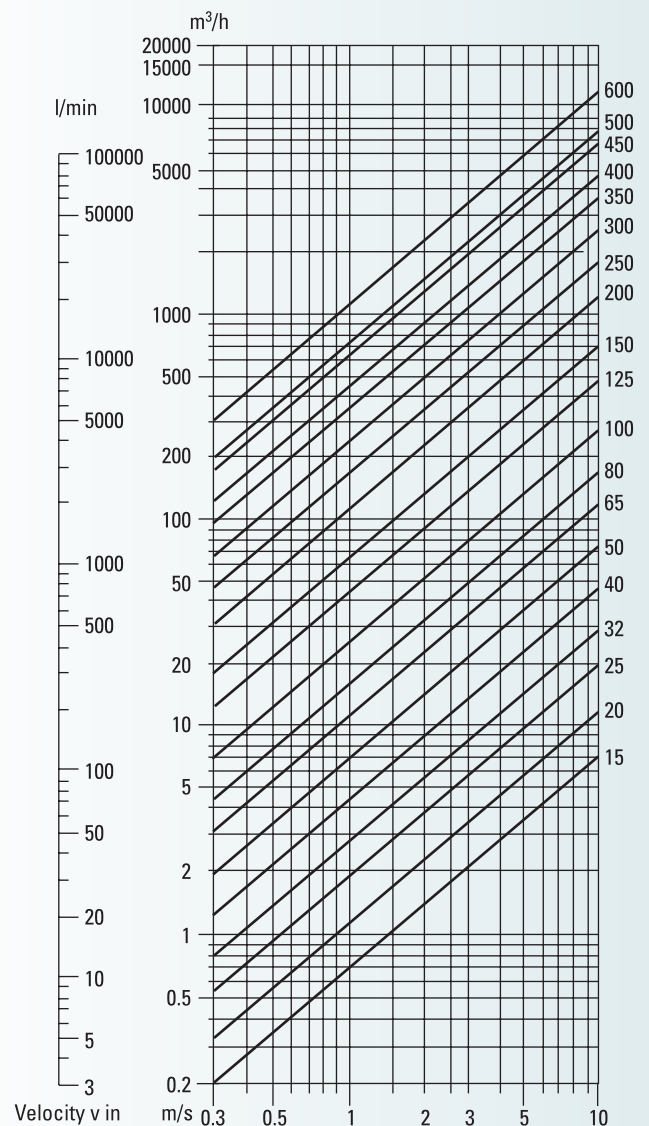
Depending on the corrosiveness of the fluid, the electrodes made of Monel, Titanium or Platinum-Rhodium can be provided.

## Salient Features

- Empty Pipe Detection.
- Low Flow Cut off
- Display in User Selectable units
- User Configurable relays (in-Built)
- Programmable Pulse on-time
- Diagnostic Messages
- Adjustable Damping
- Digital Output

## Flowmeter Size Selection

The flowmeter should be selected with the help of the Nomogram below



Nivo Electromagnetic Flowmeters provide trouble free sensing of

**Liquids**

- Potable Water
- Raw Water
- Chilled Water
- Beverages
- Juices

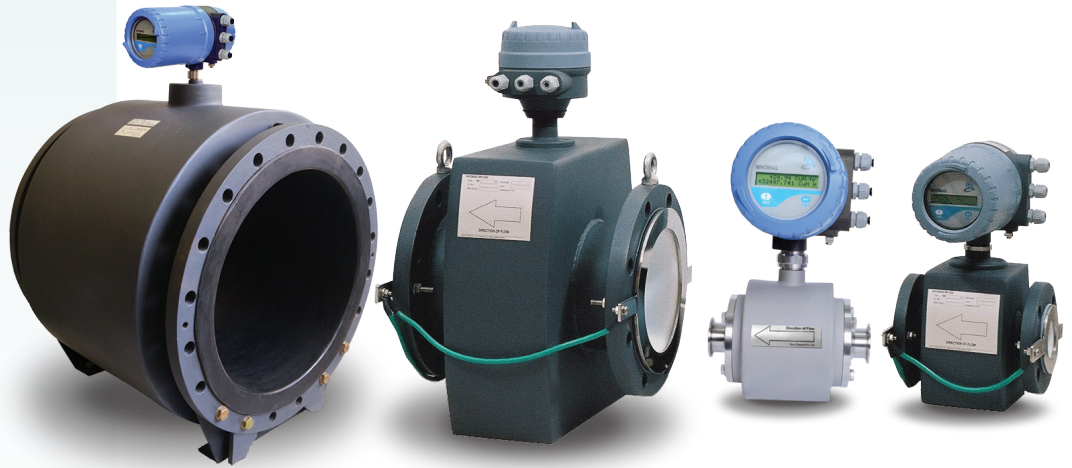
**Corrosive Liquids**

- Acids
- Alkalis
- Chemical Solutions

**Slurries & Pastes**

- Coal Slurry
- Sugar Syrup
- Effluents
- Sewage
- Molasses

and many more!



We reserve the right to modify the technical data without prior notice.



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