

## Mainstream IV Portable

Ultrasonic Area-Velocity Flowmeter  
for Open Channels and Part-filled Pipes

*For liquids  
from 'clean'*

*water to*

*raw sewage,*

*in channels*

*from*

*150mm to 3m,*

*Mainstream*

*flowmeters ensure*

*accuracy,*

*reliability and low*

*cost of ownership*

### Applications

- Effluent Monitoring
- Waste Water Treatment
- Industrial Flow Measurement
- Irrigation Channels
- River/Stream Flow Measurement
- Water Distribution

### Features and Benefits

- Quick to install - no weirs or flumes.
- Bi-directional flow measurement for forward and reverse velocities from 10 mm/s up to 5 m/s
- Streamlined velocity probe eliminates fouling and reduces flow disturbances.
- High sensitivity extends applications to 'clean' water.
- Powerful, easy to use PC software simplifies flow meter commissioning.
- Sophisticated ultrasound processing ignores spurious signals.
- Ultrasound signal quality monitor confirms measurement integrity.
- High capacity data logger for long term records of level, velocity and flow rate.
- Opto-isolated switch outputs for alarms and controls.
- Optional modem for dial-up access and internet connectivity.



**Portable Flowmeter**

Mainstream uses the area-velocity method to give a continuous or time sampled measurement of fluid flow.

Suitable for any liquid containing bubbles or suspended solids, even in minute quantities, the velocity probe detects reflected ultrasound.

Signals from the probe are analysed using Phase Coherence Processing (patents pending).

Phase Coherence Processing only accepts signals containing verified velocity information. The percentage of signal accepted is the signal quality.

A high signal quality confirms the integrity of the measurement.

The verified velocity signals produce a histogram of the flow velocities. Analysing this histogram gives the mean flow velocity.

The liquid level is measured by a submerged pressure transmitter or ultrasonic sensor.

Flow cross-sectional area is deduced from the liquid level measurement and a stored description of the pipe or channel cross-section.

The flow velocity is multiplied by the flow cross sectional area to give the flow rate, and integrated to give the total discharge.

# MainstreamIV Specification

*Competitively  
priced and  
simple to  
install, the  
Mainstream  
Portable  
flowmeters are  
the ideal  
solution for  
high quality  
data collection*

## System Unit

Case body ultra high impact structural copolymer polypropylene. Highly resistant to chemical attack. Protection classified to IP67. Case meets MIL-STD 4150-H. Dimensions 270 mm wide x 250 mm deep x 180 mm high. Weight 5 kg. Operating temperature range – 10°C to 70°C.

## Velocity Probe

Streamlined µPVC moulding. Dimensions 105 mm long x 50 mm wide x 20 mm high. Cable exit and pressure sensor mounting at rear. Reinforced cable- standard length 10 m, maximum length 500 m. Intrinsically safe option to EEx ia IIC T5 (-20°C to +40°C)/T4(-20°C to +80°C).

## Level Sensor

Stainless steel pressure transmitter with desiccant protected atmospheric reference. Sensor interface fully compatible with alternative level sensors providing 4:20 mA signals.

## Measurement Display

Large character LCD configurable for most engineering units. Display sequence is user selectable from date, time, level, flow cross sectional area, signal quality, flow velocity, flow rate, quantity of flow in last hour and total flow quantity. LCD legend available in various languages.

## WinFluid PC Software

Windows 98, Me, 2000, XP, VISTA compatible WinFluid software

Intuitive point-and-click user interface for flowmeter configuration, diagnostics and real-time displays. Features include graphical interface to input the pipe/channel cross-section, simple level sensor calibration procedure, real time displays of measurements and velocity histogram, facilities for remote diagnostics, plus backup and restore of Mainstream configuration.

## Local Communications

RS232 compatible local serial port. Automatic error detection protocol.

## Power Supply

Built in 12V 7Ah rechargeable battery for up to Six months endurance. External 12V and 24V power inputs for extended endurance.

## Data Logger

Integral data logger with recording rate configurable for 30 seconds, 1, 2, 3, 5, 6, 10, 12, 15, 20, 30 or 60 minute intervals. Facility to organise logged data into daily records with user selectable start time. Logger capacity approximately 250,000 measurements corresponding to more than 6 months data at 2 minute intervals.

Logger incorporates data compression for rapid data retrieval using WinFluid software.

Recorded measurements output in spreadsheet compatible format.

## Switch Outputs

Two opto-isolated switch outputs, each rated at 60V ac/dc and 250 mA maximum current. Switches independently programmable to open or close at a user defined level, ultrasound signal quality, velocity or flow rate. Switches also configurable to generate pulses to indicate a user defined flow quantity.

## Integrated Modem with Internet Connectivity (Optional)

## Performance

Bi-directional velocity measurement with better than 100:1 turndown ratio. Velocity measurement range from 10 mm/S to 5 m/S. Resolution 1 mm/S. Guaranteed no zero offset or drift. Level measurement conversion accuracy better than 0.05% of full scale. Flow measurement accuracy depends on installation and operating conditions. Typically better than 5% in evaluation trials.

**Allied Power** | 奥华  
We Empower Your Business

Unit B, 11/F Long To Building, 654-656 Castle Peak Road, Lai Chi Kok, Kowloon, Hong Kong  
Tel: +852 3746 9033 Fax: +852 2120 8765  
Email: [contact@alliedpower.com.hk](mailto:contact@alliedpower.com.hk)  
Web: [www.alliedpower.com.hk](http://www.alliedpower.com.hk)

**For more information call +852 3746 9033 or visit [www.alliedpower.com.hk](http://www.alliedpower.com.hk)**