



## PROCESSAUTOMATIC MAGNETIC FLOWMETER



# PROCESSAUTOMATIC

Quality And Accuracy In Flowmetering

The **PROCESSAUTOMATIC** magnetic flowmeter is suitable for most hygienic applications as all wetted parts are made of food grade stainless steel or teflon and most commonly used chemical solutions are acceptable during in-line cleaning.



## PRINCIPLE OF OPERATION

The principle of operation is based on Faraday's law of electromagnetic induction.

A highly accurate bipolar pulse circuitry energises two coils, which in turn create a magnetic field perpendicular to the metering pipe.

A conductive liquid flowing through the metering pipe induces an electrical voltage which is measured by two electrodes.

This voltage is proportional to the velocity and therefore a measure of the volumetric flow.

## THE PROGRAMMER

The optional Programmer can be used with all **PROCESSAUTOMATIC** magnetic flowmeters to access and modify the parameters governing the various functions.

Parameters which can be accessed include the internal calibration and signal output configurations. It also permits simulation of flow.

Each flowmeter is despatched from the factory already calibrated and with outputs set to the ordered specifications, making the Programmer useful where modifications are required.



The **PROCESSAUTOMATIC** magnetic flowmeter provides a reliable and economical method of accurately measuring electrically conductive liquid products such as water, milk, cream, whey, juice, slurries, wine, beer or liquid sugar.

## CONSTRUCTION

The magnetic flowmeter is made up of two parts, the meterhead and the electronics module.

The meterhead comprises a stainless steel metering pipe with a teflon liner and two electrodes.

A terminal board is located inside the black terminalbox fitted to the metering pipe.

The electronics module connects directly to the meterhead and holds the microprocessor-based electronics. All electronics modules are universal and can be used with any **PROCESSAUTOMATIC** magnetic flowmeter without the need for recalibration or adjustment.

## ADVANTAGES

- No moving parts.
- Excellent suitability for hygienic applications.
- Direct pulse and current output.
- Additional pulse output or bidirectional flow indication.
- Simulation of flow with the programmer simplifies installation procedures.
- Universal electronics module interchangeable between flowmeters without any need for reprogramming.
- Compact and lightweight design.



*Terminal board*



*Clamp set*

## SIGNAL OUTPUTS

The magnetic flowmeter provides four different outputs.

The pulse output provides a measure of the volume passing through the flowmeter. Each pulse represents a pre-set quantity, eg. one litre.

The current output which can be set 0-20 mA or 4-20 mA is directly proportional to the volumetric flowrate.

The multifunctional output offers a choice of a second pulse output or an indication of the flowdirection.

The voltage output can be used to drive the other outputs or external circuits.

## INSTALLATION

The magnetic flowmeter can be installed at any angle.

For best results, straight pipe sections with a length of ten times the diameter should be installed immediately before and after the flowmeter.

The inner diameter of these pipe sections should correspond to that of the magnetic flowmeter.

The magnetic flowmeter is attached to the connecting pipework by using the optional mating clampset.

It is also recommended that, where possible, the metering pipe is full of liquid at all times.

## TECHNICAL SPECIFICATIONS

■ Linearity	+/- 0.25% of reading within 10:1 range
■ Repeatability	0.1% within 10:1 range
■ Supply Voltage	24 Volts AC or DC +/- 10%
■ Pulse Output	Open collector, max 2 kHz
■ Current Output	4-20 mA or 0-20 mA Current sink, max load 1 kOhm
■ Multifunctional Output	Open collector, max 25 Hz Second pulse output or bidirectional flow indication
■ Voltage Output	19-32 Volts DC, max 50 mA
■ Response Time	Max 160 ms
■ Temperature	Ambient : 0 to +50 Degrees C Line : -30 to +100 Degrees C
■ Line Pressure	Max 10 Bar
■ Pressure Drop	Approx 0.2 Bar at max specified flow
■ Protection	Equal to IP65
■ Weight	2-5 kg depending on size
■ End Connections	Triclover ends ISO 2852
■ Power Consumption	6 Watts
■ Materials	Electrodes : Stainless steel 2343 Housing : Stainless steel 2333 End Connections : Stainless steel 2333 Terminal Box : Grilamid Liner Material : Teflon

## ORDERING INFORMATION

### Magnetic Flowmeter

#### Eg. MODEL 51/1-50-4/35,000-P/5

##### PULSE OUTPUT

50 Pulses per litre

##### CURRENT OUTPUT

0 = 0-20 mA

4 = 4-20 mA

20 mA = 35,000 Litres/hour

##### MULTIFUNCTIONAL OUTPUT

P/5 = Pulse output with 5 pulses per litre

B = Bidirectional flow indication

### Optional Equipment

#### Eg. PROGRAMMER

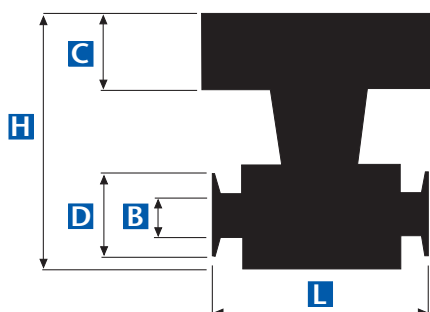
One type fits all flowmeters

#### Eg. CLAMP SET 51/1

##### SIZE

One clampset includes;  
2 Welding clamp ferrules  
2 Clamp rings  
2 Clamp gaskets

## SIZES & FLOWRANGES



TYPE	DIMENSIONS (mm)					MAXIMUM FLOW (Litres per hour)
	L	B	C	D	H	
MODEL 25/1	80	25	56	51	172	(Standard range) 8,000
MODEL 51/1	120	51	56	64	197	40,000
MODEL 75/1	196	75	56	91	226	90,000

Distributed by:

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