

Data Sheet

# ULTRAFLO

## UF3300-FM, UF3300-HM

Flow Meter & Heat Meter



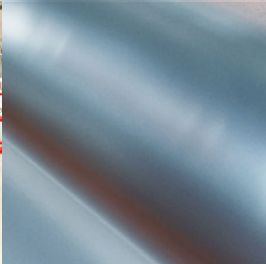
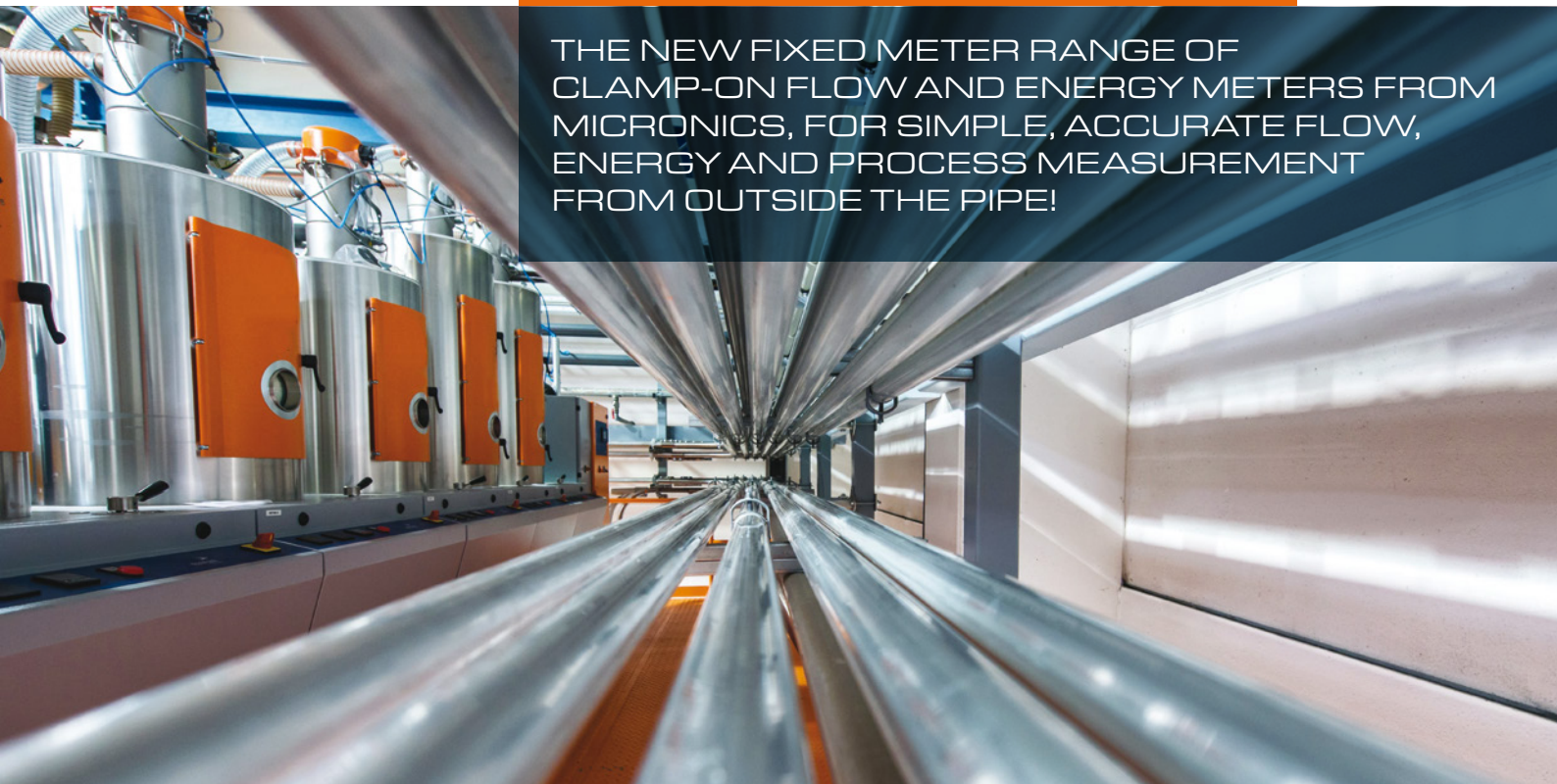
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# ULTRAFLO UF3300

THE NEW FIXED METER RANGE OF CLAMP-ON FLOW AND ENERGY METERS FROM MICRONICS, FOR SIMPLE, ACCURATE FLOW, ENERGY AND PROCESS MEASUREMENT FROM OUTSIDE THE PIPE!



