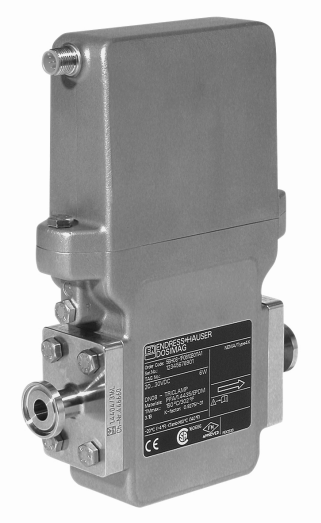
Level | Pressure | Flow | Temperature | Liquid Analysis | Registration | Systems Components | Services | Solutions

Technical Information

Dosimag

Electromagnetic Flow Measuring System
Volume flow measuring system for filling applications



Application
Electromagnetic flowmeter for measuring in filling applications.

- Flow up to 1.66 l/s
- Fluid temperature up to +130 °C
- Process pressures up to 16 bar
- CIP/SIP cleanable
- Stainless steel housing

All liquids with a conductivity of ≥5 µS/cm can be measured in the following sectors for example:
- Food industry
- Cosmetics industry
- Pharmaceuticals industry
- Chemicals industry

Approvals in the food industry/hygiene sector:
- 3-A approval, EHEDG-tested, in conformity with FDA

Application-specific lining material:
- PFA

Your benefits
Dosimag guarantees the highest level of accuracy and repeatability even for short measuring times. The compact housing shape means the units can be arranged very close together in filling plants.

The "Batchline" concept comprises additionally:
- Identical process connections enable an uncomplicated exchange between "Dosimag" and the Coriolis mass flowmeter "Dosimass"
- Uniform operating concept using the "ToF Tool - Fieldtool Package" operating software:
  - Graphic display of measured values for detailed trend analysis and optimization of the filling process
  - Complete plant documentation with device configuration and filling diagrams can be created

The Dosimag flowmeter offers:
- Simple installation and commissioning
- Insensitivity to pipe vibrations

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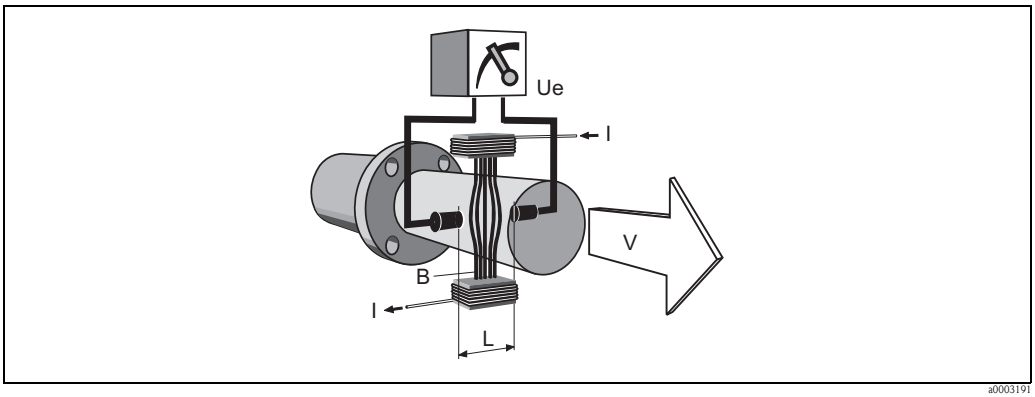
Function and system design

Measuring principle

In accordance with *Faraday's law of magnetic induction* a voltage is induced in a conductor which is moved through a magnetic field. In the electromagnetic measuring principle, the flowing medium corresponds to the moving conductor. The induced voltage is proportional to the flow velocity and is directed to the amplifier by means of two measuring electrodes. The flow volume is calculated from the pipe cross-sectional area. The DC magnetic field is generated by a switched direct current of alternating polarity.



$Ue = B \cdot L \cdot v$
$Q = A \cdot v$

Ue *Induced voltage*
B *Magnetic induction (magnetic field)*
L *Electrode spacing*
v *Flow velocity*
Q *Volume flow*
A *Pipe cross-section*
I *Intensity of current*

Measuring system

The measuring system is a compact unit consisting of a sensor and transmitter.

Input

Measured variable

Flow rate (proportional to induced voltage)

Measuring range

Typically v = 0.01 to 10 m/s with the specified measuring accuracy

Operable flow range

Over 1000:1

Output

Output signal

Pulse output:
Passive, open emitter, max. 30 V DC / 25 mA, galvanically isolated, pulse value and pulse polarity can be selected, adjustable pulse width (0.04 to 4 ms).

Signal on alarm

Pulse output → failsafe mode can be selected
Status output → transistor non-conductive in the event of a fault or if the power supply fails

Low flow cutoff

Switch-on point for low flow cutoff selectable.

Galvanic isolation

The circuits of the pulse/status output are galvanically isolated on the device side from the communication and power supply.

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