

AgriFlo Xci Specifications



GENERAL

Weight	Approx. 5kg (11lbs)
Dimensions	36.5cm (H) x 26cm (W) x 17cm (D) 14.4" (H) x 10.2" (W) x 6.7" (D)
Enclosure rating	IP66
Enclosure material	UV stabilized polycarbonate
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)
Backlit display	16 character x 2 line alphanumeric LCD
Program memory	2 Mb flash (sufficient for 600,000 discrete readings)
Power	Internal 12Volt 7.2Ah battery with external solar panel or mains charger
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
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	4m (13ft) 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	1mm (0.04")
Overrange	60m (200ft) without damage
Min. operating depth	17mm (0.67")

VELOCITY MEASUREMENT

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

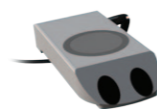
DOPPLER INSERT VELOCITY SENSOR

For use in full pipes or partially full pipes (when used in conjunction with an EchoFlo depth sensor)

Patents	US Patent No. D544,803 AUS Patent No. AU 301464 S
Pipe size	0.1 to 2.54m (4" to 100") diameter
Process fitting	2" BSP or 2" NPT
Max. process fitting pressure ¹	1034 kPa (150psi)
Max. operating pressure ²	253kPa (37psi)
Shaft dimensions	33cm (L) x 2cm (D) 13" (L) x 0.8" (D)
Head dimensions	4.5cm (D) x 2.5cm (H) 1.8" (D) x 1" (H)
Wetted materials	Nickel plated brass and epoxy
Pipe intrusion area	11.25cm ² (1.75 sq.")

¹ The pipe **must be de-pressurized** prior to insertion or removal

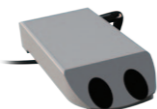
² The stream flow may be suitable for Doppler ultrasonic flow measurement in pressures >253kPa (37psi) if it contains **at least 100 parts per million** of suspended solids that are >75 microns in size.



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 2.54m (6" to 100") diameter
Max. channel width *	3m (10ft.)
Dimensions	12.5cm (L) x 5cm (W) x 1.6cm (H) 5" (L) x 2" (W) x 0.63" (H)
Wetted materials	PVC, Alumina ceramic and epoxy
Pipe intrusion area	8cm ² (1.25 sq.")



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 2.54m (6" to 100") diameter
Max. channel width *	3m (10ft.)
Dimensions	12.5cm (L) x 5cm (W) x 1.6cm (H) 5" (L) x 2" (W) x 0.63" (H)
Wetted materials	PVC and epoxy
Pipe intrusion area	8cm ² (1.25 sq.")

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

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.

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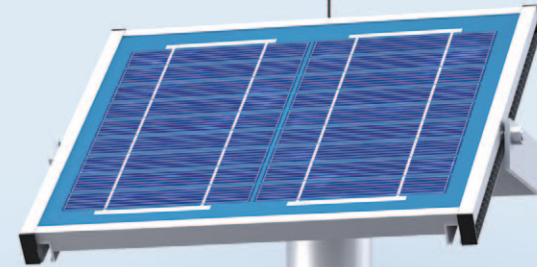
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Water Monitoring Solutions

AgriFlo[®]

SMART PACKAGED MONITORING

Xci



Measure agricultural water and wastewater flows plus monitor vital farm operations



**Full pipe flow measurement
MACE Insert Velocity Sensor**

- ✓ Patented Doppler ultrasonic insert sensor with MASP Technology
- ✓ Easy to install in existing pipework through a 2" ball valve
- ✓ Works great in dirty water and animal waste
- ✓ No moving parts, no blockages, no worries
- ✓ Minimal straight run requirements

Part No. 825-310 Rev. 3.4

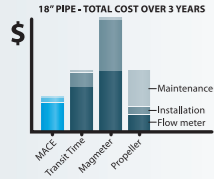
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AgriFlo XCI - Smart packaged monitoring

The AgriFlo XCI can be used to monitor vital farm equipment and on-farm sensors. Use the versatility of AgriFlo XCI to monitor inputs as diverse as: irrigation flows; farm wastewater flows; water quality; dam levels; soil moisture; pump and engine management systems.

