HVFlo®

Intrinsically Safe Logging Flow Meter

HVFlo is a high performance battery operated open channel flow monitoring solution for wastewater, stormwater and industrial discharge applications.

HVFlo features MACE field proven Doppler velocity and level measurement sensors. Advanced spectrum signal processing allows **HVFlo** to produce superior results under a very wide range of hydraulic operating conditions. Even under full pipe, surcharge, or reverse flow conditions, **HVFlo** will produce accurate, repeatable results every time.

HVFlo offers optional telemetry interface for long-term monitoring applications. Communication is made possible by using PSTN or GSM allowing remote diagnostics and data downloads.

Applications include:

- **Inflow & Infiltration Studies**
- **Combined Sewer Overflow Studies**
- **Pump Station Monitoring**
- **Long & Short Term Sewer Flow Monitoring**
- **Sewer System Capacity Analysis**
- **Storm Water Monitoring**
- **Industrial Monitoring**
- **Quantifying Rehabilitation Effectiveness**
- **Billing Networks**

mace
The force in flow.

HVFlo Specifications

GENERAL

Unit Dimensions (approx)	170 mm Outside Diameter x 460 mm high
Sensor Dimensions	Combined Depth/Velocity sensor 125 mm long x 50 mm wide x 16 mm high
Weight (approx)	6Kg
Enclosure Rating	IP68 to 3 metres
Intrinsical Safety	Ex ia IIA T6 IP-68 class 1 zone 0 to SAA standards
Enclosure Material	Medium density polyethylene (MDPE)
Operating temperature	-5 to +50 degrees Celsius
Storage Memory	Battery backed NVRAM
Data Storage	Over 120 days data logging (or 14,000 readings) -3 parameters at 15 minute intervals.
Logging Interval	User configurable - 15 seconds to 6 hours
Units of Measure	User definable (in metric units)
Power Source	Rechargeable Battery Field replaceable, Intrinsically safe, 6VDC 10Ah Sealed Lead Acid battery pack.
Battery Discharge Cycle	Using MACE combined depth & velocity sensor 150 days typical at 15 minute logging.
Application Software	PC software for system configuration and velocity profile testing is included in the package.
Factory Backup	HVFlo is backed by a 12 month parts and labour guarantee

PORTS

PC communications port:
A cable from the MACE Communications Barrier plugs into this port of the HVFlo. The MACE communications barrier is sold as a separate item and forms the interface between the HVFlo (in the 'hazardous' area) and the PC (in the 'safe' area).

Primary sensor port:
The MACE combined depth & velocity sensor plugs into this port.

Secondary sensor port:
This port can be used to input a frequency between zero and 16383 Hz (e.g from a MACE surcharge sensor or third party depth sensor). Note: Adding a third party sensor will void the 'Intrinsic Safety' status.

Auxiliary interface port:
This port can be used to do the following:

1. Output a 4-20mA signal or a pulse every time the total flow exceeds a user-configurable limit. (Note: A MACE 'Barrier' must be purchased as a separate item to form the interface between the HVFlo (in the 'hazardous area') and the sampler (in the 'safe' area).

2. Serve as a second serial port.

VELOCITY MEASUREMENT

Method	Submerged Ultrasonic Doppler
Range	±0.025 m/sec to ± 4.0 m/sec (±8.0 m/sec optional)
Resolution	1 mm/sec
Accuracy	± 1% up to 3.0 m/sec ± 1.5% at velocities greater than 3.0m/sec.

DEPTH MEASUREMENT

Method	Ceramic pressure transducer with large flat sensing diaphragm which allows straight, undeflected flow over the sensing area to reduce drawdown effects at high stream velocities and providing self cleaning with an impervious Alumina ceramic surface. Optional upward looking ultrasonic sensor can be provided.
Full scale range	2 or 4 metres above the transducer face Depending on client needs
Accuracy	0.2% of full scale at constant temperature in a static stream. 1% of full scale over a stream temperature range 5 to 55 degrees centigrade.
Resolution	1 mm
Over-range	60 metres without damage

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