

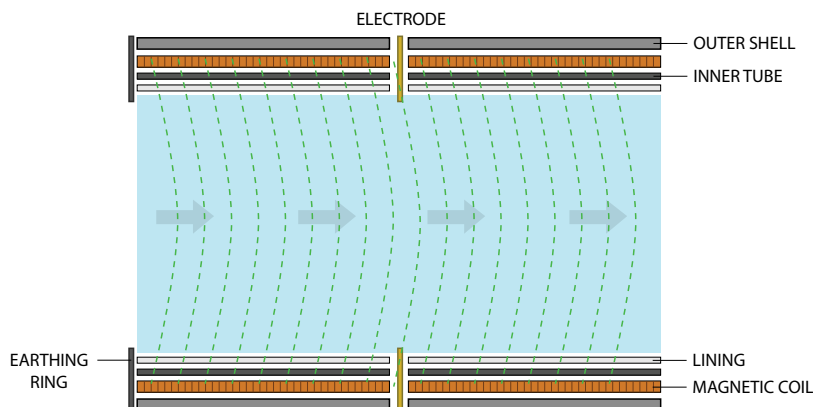
# Magnetic Flowmeters

Using Magnetic Flowmeters for Liquid Flow Measurement

## Method

According to Faradays Law, a voltage is induced whenever a conductor moves through an electromagnetic field.

By constructing a tube that contains magnetic coils, a non-conductive lining and two electrodes, you can accurately measure the flow of any conductive liquid by monitoring this induced voltage. Even better, it is done without any obstruction into the pipework at all.



## Advantages

- Very accurate
- Causes almost no pressure drop
- Ideal for applications with suspended solids or slurries, as there are no parts that extend into the flow path
- A wide variety of linings and electrode materials to be compatible with almost any process

## Disadvantages

- Unable to detect flow of non-conductive liquids such as fuels or oils
- Low-conductivity liquids may require the use of a capacitive flowmeter, which is significantly more expensive
- Costs increase considerably as pipe size increases

## Features and Options

To be compatible with the widest range of applications, there is a choice of material when it comes to lining, electrode and earthing ring.

For acids use, tantallum or titanium electrodes are available, alongside PTFE (Teflon) linings.

If you have large solids in your liquid that could destroy your lining through abrasion, some manufacturers have ceramic linings that are able to withstand most aggressive chemicals and a significant amount of abrasion.

A number of different outputs are available - most meters offer a standard analogue (ie 4-20mA) signal, as well as a pulse signal if you wish to count or totalise the flow during a batch.

Many units are also capable of counting and displaying the total amount of liquid on the display.

Remote versions (where the electronics are separate from the actual flow sensor) are also available.