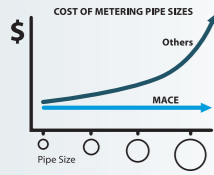
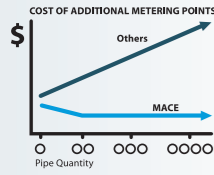
AgriFlo XCI is easy to install, easy to use and virtually maintenance free. Utilizing state of the art MACE Doppler ultrasonic velocity sensors, AgriFlo has no moving parts and provides minimal obstruction to the flow. MACE Doppler ultrasonic velocity sensors excel in trash laden water and animal waste which means that the meter stays in service longer without time-consuming repairs.



Cost effective flow metering

MACE offers the flexible, true value metering solution. When comparing flow meters, consider the TOTAL COST of the flow meter, installation & ongoing maintenance.

- In similar sized pipes, AgriFlo XCI is significantly cheaper than other comparable high quality solutions.
- AgriFlo XCI is easily installed into existing pipework whether above or below ground - no expensive fittings or re-routing.
- A typical single pipe installation can be completed by two people in under two hours.
- Because AgriFlo XCI has no moving parts and the sensor cannot foul, there are virtually no ongoing maintenance costs.
- Connect up to five flow sensors to a single AgriFlo XCI to reduce your cost per metering point even further. Significant savings for pump stations with more than one pipe.



Ready-to-Go straight out of the box

The MACE AgriFlo XCI includes a data logger, LCD display, solar regulator, battery, multiple cards (application dependent) all in one ruggedized weatherproof enclosure. No more hunting around for bits and pieces. In most cases you can be up and monitoring in just a couple of hours.

- ✓ Data Logger
- ✓ Battery
- ✓ LCD Display
- ✓ Solar Panel
- ✓ Required Card/s
- ✓ Velocity Sensor/s

Access data remotely with WebComm

- MACE WebComm card for GSM/3G gives remote access to your data
- Card is powered by and housed in the AgriFlo XCI
- Data is pushed from your AgriFlo XCI device to the MACE Data Server where it is available for retrieval on your PC or smartphone
- SMS/Email alert subscription service available

Easily configure with MACE FloCom+

- Free configuration and diagnostic software
- Powerful, easy to use Windows® interface
- Painless point 'n' click channel calibration
- No proprietary coding knowledge required

True average velocity measurement

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 sensors "see" particles in water just like turning on a flashlight in fog.

