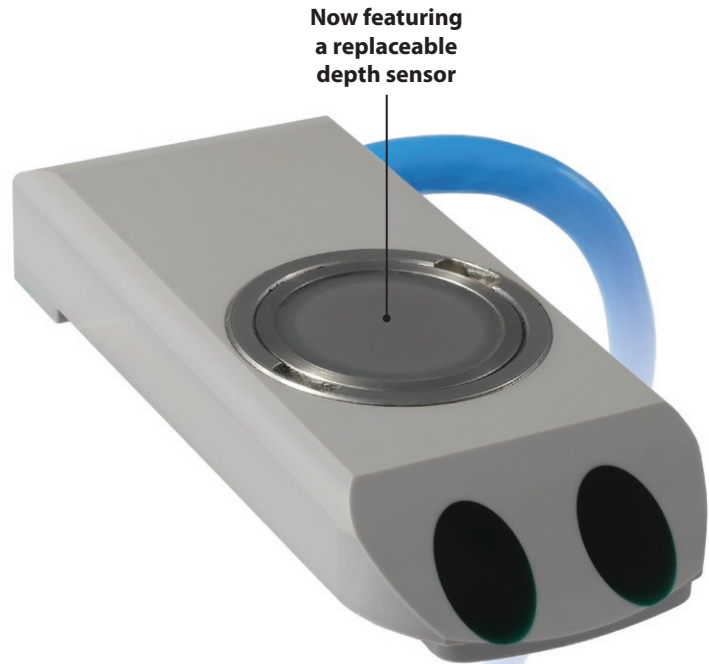


Doppler Ultrasonic Area/Velocity Sensor

MACE Area/Velocity sensors are used in open channels or pipes that run partially full.

These sensors simultaneously measure both depth and velocity without the need to install weirs or flumes and without the need for time-consuming and costly flow profiling.

- ✓ 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 sensor



Easy maintenance

Due to the presence of gravel and debris in channels, the depth sensor component of all area/velocity sensors can be physically damaged by impact forces.

To reduce maintenance costs and downtime, MACE have developed a replaceable ceramic depth module. This eliminates the need to change the entire area/velocity sensor. Simply remove the old module and install a new one.

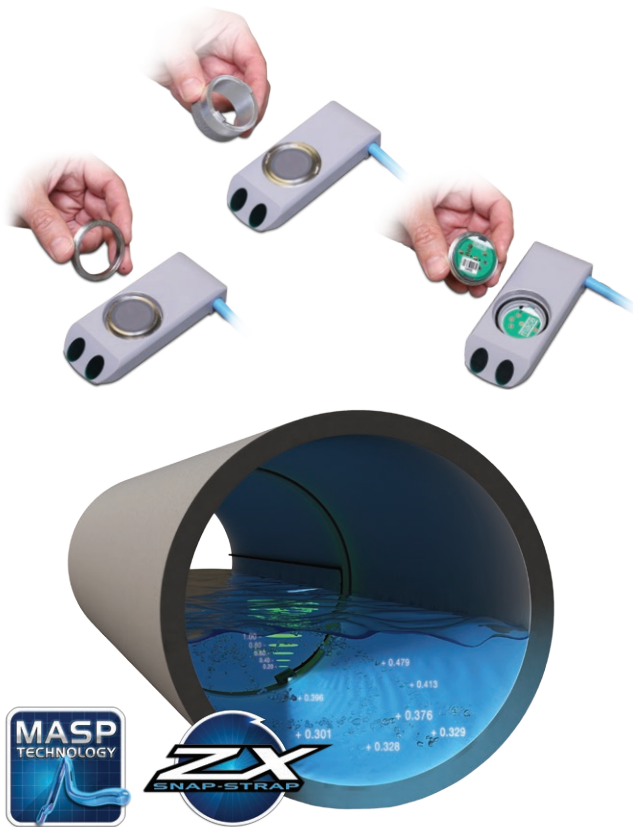
Installation

Use a MACE ZX SnapStrap to install this sensor inside a pipe in minutes. The polycarbonate ZX Snapstrap is tough, secure, does not foul and can be easily removed to take the sensor to another site.

