

# FloPro

Series 3



**4** STANDARD  
Control  
Outputs

Measure water quantity  
and quality  
Your total monitoring  
solution

**7** STANDARD  
Sensor  
Inputs

[www.ctplaton.com](http://www.ctplaton.com)

**mace**  
The Force in Flow

## How does it benefit me?

### Measures flow practically anywhere

- Same insertion sensor will measure in full pipes 100mm to 2.54 meters diameter
- Same strap mount sensor will measure in partially full pipes 150mm to 2.54 meters diameter
- Open channel flow
  - regular cross-sections
  - 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 3 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 three 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 8 total diameters of straight run
- AgriFlo can “look” upstream or downstream
- Different sensor styles – versatile mounting options

### Telemetry ready

- ModBUS
- SDI-12
- GSM/GPRS modem
- Spread spectrum radio

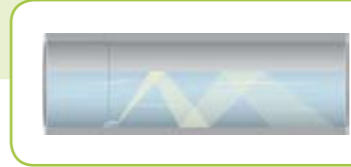
## Where can I use it?

Lateral Diversion with Multiple Pipes



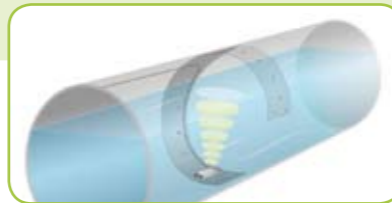
### Velocity

- 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.



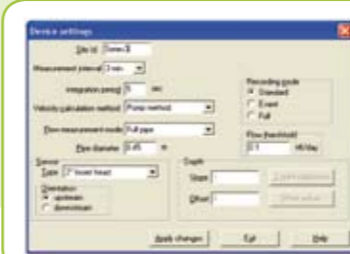
### Integral Depth

- 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.



### FloCom+ Software

- Free to user
- Easy to use
- Configure, download, diagnostics



## How does it work?



### Sensors

- 2” BSP insertion sensor
- Strap mount velocity only or combined velocity/depth sensor
- Optional Intrinsically Safe sensors



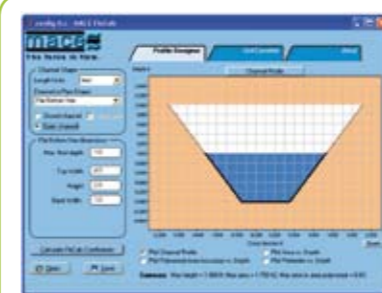
### Electronics module

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



### 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 three I/O cards.

Telemetry

Water Sampler

Programmable Logic Controller (PLC)

Dissolved Oxygen (DO) Sensor

Downward Looking Ultrasonic Sensor

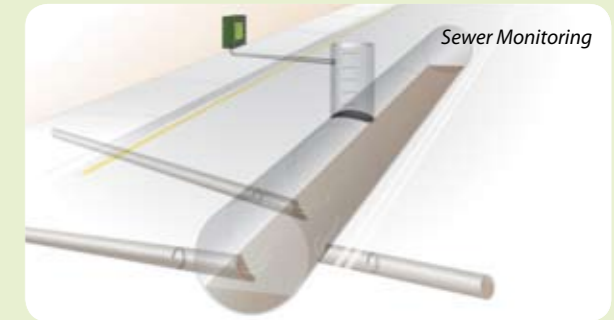
Rain Gauge

Conductivity Sensor

H<sub>2</sub>O Quality Multi-probe

pH Sensor

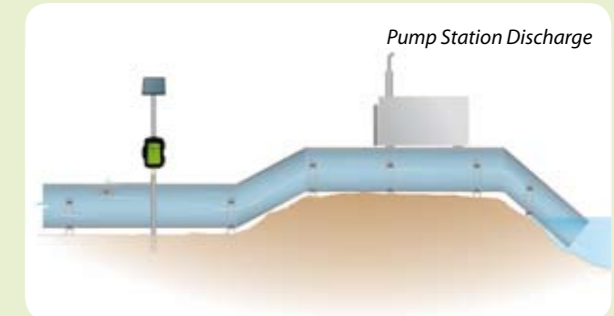
## Where can I use it?



Sewer Monitoring



Sewer Treatment Plant



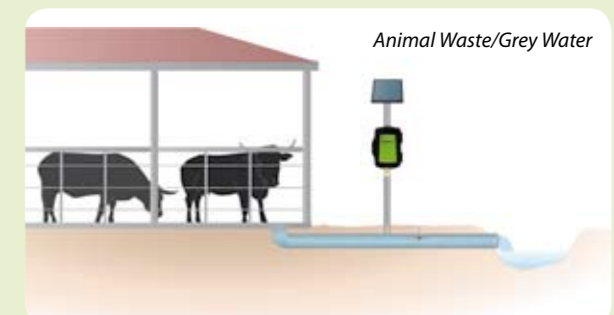
Pump Station Discharge



Open Stormwater Channel



Road Culvert



Animal Waste/Grey Water

# FloPro Series 3 Specifications

| General   |  |
|---|--|
| Weight  | 5kg  |
| Dimensions  | 360mm (H) x 260mm (W) x 160mm (D)  |
| Enclosure rating  | IP66   |
| Enclosure material  | UV stabilized polycarbonate  |
| Operating temperature (with internal battery installed)                       | -15 to +50 degrees Celsius   |
| Operating temperature (with internal battery removed and external power used) | -20 to +65 degrees Celsius   |
| Flow display  | 16 character x 2 line alphanumeric LCD with backlight Flashing flow indicator  |
| 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.<br><br>Minimum system requirements – Windows XP |
| Factory backup  | FloPro Series 3 is backed by a 24 month parts and labour guarantee   |

| Sensor Input Card |  |
|-------------------|--|
| Doppler velocity  | One standard Doppler velocity card included<br><br>Optionally, up to two 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.<br><br>Optional MACE data modem card<br><br>Optional MACE spread spectrum radio card |

#### 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.

| 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 meters above the transducer face  |
| Accuracy:          | 0.2% of full scale at constant temperature in a static stream.<br>1% of full scale over a stream 5 to 55 degrees Celsius  |
| Resolution:        | 1mm   |
| Overrange:         | 60 meters without damage  |

| Velocity Measurement |  |
|----------------------|--|
| Method:              | Submerged Ultrasonic Doppler                                   |
| Range:               | ±0.025 m/sec to ± 4.0 m/sec (± 8.0 m/sec optional)             |
| Resolution:          | 1 mm at 1.0 m/sec  |
| Accuracy:            | ±1% up to 3.0 m/sec,   |
| Sensor cable:        | PVC 9mm diameter up to 50 meters long                          |
| Approvals:           | Optional intrinsically safe (IS) sensor with IS sensor barrier |

| Insert Transducer (Velocity only) |   |
|-----------------------------------|---|
| Shaft dimensions:                 | 400mm long x 20mm diameter                |
| Head dimensions:                  | 45mm diameter x 25mm high (2" BSP thread) |
| Pipe intrusion area:              | 11.25cm <sup>2</sup>                      |

| Strap Mount Transducer (Velocity only or Combined Velocity/Depth) |                                      |
|---|--------------------------------------|
| Dimensions:   | 125mm length x 50mm wide x 16mm high |
| Pipe intrusion area:  | 8cm <sup>2</sup>                     |

| Inputs/Outputs per Card  |   |
|--|---|
| <i>One I/O Card Standard. Expandable to maximum of three I/O cards</i> |   |
| Analogue inputs (per card)   | 2 X 4-20mA inputs, 12 bit resolution, accuracy 0.5% of full scale<br>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<br>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   |



## 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



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