## NEW!

Integral Heat & Energy Meter functions now available with the UF3300 for hot and chilled water applications!



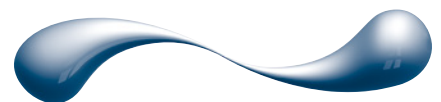
The UF3300 range brings simplicity to the non-invasive measurement of liquid flow and hydronic energy. The UF3300 offers the user quick and accurate flow and energy measurement with its easy to follow menu and simple set up. A cost-effective alternative to traditional in-line meter installation, plus dry servicing, providing minimum downtime and maximum availability!

Compact, rugged and reliable, the UF3300 range has been designed to provide sustained performance in industrial environments.

- Ultrasonic, cross-correlation flow measurement
- Reynolds number correction
- Easy to install
- Simple to follow set-up menu
- Clamp-on flow and temperature sensors



For further information call us on  
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**micronics**  
Through measurement comes control



## Industries:

- 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

## UF3300 – Fixed Ultrasonic Liquid Flow/Heat Meter

### SPECIFICATION

Temperature sensors with UF3300 heat/energy meter.

Improved data logger logs energy and flow all date stamped.

**Measurement Technique:** Ultrasonic, cross-correlation transit time method for flow measurement and PT100 Class B 4 wire for temperature measurement.

**Heat Meter Standard:** The Heat/Energy calculation is designed to comply with EN1434 section 6.

**Temperature sensors:** Clamp-on PT100 Class B 4 wire, range 0°C – 200°C (32°F – 392°F), resolution 0.1°C (0.18°F). Minimum delta T is 0.3°C.

**Enclosure:** The UF3300 enclosure is IP65 rated.

**'A' Transducers:** 13mm OD to 115mm OD pipes, IP54 with IP68 option.

**'B' Transducers:** 50mm OD to 2000mm OD pipes, IP54 with IP68 option.

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

**Flow Range:** 0.1m/sec to 20m/sec bi-directional.

**Turn Down Ratio:** 100:1.

**Accuracy:** +/- 0.5% to +/- 3% depending on pipe size for flow rate > 0.2m/s.

**Data Communications:** USB, supports most USB 2.0 BOM drives.

**3 x Pulse Output:** Pulse or Frequency. Opto-isolated MOSFET relay.

Max Current: 150mA. Isolation: >100V AC/DC. Pulse for volume flow and alarms, frequency for flow and power rate. The pulse outputs can be configured including: flow totals, energy, loss of signal, low flow alarms.

**Volumetric mode:** Pulse repetition rates: up to 50 pulses/sec (depending on pulse width).

**Frequency mode:** Max. pulse frequency: 200Hz.

**Flow at max frequency:** User selectable.

**4-20mA Output:** 4-20mA flow proportional output, optically isolated 1500 volts, 620 ohms maximum load.

**Power:** 86V to 264V AC. Optional 24V a.c./d.c. 1A max.

**Languages:** 4 user languages including English, German, French and Spanish

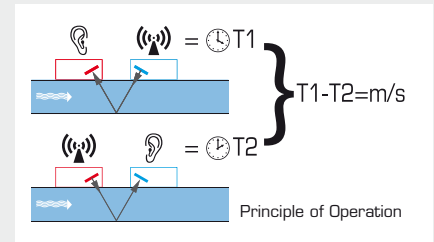
**CE approved**

**Data Logging:** 100,000,000 data points. 12 named sites. Download via USB to CSV file and export to Excel. Logs application details, time, date, flow rate, forward total, reverse total, flow velocity, flow side temperature, return side temperature, temperature difference, power, total energy, signal quality, signal SNR, signal status.



## How does it work?

The Ultraflow UF3300 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!



When ultrasound is transmitted between the transducers, its velocity is slightly increased when travelling in the direction of flow, and slightly reduced when travelling against the flow. The resulting transit time difference is directly proportional to the velocity of the flow in the pipe. Having measured the flow velocity and knowing the pipe cross-sectional area, the volumetric flow can be easily calculated.