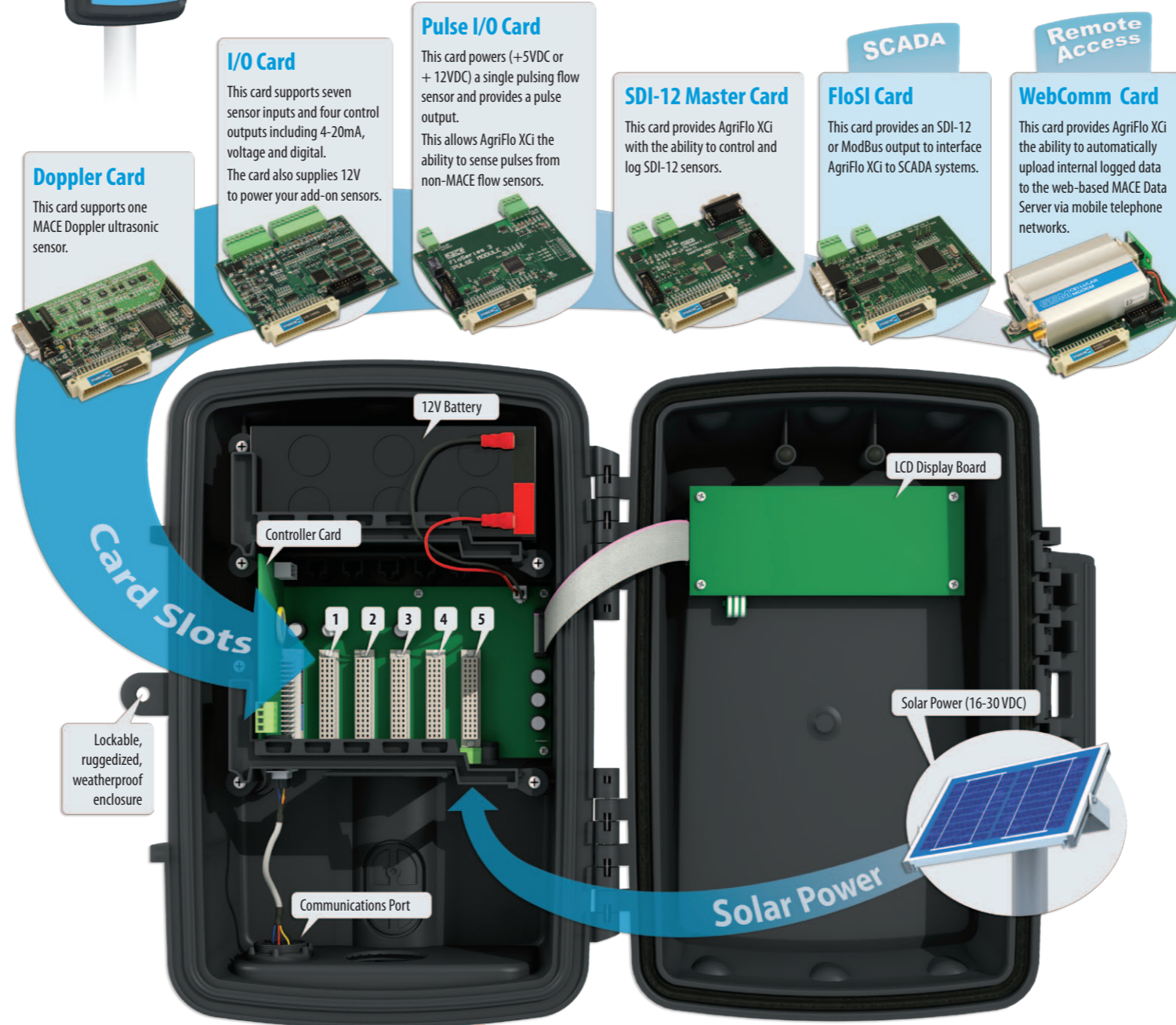
In a full pipe, electromagnetic or mechanical insertion devices "see" a golf ball sized velocity profile and then use complex algorithms to calculate velocity. By contrast, MACE Doppler ultrasonic velocity sensors utilizing MACE Advanced Signal Processing (MASP) technology "see" across the entire stream profile to give a true average velocity.



Multiple cards for multiple sensor applications

The AgriFlo XCI (multiple card interface) allows the user to efficiently monitor an array of irrigation flow and vital on-farm sensors. It's a smart packaged monitoring solution that provides remote data access with alerts and alarms. It's also telemetry-ready for effective low cost control and rapid response. Users can install any combination of the MACE cards shown, in the five available card slots.

Choose the right card/s for your application to tailor the AgriFlo to your exact farm requirements now and in the future.



Doppler Card

This card supports one MACE Doppler ultrasonic sensor.

I/O Card

This card supports seven sensor inputs and four control outputs including 4-20mA, voltage and digital. The card also supplies 12V to power your add-on sensors.

Pulse I/O Card

This card powers (+5VDC or +12VDC) a single pulsing flow sensor and provides a pulse output. This allows AgriFlo XCI the ability to sense pulses from non-MACE flow sensors.

SDI-12 Master Card

This card provides AgriFlo XCI with the ability to control and log SDI-12 sensors.

SCADA FloSI Card

This card provides an SDI-12 or ModBus output to interface AgriFlo XCI to SCADA systems.

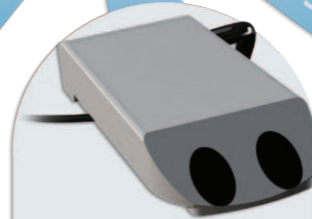
Remote Access WebComm Card

This card provides AgriFlo XCI the ability to automatically upload internal logged data to the web-based MACE Data Server via mobile telephone networks.



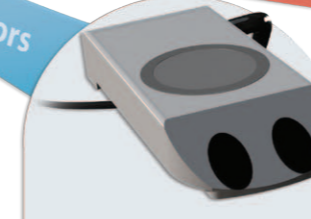
Doppler Ultrasonic Insert Velocity Sensor

For use in full pipes or partially full pipes (when used in conjunction with an EchoFlo depth sensor).



