FloPro Series 3

Measure water quantity and quality, your total monitoring solution

- Measures flow practically anywhere
- Flexible monitoring and control
- High accuracy with NO moving parts
- Low cost of ownership

40 YEARS 1968-2008
Water Monitoring Solutions
mace

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Water Monitoring Solutions

How does it benefit me?

Measures flow practically anywhere
- Same insertion sensor will measure in full pipes 4” to 100” diameter
- Same strap mount sensor will measure in partially full pipes 6” to 100” diameter
- Open channel flow
  - regular and irregular cross-sections
- Optional sensors for hazardous locations

Flexible monitoring and control
- Use multiple 3rd party water quality sensors
  - pH
  - Conductivity
  - Dissolved oxygen
- Up to four optional I/O card slots
- Multi-channel data logging (2Mb RAM)
- Use multiple 3rd party water quantity sensors
  - Downward looking ultrasonic depth sensor
  - Insert electromagnetic
  - Paddle wheels
  - Transit time

High accuracy with NO moving parts
- Works great in dirty water
- Works great in turbulent streams
- Reliable under difficult hydraulic conditions
- No more blocked pipes

Low cost of ownership
- Economical to purchase and install
- Single unit with up to five sensors
- No moving parts – virtually maintenance-free
- No pipe blockages – less field maintenance

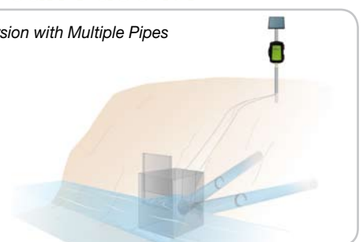
Total stream profile measurement
- True average stream velocity
- No point velocity measurements
- Less straight run requirement

Versatile straight run requirements
- Only eight total diameters of straight run
- FloPro can “look” upstream or downstream
- Different sensor styles – versatile mounting options

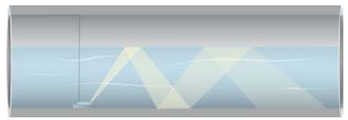
Telemetry ready
- ModBUS
- SDI-12
- GSM/GPRS modem

Where can I use it?

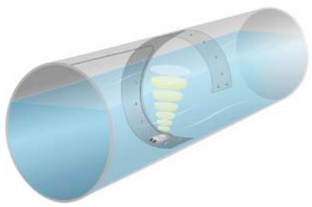
Lateral Diversion with Multiple Pipes



How does it work?



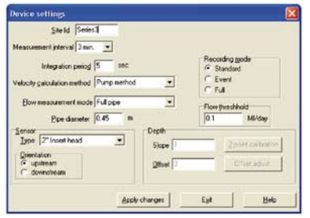
Velocity
- Measured using continuous wave Doppler ultrasound
- Sound wave measures the speed of dirt, bubbles and other particles across the whole stream profile to calculate a true average velocity.



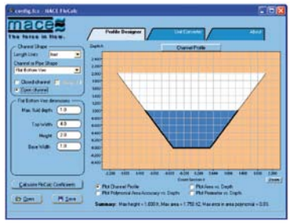
Integral Depth
- Integral hydrostatic ceramic depth sensor measures the “weight” of the water above it and converts it to a depth.
- Mounting versatility is the key. This style of depth sensor can be mounted on the channel bottom or on the side, away from sand & silt.

