# The new portable range of clamp-on flow meters from Micronics, for simple, accurate flow measurement from outside the pipe!

The Portaflow range brings simplicity to the non-invasive measurement of liquid flow. Portaflow offers the user quick and accurate flow measurement with its easy to follow menu and simple set up. Results can be achieved within minutes of opening the case!

Compact, rugged and reliable, the Portaflow range has been designed to provide sustained performance in industrial environments.

- **DSP measurement technique**
- **Reynolds number correction**
- **Easy to install**
- **Simple to follow programming menu**
- **Clamp-on sensors**
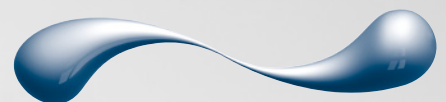
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Through measurement comes control

■ Water
■ Building Services
■ Energy Management
■ Power Generation
■ Chemical
■ Pharmaceutical
■ Petrochemical
■ Food

RECOMMENDED FOR:

■ Potable water
■ River water
■ Cooling water
■ Demineralised water
■ Water/glycol solutions
■ Hydraulic oil
■ Diesel and fuel oils
■ Chemicals
■ Petroleum products

APPLICATION/USE:

■ HVAC and energy system audits
■ Check system meters
■ Pump verification
■ Boiler testing
■ Leak detection
■ Filter sizing
■ Ultrapure water measurement
■ Heavy fuel oil metering
■ Condensate measurement
■ Balancing systems
■ Clean in place evaluation
■ Fire system testing
■ Hydraulic system testing

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PF330 – Portable Ultrasonic Liquid Flow Meter

PF330 Specification

Carry Case: – The PF330 is supplied in a hard wearing IP67 carry case.

'A' Transducers: – 13mm OD to 115mm OD pipes.

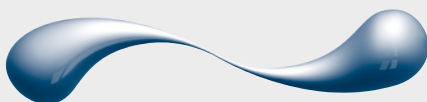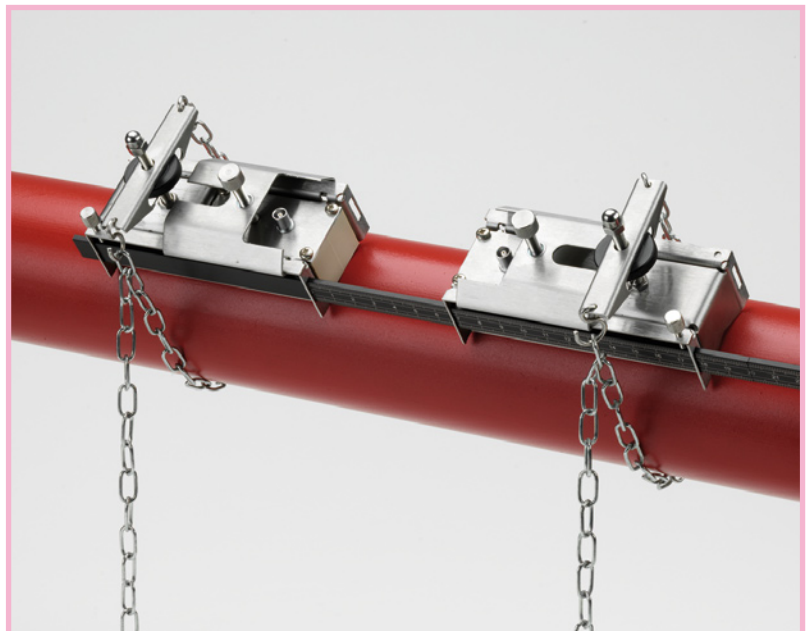**'B' Transducers:** – 50mm OD to 2000mm OD pipes.

Optional Transducers: – 'D' for pipes > 1500mm up to 5000mm.

Transducer Operating Temp: – 'A'&'B' -20°C to +135°C. 'D' -20°C to +80°C. 'A'&'B' Optional Hi-Temp -20°C to +200°C.

Outputs: – Opto Isolated 0/4 –20mA; RS 232/USB; 5v pulse @ 1 pulse/sec max.

Data Logging: – 98,000 data points. Up to 20 named recording blocks. Data displayed locally in text or graph format. Real time or stored. Can be downloaded via RS232 or USB port to Windows based PC.

Bluetooth Printer: – Optional.

PF220 – Portable Ultrasonic Liquid Flow Meter

HOW DOES IT WORK?

The Portaflow 330/220 is a transit time ultrasonic flow meter designed to work with clamp-on transducers, to provide accurate measurement of liquid flowing within a closed pipe, without the need for any mechanical parts to be inserted through the pipe wall or to protrude into the flow system. It takes just a few minutes to install and there is no need to shut down flow or drain the system!

Principle of Operation
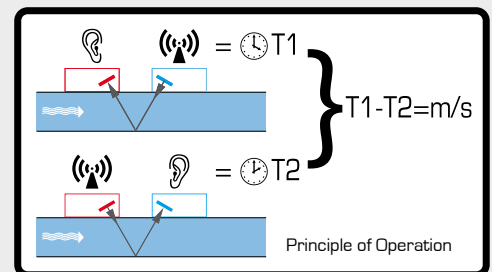
When ultrasound is transmitted between the transducers, the speed at which the sound travels through the liquid is accelerated slightly by the velocity of the liquid through the pipe. When ultrasound is transmitted in the opposite direction, the flow of the liquid causes the transmitted sound to decelerate. The subsequent time difference is directly proportional to the flow velocity in the pipe. Having measured the flow velocity and knowing the pipe cross-sectional area, the volumetric flow can be easily calculated.

