

# HVFlo

## XCi



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

### Portable Waterproof Logging Flow Meter

HVFlo XCi features MACE Doppler ultrasonic velocity sensors using MACE Advanced Signal Processing (MASP) technology that “see” across the entire stream profile to give a true average velocity. MASP allows HVFlo XCi to produce superior results under a very wide range of hydraulic operating conditions. Even under full pipe, surcharge, or reverse flow conditions, HVFlo XCi will produce accurate, repeatable results every time.

A MACE Webcomm card can be installed to give remote access to your data via GSM/4G cellular networks. Access data through the free Webcomm Server for simple data viewing and remote configuration. Or use HydroVu data services for advanced visualization and APIs for data export to any platform. SMS/email alerts available.

#### Benefits

- The HVFlo XCi operates under a very wide range of hydraulic conditions, and will produce accurate, repeatable results even under full pipe, surcharge or reverse flow conditions
- Lightweight for easy handling
- Rechargeable battery offers long-life without costly new batteries
- Excellent data storage, typically 2 years @ 5 minute logging
- Typically 180 day battery discharge cycle @ 5 minute logging
- IP68

#### Applications

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



## HVFlo XCi Specifications



### GENERAL

Weight	Approx. 5 kg (11 lbs)
Dimensions	365 mm (H) x 260 mm (W) x 170 mm (D) 14.4 in. (H) x 10.2 in. (W) x 6.7 in. (D)
Enclosure rating	IP68
Enclosure material	UV stabilized polycarbonate - vented to atmosphere
Operating temperature (with internal battery installed)	-15 to +50° C (5 to 122° F)
Operating temperature (with internal battery removed and external power used)	-20 to +65° C (-4 to 150° F)
Program memory	2 Mb flash (sufficient for 600,000 discrete readings)
Data storage	Typically 2 years data logging - 3 parameters @ 5 min
Power source	Internal 12Volt 7.2Ah battery
Power usage	Typically 180 days at 5 minute intervals with daily data upload via MACE Webcomm
Units of measure	User definable (metric/US)
Application software	FloCom+ PC software for system configuration, data downloading and velocity profile testing. Minimum system requirements - Windows® XP
Remote communications	MACE Webcomm card via GSM/4G cell networks
Factory backup	24 months - parts and labour guarantee

### 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 provides for self cleaning with an impervious Alumina ceramic surface.
Full scale range	4 m (13 ft.) above the transducer face
Accuracy	0.2% of full scale at constant temperature in a static stream. 1% of full scale over a stream 5 to 55° C (41 to 130° F)
Resolution	1 mm (0.04 in.)
Overrange	60 m (200 ft.) without damage
Min. operating depth	20 mm (0.79 in.)

### VELOCITY MEASUREMENT

Method	Submerged Ultrasonic Doppler
Range	±0.025 to ± 8.0 m/s (±0.08 to ± 26 ft/s)
Resolution	1 mm at 1.0 m/s (0.04 in. at 3.3 ft/s)
Accuracy	±1% up to 3.0 m/s (±1% up to 10ft/s)
Urethane sensor cable	9 mm (D) up to 50 m (L) (0.35 in. (D) up to 164 ft. (L))
Min. operating depth	40 mm (1.57 in.)
Max. operating temperature	60° C (140° F)

### DOPPLER AREA/VELOCITY SENSOR



**ZX SnapStrap mounted, combined velocity and depth sensor for use in partially full pipes or open channels**

Pipe size	0.15 to 2.54 m (6 in. to 100 in.) diameter
Max. channel width *	3 m (10 ft.)
Dimensions	125 mm (L) x 50 mm (W) x 20 mm (H) 5 in. (L) x 2 in. (W) x 0.79 in. (H)
Wetted materials	PVC, Alumina ceramic and epoxy
Pipe intrusion area	8.6 cm <sup>2</sup> (1.33 in <sup>2</sup> )

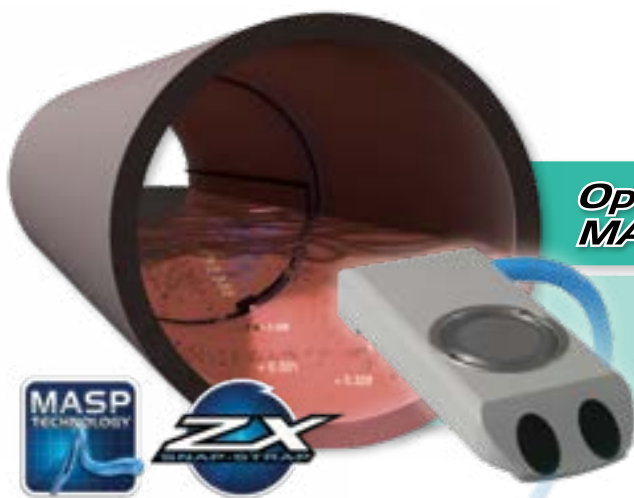


### DOPPLER VELOCITY SENSOR

**ZX SnapStrap mounted, velocity sensor for use in full pipes or open channels (when used in conjunction with a depth sensor)**

Pipe size	0.15 to 2.54 m (6 in. to 100 in.) diameter
Max. channel width *	3 m (10 ft.)
Dimensions	125 mm (L) x 50 mm (W) x 17 mm (H) 5 in. (L) x 2 in. (W) x 0.67 in. (H)
Wetted materials	PVC and epoxy
Pipe intrusion area	8 cm <sup>2</sup> (1.24 in <sup>2</sup> )

\* MACE Doppler ultrasonic sensors **will** operate in wider channels, but a reliable stream gauging **must** be performed for best system accuracy.



## Open channel flow measurement MACE Area/Velocity Sensor

- ✓ Doppler ultrasonic area/velocity sensor with MASP technology
- ✓ Easy to install in existing pipe work with a MACE ZX SnapStrap
- ✓ Operates in regular and irregular cross-sections
- ✓ Reliable under difficult hydraulic conditions
- ✓ Replaceable ceramic diaphragm depth sensors

**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.