Electronics module
- Real-time digital display of data channels
- Integral data logger
- Solar or mains power versions

Sensors
- 2” NPT insertion sensor
- Strap mount velocity only or combined velocity/depth sensor



FloCom+ Software
- Free to user
- Easy to use
- Configure, download, diagnostics

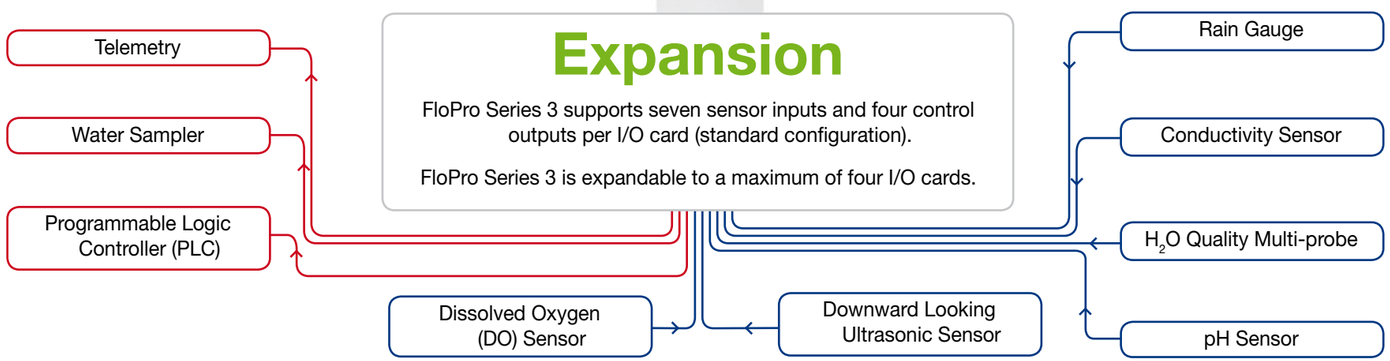


FloCalc Software
- Free utility for drawing complex channel shapes
- Powerful CAD-style interface
- Handy user conversion tools

Expansion

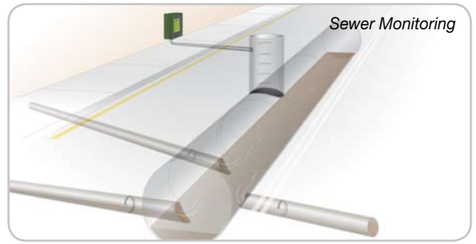
FloPro Series 3 supports seven sensor inputs and four control outputs per I/O card (standard configuration).

FloPro Series 3 is expandable to a maximum of four I/O cards.

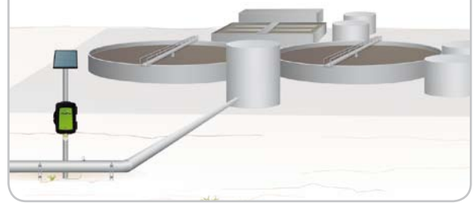


Where can I use it?

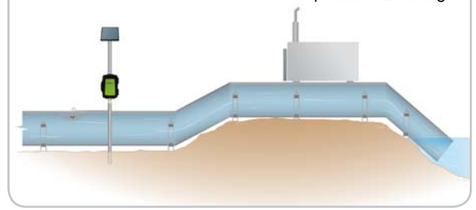
Sewer Monitoring



Sewer Treatment Plant

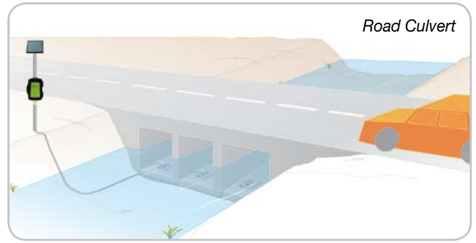


Pump Station Discharge

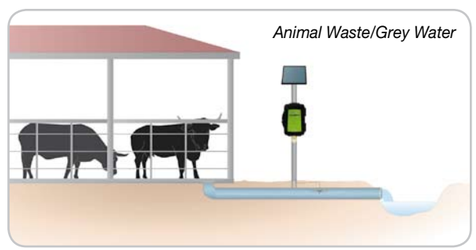


Open Stormwater Channel

Road Culvert



Animal Waste/Grey Water



FLOPRO SERIES 3 SPECIFICATIONS

GENERAL

Weight	11 lbs
Dimensions	14.2" (H) x 10.2" (W) x 6.7" (D)
Enclosure rating	IP66
Enclosure material	UV stabilized polycarbonate
Operating temperature (with internal battery installed)	5 to 122 degrees Fahrenheit
Operating temperature (with internal battery removed and external power used)	-4 to 150 degrees Fahrenheit
Flow display	16 character x 2 line alphanumeric LCD
Program memory	2 Mb flash
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	FloPro Series 3 is backed by a 24 month parts and labour guarantee

