

FEATURES:

- Very compact, light weight design.
- Sizes 15mm (1/2"), 20mm (3/4") & 25mm (1").
- High resolution Pulse output signal.
- 1000 PPL (15mm), 500 PPL (20mm), 100 PPL (25mm size).
- Full scale Accuracy $\pm 1.5\%$, $\pm 0.3\%$ of rate, 1% repeatability.
- PEEK sensor tube, Stainless Steel 316 electrodes
- BSP (M) threaded end connections.
- Electrical connection via M12 Plug and socket set.
- Virtually maintenance free, with no moving parts.
- Measures liquids with conductivity $> 50\mu\text{S/cm}$.
- Process temperature to 90°C , pressure to 1600 kPa.
- Accuracy is unaffected by varying viscosity or specific gravity of liquids.
- No moving parts, nothing to block.



INTRODUCTION:

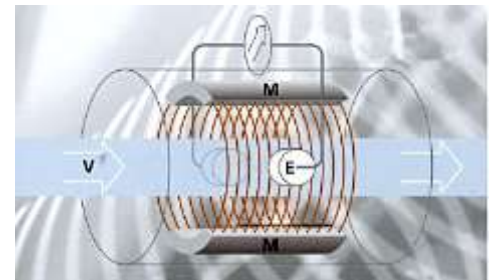
The CMM Mini-Mag is a low-cost compact Electromagnetic Flowmeter, suitable for industrial applications for flowrate and totaliser liquid metering and batching.

Liquids with an electrical conductivity of at least $50\mu\text{S/cm}$ can be measured. The converter/processor is inbuilt on the flowmeter sensor primary. These two elements form a very compact package.

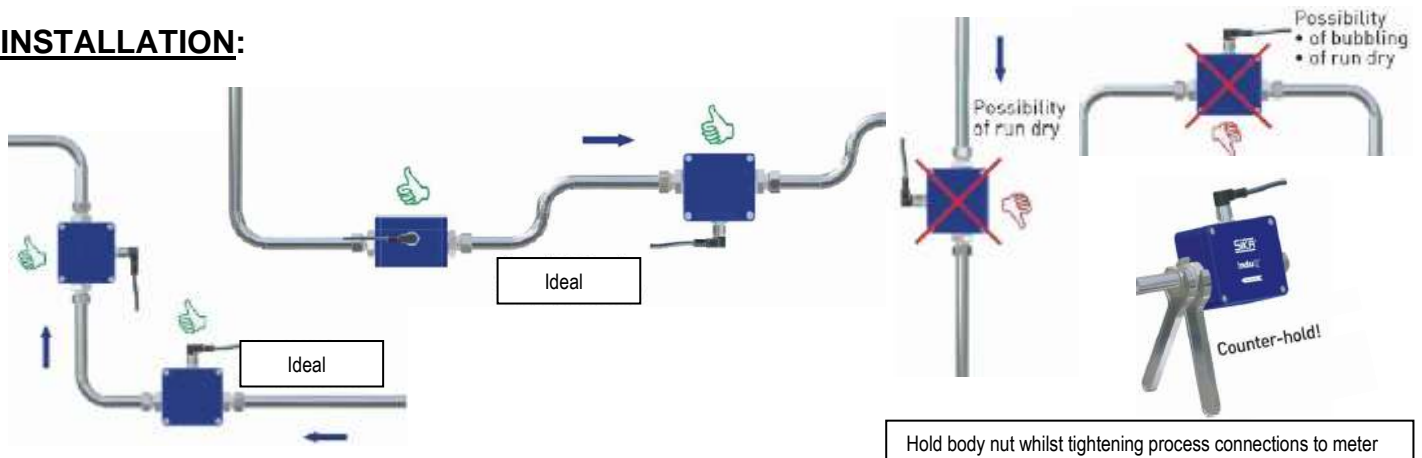
With no moving parts and an obstruction-free bore, this type of flowmeter is ideal for measuring a wide range of conductive liquids (that are chemically aggressive, or dirty) up to a temperature of 90°C , with minimal head losses and virtually no ongoing maintenance. CMM Mini-Mag is ideal for measurement of recycle water or water based liquids including admixtures with impurities, providing flowrate or total display for shotcrete and for process batching/monitoring applications. The MiniMag can be used in conjunction with a remote ManuFlo FRT-303 Indicator, ME4-T reset counter, ME-series Batch Controllers, ME2008 batch interface cards, UIC scaler cards or can be connected to 3rd party PLCs via the onboard pulse output.

PRINCIPLE OF OPERATION:

The operation of electromagnetic flow meters is based on Faraday's Law of Induction. A voltage is induced in a conductor as it moves through a magnetic field. This principle is applied in the Mini-Mag design. The voltage induced in the flowing liquid is measured at two electrodes, and is proportional to the average flow velocity. The microprocessor then scales this signal voltage to read in digital units.

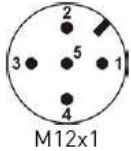


INSTALLATION:



ELECTRICAL CONNECTIONS: (Via M12 5-pin screwed socket and 3mtr plug lead connector)

Pinout:



Possible pinout:
 Pin 1: **+ Supply Voltage**
 Pin 2: d. n. c. (do not connect)
 Pin 3: **GND**
 Pin 4: Frequency
 Pin 5: **PULSE**

Pin No.	Cable Colour
1	Brown
2	White
3	Blue
4	Black
5	Neutral

+24VDC
Ground (o.v.)
Pulse



SPECIFICATIONS:

Accuracy (of range):	+/- 1.5%	Accuracy (of reading):	± 0.3%
Repeatability:	1 %	Response Time:	<500 mS
Supply Power:	24 VDC (± 10%) @<150mA	Plug connector:	M12 x 1 plug and socket set (5pin)
Liquid Temp.:	-20 °C to 90 °C	Ambient Temperature	-10 °C to 70 °C
Max. Pressure:	1600 kPa	Ingress Rating	IP65 (IP67 with M12 plug)
Flow Indication:	LED proportional Flashing	Flow Direction:	Forward (arrow label)

MATERIALS OF CONSTRUCTION (All models):

Housing:	Cast Aluminum
Electrodes:	Stainless steel 1.4571
Process connections:	Stainless steel 1.4571
Measuring tube:	PEEK-GF30
O-rings:	EPDM (FKM Optional)

VARIOUS MODELS:

Order Code:	CMM15	CMM20	CMM25
Connection Size:	15mm	20mm	25mm
Actual Bore Size:	7mm	10mm	20mm
Thread G BSP M	G½" ISO 228 M	G¾" ISO 228 M	G1" ISO 228 M
Order Code: Barrel-Union connectors Bsp-f	SBU15	SBU20	SBU25
Flow Range (Litres/minute)	0.5 - 30	1 - 60	5 - 250
Signal output starts (Litres/minute):	0.4	0.9	4
Pulse output (Pulses/Litre)	1000	500	100
Pulse Signal shape:	Square wave, pulse duty ratio 50:50, Push-Pull		
Signal current:	< 100mA, current limited		