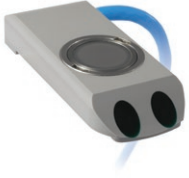
True average velocity measurement with MASP Technology

MACE velocity sensors use continuous wave Doppler ultrasound to measure the speed of dirt, bubbles and other particles in the stream flow.

MACE Doppler ultrasonic velocity sensors utilizing MACE Advanced Signal Processing (MASP) technology "see" across the entire stream profile to give a true average velocity.



Doppler Ultrasonic Area/Velocity Sensor Specifications



COMPATIBILITY:

The Doppler ultrasonic area/velocity sensor is compatible with:

- MACE AgriFlo XCi (Requires a Doppler card)
- MACE FloPro XCi (Requires a Doppler card)
- MACE HVFlo XCi (includes factory installed Doppler card)

TECHNICAL SPECIFICATIONS:

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 cm² (1.33 in²)

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

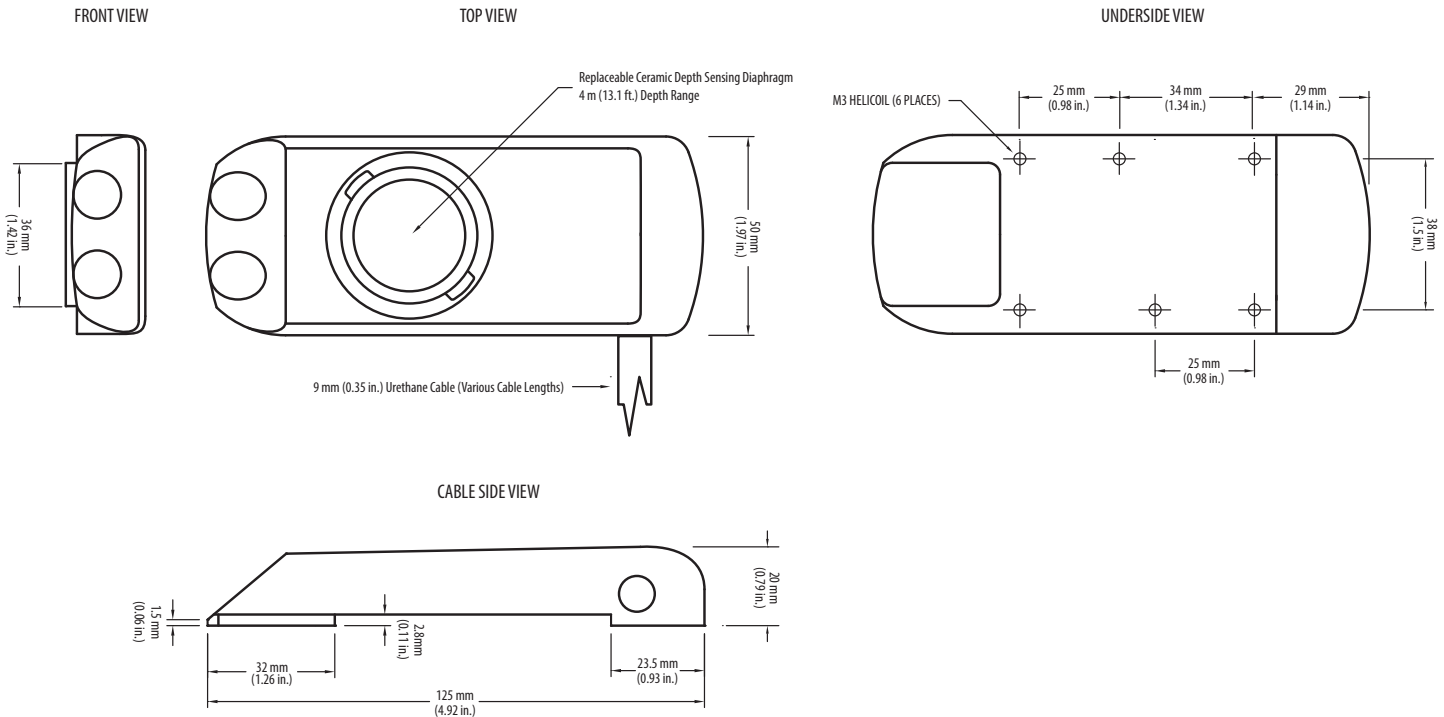
VELOCITY MEASUREMENT:

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 10 ft/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)

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.)

DIMENSIONAL DRAWING:



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.