DOPPLER FLOW SENSOR INPUT CARD

Doppler velocity	One standard Doppler velocity card included Optionally, up to four additional MACE velocity only or combined MACE velocity/depth sensors (velocity card required for each)

TELEMETRY OPTIONS

Telemetry options	Optional MACE FloSi card supports MODBUS, SDI-12, RS232, RS485. Optional MACE data modem card

Don't need to measure Flow? use the HydroMace *3000*

- Integrated solution - includes logger, solar regulator and battery all in one weather proof enclosure.
- Powerful easy to use Windows software for painless configuration
- Supports up to 5 Input / Output (IO) cards
- Easily installed into existing HydroMace 2000 sites

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:	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 41 to 130 degrees Fahrenheit
Resolution:	0.04"
Overrange:	200 ft without damage

VELOCITY MEASUREMENT

Method:	Submerged Ultrasonic Doppler
Range:	±0.08 ft/sec to ± 26ft/sec
Resolution:	0.04" at 3.3ft/sec
Accuracy:	±1% up to 10ft/sec
Sensor cable:	PVC 0.35" diameter up to 164ft long
Approvals:	Optional intrinsically safe (IS) sensor with IS sensor barrier

INSERT SENSOR (VELOCITY ONLY)

Shaft dimensions:	13" long x 0.8" diameter
Head dimensions:	1.8" diameter X 1" high (2" NPT thread)
Pipe intrusion area:	1.75 inch^2

STRAP MOUNT SENSOR (VELOCITY ONLY OR COMBINED VELOCITY/DEPTH)

Dimensions:	5" length x 2" wide x 0.63" high
Pipe intrusion area:	1.25 inch^2

INPUTS/OUTPUTS PER CARD

One I/O Card Standard. Expandable to maximum of four I/O cards

Analogue inputs (per card)	2 X 4-20mA inputs, 12 bit resolution, accuracy 0.5% of full scale 2 X Voltage inputs (0-2.5V or 0-30V)
Analogue outputs (per card)	2 X 4-20mA outputs, 12 bit resolution, accuracy 0.5% of full scale
Digital inputs (per card)	2 X Frequency inputs, 16 bit resolution, range 0 – 16383Hz 2 X Counter inputs, range 0 – 10Hz
Digital outputs (per card)	2 X digital/pulse outputs, open collector referenced to GND, range 0 – 10Hz
Power Outputs (per card)	12Volt switched power output for 3rd party sensor power

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 TENDER SUBMISSIONS 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.

What instrument do I need?	FloPro Series 3	AgriFlo Series 3	HydroMace 3000
Log ONLY Flow rate and total	No	Yes	No
Log ALL configured channels *(e.g depth, velocity, total, pH etc.)*	Yes	No	Yes
Accepts MACE Doppler flow sensor cards	Yes *(up to 5)*	Yes *(up to 3)*	No
Accepts MACE Input/Output cards	Yes *(up to 4)*	No	Yes *(up to 5)*
Accepts MACE FloSI *(ModBus/SDI-12)* telemetry cards	Yes	Yes	Yes
1. FloSI Outputs - Flow rate and Total ONLY	No	Yes	No
2. FloSI Outputs - All logged channels	Yes	No	Yes

Part No. 825-311 Rev. 1.0

Mace USA LLC
PO Box 7144
Overland Park,
KS 66207
United States of America

Phone: 888 440 4215
Fax: 888 440 6999
Email: sales@maceusa.com
www.maceusa.com

mace
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