Doppler Ultrasonic Velocity Sensor

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



Doppler Ultrasonic Area/Velocity Sensor

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

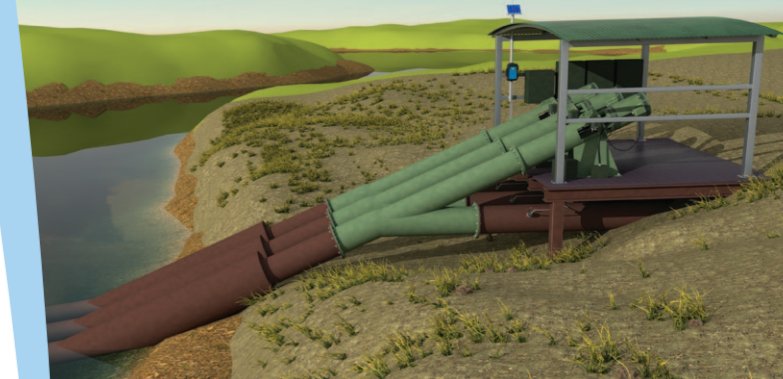


Add-on Sensors

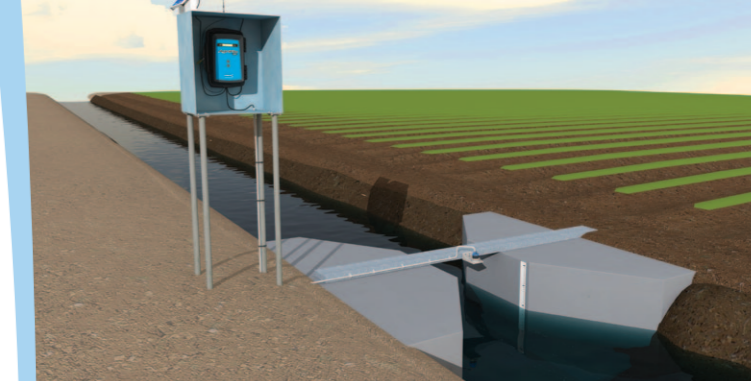
- AgriFlo XCI can be configured to monitor a diverse range of farm sensors and devices. For example:
- Pumps/engines (RPM, pressure, temperature)
 - Electromagnetic sensor for ground water
 - EC/pH/rainfall sensors
 - Pond/dam/tank level measurement

Solutions using AgriFlo XCI

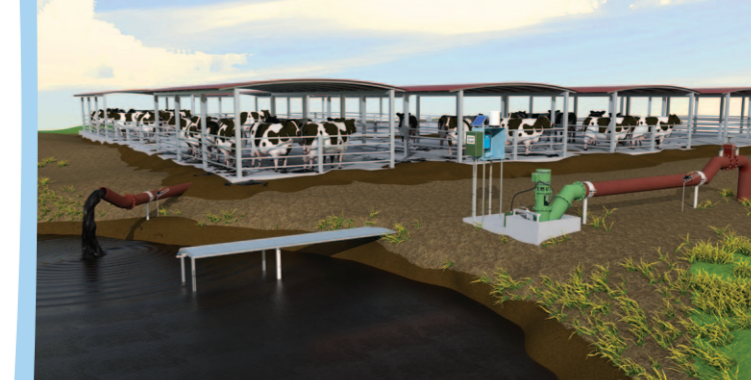
River Pump Station



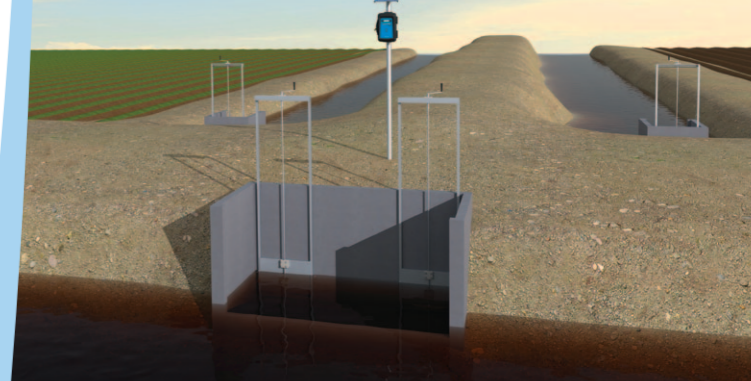
Flume/Weir



Dairy Waste



Farm Turnout/Lateral Diversion



Ground Water Pivot Irrigation