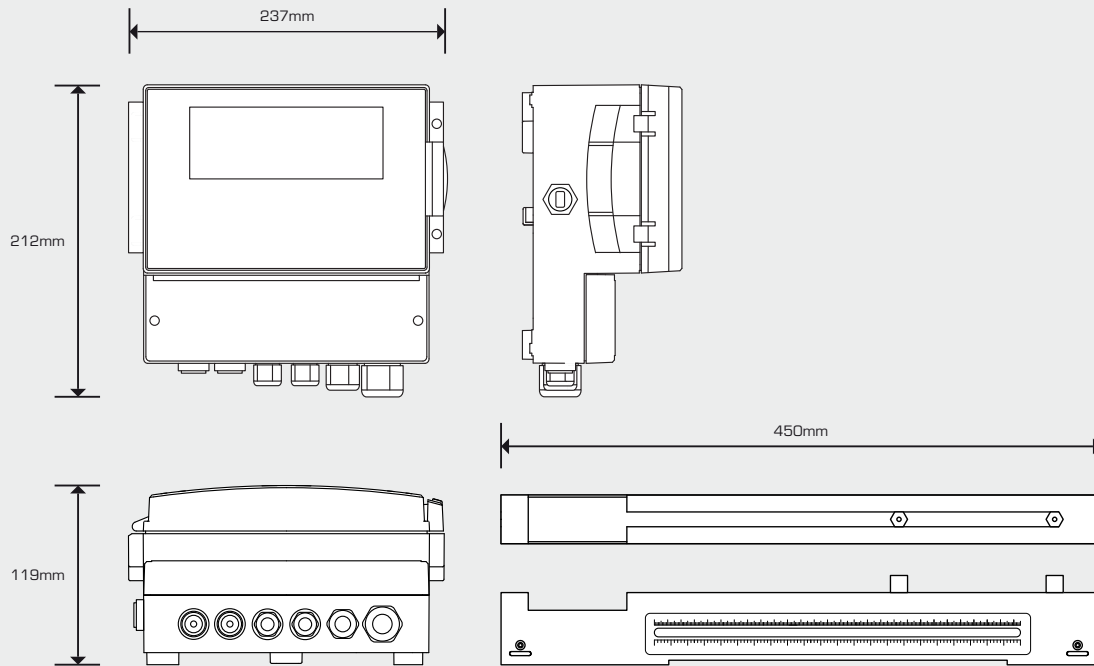
Hydronic thermal energy, heat or cooling load is calculated from a combination of the flow rate and the flow and return temperature difference or delta T to comply with EN1434 section 6.

## UF3300 Product Features

- New cross correlation flow measurement system
- Flow Range - 0.1m/sec to 20m/sec bi-directional
- Now available as a pulse output heat/energy meter
- Display - 64 x 240 pixels display
- Set-up via 15 key control panel
- Power - 86V to 264V AC. Optional 24V a.c./d.c. 1A max.
- 4 user languages including English, German, French and Spanish
- Accuracy Pipe ID > 75mm -  $\pm 0.5\%$  to  $\pm 2\%$  of flow reading for flow rate > 0.2m/s
- Accuracy Pipe ID 13-75mm -  $\pm 3\%$  of flow reading for flow rate > 0.2m/s
- CE approved



## Enclosure and guide rail dimensions:



## Hardware & Operation

The UF3300 electronics are housed in a IP65 enclosure, which incorporates the display, keypad, sensor and output facility connections. Set-up of 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.

Signal strength, time and date, as well as flow information are all continuously displayed, keeping the user fully aware of the measurement process.

## Hydronic Liquid Flow Energy Measurement

The UF3300 is a simple to use ultrasonic clamp-on flow and thermal, heat/energy meter, that uses ultrasound to measure flow rate and clamp-on PT100 temperature sensors to measure flow and return temperatures. The UF3300 measures energy rate and totalised energy. And the Heat/Energy calculation is designed to comply with EN1434 section 6.

## Flow Transducers

The UF3300 range is able to work with different transducer sets depending on the unit purchased and the application. Optional high temperature sensors are also available. Sensor mounting clamps are provided with each instrument, to ensure correct mounting and reliable operation on any size pipe, in either diagonal or reflex modes.

## Data Logger

100,000,000 data points. 12 named sites. Download via USB to CSV file and export to Excel. Logs application details, time, date, flow rate, forward total, reverse total, flow velocity, flow side temperature, return side temperature, temperature difference, power, total energy, signal Quality, signal SNR, signal status.

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