PF220 Specification

Carry Case: – Polypropylene case, with foam insert and double wall for extra strength.

PF220A with 'A' Transducers: – 13mm OD to 115mm OD pipes.

    OR

**PF220B with 'B' Transducers:** – 50mm OD to 1000mm OD pipes.

Transducer Operating Temp: – 'A'& 'B' -20°C to +135°C.

Outputs: – Opto Isolated 0/4 –20mA; 5v pulse @ 1 pulse/sec max.

PF330 and PF220 Product Features

- Flow Range – 0.1m/sec to 20m/sec bi-directional
- Display – 64 x 240 pixels graphic display
- Programming via 16 key control panel
- Battery or mains operation
- Rechargeable battery
- Battery Life – 20 hours from fully charged, depending on load
- Power – 110 – 240VAC +/-10% supply via PSU
- 9 user selectable languages including English, German, French, Spanish and Russian!
- Accuracy Pipe ID > 75mm – ±0.5% to ±2% of flow reading for flow rate >0.2m/s
- Accuracy Pipe ID 13-75mm – ±3% of flow reading for flow rate >0.2m/s
- CE approved

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Hardware & Operation

The Portaflow electronics are housed in a specifically designed enclosure, which incorporates the graphic display, keypad, sensor and output facility connections. Programming the unit is carried out by selecting the options displayed in the main menu and by following the simple instructions in any of the user selectable languages.

The use of rechargeable batteries allows the unit to be operated for a period in excess of 20 hours depending on the facilities used. Continuous operation via the PSU is also possible while recharging the battery pack. Battery status, signal strength, time and date, as well as flow information are all continuously displayed, keeping the user fully aware of the measurement process.
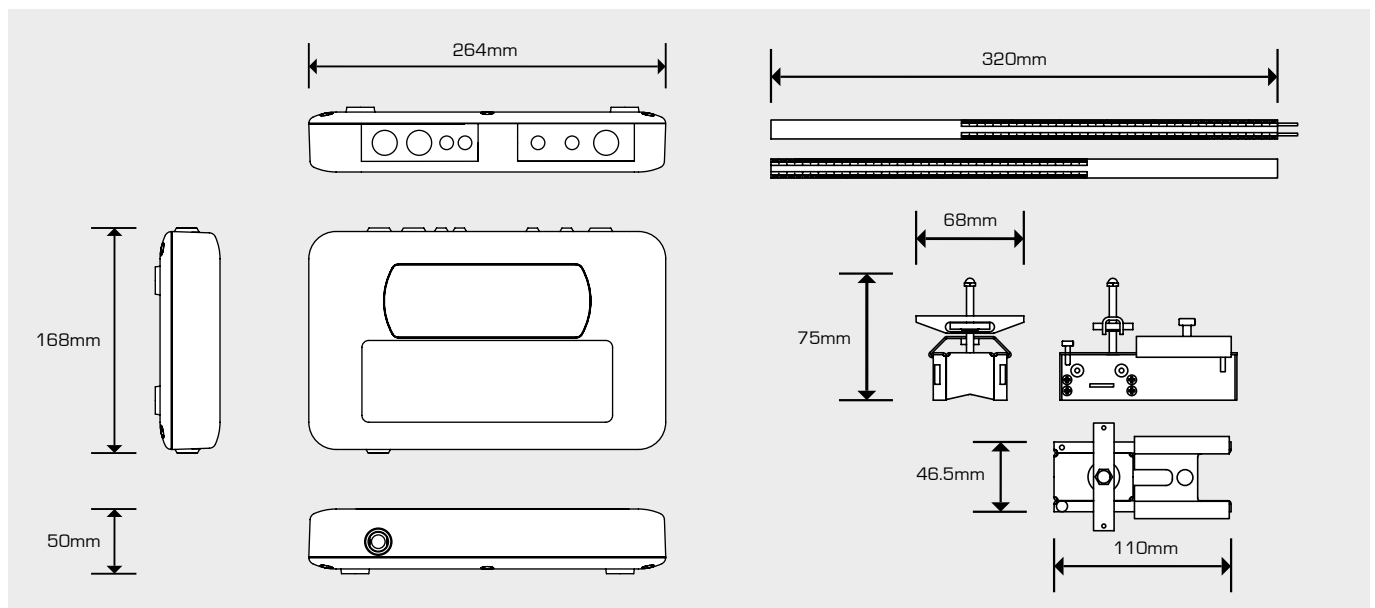
Flow Transducers

The Portaflow range is able to work with different transducer sets depending on the unit purchased and the application. Optional high temperature sensors are also available on the PF330. Sensor mounting clamps are provided with each instrument, to ensure correct mounting and reliable operation on any size pipe, in either diagonal or reflex mode.

Data Logger (PF330 only)

The built in data logger in the PF330 allows site details and flow data to be recorded with a memory, that is able to log 98,000 separate readings. Data can be stored in 5 second to 1 hour intervals. The data for each site is stored in the memory until it has been cleared. The stored data can be displayed on the instrument in text or graph format. The instrument is also capable of downloading the stored data via the USB or RS232 output port, or printing the text via the Bluetooth printer option if available.

Enclosure and guide rail dimensions: