

# *Electromagnetic*

## INSERT FLOW SENSOR



The MACE Electromagnetic Insert flow sensor is a heavy duty, high performance sensor in an adjustable insertion configuration. This insertion style flow sensor has no moving parts and is constructed of corrosion-resistant materials to provide long-term reliability with minimal maintenance costs.

The MACE Electromagnetic Insert flow sensor is versatile and simple-to-install, delivering reliable flow measurement over a wide dynamic range in pipe sizes ranging from DN40 to DN1200.

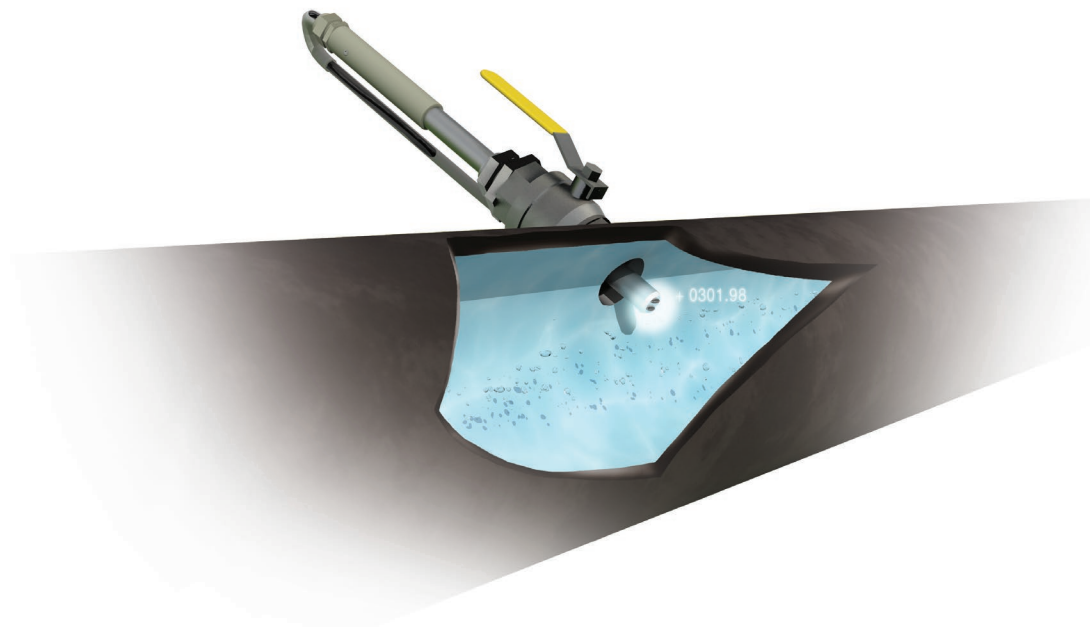
The empty pipe detection features a zero flow output when the electrodes are not completely wetted.

### Features

- Continuously powered when installed in a MACE XCi device
- Patented Magmeter technology (U.S. Patent No.: 7,055,396 B1)
- Submersible up to 10 ft
- Frequency output
- Bi-directional flow measurement
- No moving sensor parts
- Adjustable insertion for large pipe sizes up to DN 1200
- Empty pipe detection
- Flow rate range 0.15 ft/s to 33 ft/s

### Applications

- Irrigation water metering
- Bore water metering
- Potable water metering
- Groundwater metering



# Insert Magmeter Specifications



## Wetted Materials

- Sensor shaft & electrodes: 316L Stainless Steel
- Insulator: PVDF
- O-rings: FPM (standard)
- Cable: 25ft, 4-cond, Rubber cable assembly

## Power Requirements

- Supply: 4.5 to 26.4 VDC, 15 mA maximum
- Protection: Reverse polarity and short circuit protected

## Performance

- Pipe size range: DN40 to DN1200
- Flow Range: Minimum: 0.15 ft/s  
Maximum: 33 ft/s
- Linearity:  $\pm 1\%$  reading + 0.033 ft/s
- Repeatability:  $\pm 0.5\%$  of reading @ 77 °F
- Minimum Conductivity: 20  $\mu\text{S/cm}$

## Electrical

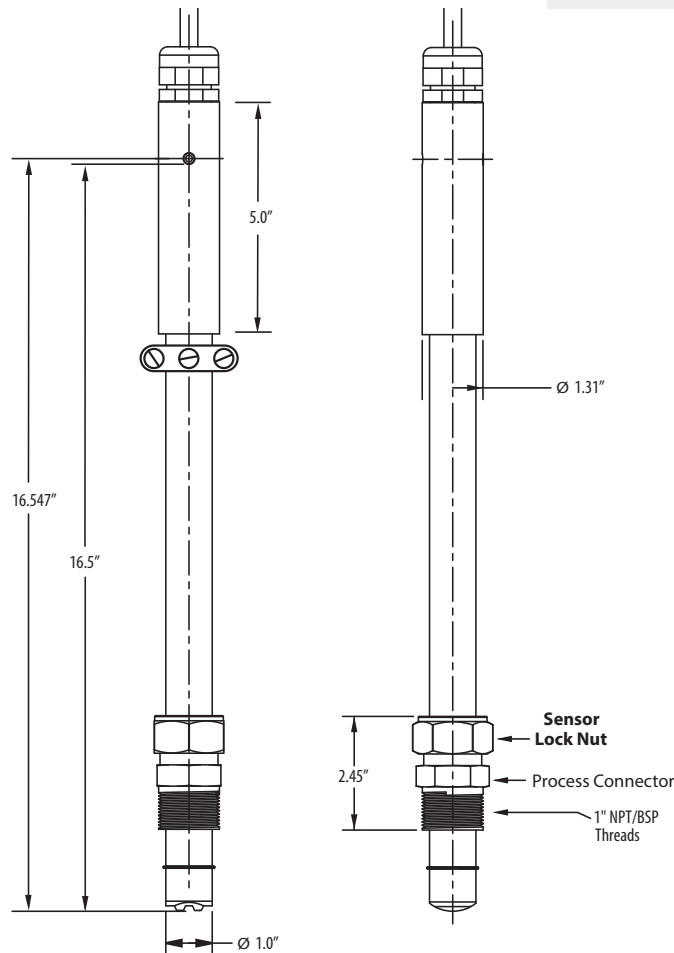
- Compatibility: MACE Pulse I/O Card
- Frequency Range: 0 to 1000 Hz
- Max. Pull-up Voltage: 30 VDC
- Short Circuit Protected: < 30 V @ 0 $\Omega$  pull-up for one hour
- Protection: Reverse Polarity Protected to -40 V for 1 hour  
Overvoltage Protected to +40 V for 1 hour
- Max. Current Sink: 50 mA, current limited
- Max. cable: 1000 ft

## Max. Temperature/Pressure Rating

- Storage Temperature: 5 °F to 158 °F in non-icing conditions
- Operating Temperature: Ambient: 5 °F to 158 °F in non-icing conditions  
Media: 5 °F to 185 °F
- Max. Operating Pressure: 300 psi @ 77 °F

## Standards and Approvals

- CE
- EN 61326: Immunity and Emissions for Control Equipment
- Testing: Individually tested on NIST traceable flow meter



**Note to end users:** These specifications are subject to change at any time without notice. MACE takes no responsibility for the use of these figures. Please consult MACE for the latest specifications before using them in contract submittals or third party quotes etc. MACE reserves the right to change specifications without prior warning. All quoted figures are based on test conditions and are subject to variation due to site conditions.