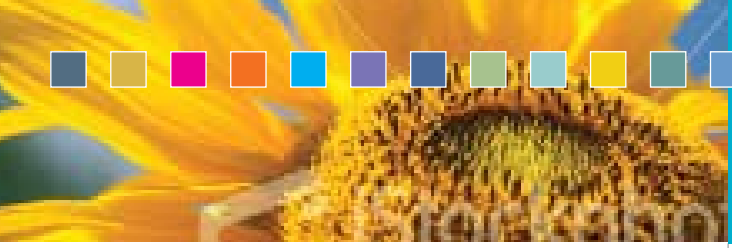


Flow:watch

Micronics
Product
Catalogue

micronics

Through
Measurement
Comes Control

Welcome to the latest edition of our Flow:watch brochure where you will find some exciting new products that ideally complement our expanding range of flow measurement equipment.

Over twenty five years of manufacturing our own Portable and Fixed non invasive clamp-on ultrasonic flow meters has given Micronics the edge you need when it comes to quality, reliability and not forgetting that all important word - **service.**

In this catalogue you will find our standard range of products and some useful accessories.

Micronics enjoys a close working relationship with all our customers throughout the UK, Europe and the Rest of the World.

Our experienced and dedicated staff will gladly be at your disposal whatever the requirement.

Customer service is our watchword and should you decide to buy from Micronics, our internal sales team will make sure the experience is a pleasant one.

Michael Farnon
Managing Director

What are the benefits of using clamp-on flow and energy monitoring Technology?

- No interruption to the process
- Cost savings on down time
- Easy to install
- Can be used on low conductivity liquids
- Non intrusive for sterile applications
- Unlimited pressure rating with zero pressure loss
- Wide temperature range
- Ideal for temporary applications
- One unit can measure any pipe diameter
- Low cost on all pipes
- No moving parts
- Low cost installation
- No down time for maintenance
- No pressure drop - energy efficient!
- Low lifetime cost
- Retrofitted option available
- Analysis of flow data
- Ideal for Pump efficiency testing
- Easy to use equipment with minimal operator training
- Ideal for troubleshooting and planned maintenance+energy efficiency programs

Transit Time flow meters -

Transit time flow meters are ideal for measuring the flow of clean, non-aerated fluids in full pipes.They work best when there is less than 2% particulate

Recommended For:

- ☑ potable water
- ☑ river water
- ☑ cooling water
- ☑ demineralized water
- ☑ water/glycol solutions
- ☑ hydraulic oil
- ☑ diesel and fuel oils
- ☑ chemicals

Doppler flow meters -

Ideal for measuring flow of any liquid containing gas bubbles or solids larger than 100 microns and in concentrations greater than 75ppm.

Recommended For:

- ☑ sewage
- ☑ treated waste water
- ☑ aerated water
- ☑ sludge and slurries
- ☑ chemicals and solvents
- ☑ viscous liquids
- ☑ abrasives
- ☑ food products
- ☑ pulp stock
- ☑ acids and caustics

Micronics - About Us

Choose Micronics for all your flow monitoring - We are the people with the service and products for you.

visit micronicsflowmeters.com available in English, French, Spanish and German

Micronics Ltd commenced trading in 1985 and was set up to design and market "Clamp-On" ultrasonic liquid flow meters for industry and commerce.

Since its inception Micronics have sold clamp-on meters in more than 80 countries, concentrating mainly on portable "Time of Flight" meters, some of which are marketed under the registered trade name of Portaflow™.

Portaflow

From the introduction of the first portable instrument the company now markets a range of 13 different products incorporating "Time of Flight" and "Doppler" technology. The range includes portable instruments and fixed meters based on the use of non-invasive ultrasonic sound transmission to detect liquid flow velocity within closed pipes or open channels. There are also Energy options for the clamp-on, fixed and portable meters.

In addition to product supply Micronics offer flow measurement solutions, combining the Micronics product range with Flow Analysis software and expert staff to conduct flow surveys.

From our offices and manufacturing facilities to the west of London in High Wycombe, we supply and support a broad customer base both in the UK and abroad. Our large network of distributors provide the same high level of Micronics service wherever you may find yourself around the world.

Visit our website:
www.micronicsflowmeters.com
where you can find all the information about our products and services. Keep up to date with our latest product and exhibition news - if you are looking for a particular application case study or some engineering data, you will find it here with our easy to navigate pages.

www.micronicsflowmeters.com

CASE STUDIES

Terminal 5

Micronics provide Clamp-On, Non-invasive, Thermal Metering Solutions for BAA - Terminal 5 Heat Measurement

In response to the Terminal 5 specification for Clamp-On Ultrasonic Heat Meters for simple maintenance, high availability and minimum down time Micronics have supplied the CALEC® ST Integrator combined with the U2000* Clamp-On Ultrasonic Flow meters.

The CALEC® ST - Ultraflo 2000 combination provides an innovative and cost-effective energy measurement solution for fixed or temporary applications. Configured for Heating or Cooling applications the system elements for a composite thermal meter application comprise:

- One Clamp-On, non-invasive Flow Meter
- One Pair of Temperature Sensors - 2- or 4-wire PT100 or PT500 temperature sensors
- One Integrator / Energy Calculator

Custody Transfer meters require immersion temperature sensors, however, for monitoring and general energy management applications, Clamp-On sensors can be used providing a totally non-invasive system.

Associated benefits include no disruption of services or problems associated with system drain down for maintenance, providing minimum downtime and maximum availability plus significant reductions in meter supply and installation costs for large meter or retrofit applications.

The system can be applied in a stand-alone mode and communicate totalized energy and volumetric values or selected alarm conditions via relay outputs or integrated with BEMS, AM&T or Billing systems via M Bus and other industry standard communications.

* The U2000 has since been updated to the U3000, see page 12/13 for details.

BUILDING SERVICES

NEW!
THE PF330

Portaflow 330

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: – Please contact Micronics
Transducer Operating Temp: – 'A'&'B' -20°C to +135°C. 'D' -20°C to +80°C. 'A'&'B'
Outputs: – Opto Isolated 0/4 –20mA; RS 232/USB;
Pulse output - programmable pulse width from 2ms - 500ms
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.

- 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 ± 0.5% to ± 3% depending on pipe size for flow rate >0.2m/s
- CE approved

PORTABLES
PF330

- For "clean" liquid monitoring
- To suit pipes 13mm-5000mm
- 98000 point logger and software
- Non invasive sensing
- Portable and Easy to use

Complementary Products

• Portable CalecST Energy

• Thickness gauge

• Thermal Printers

• Battery GPRS telemetry

NEW! THE PF220

PORTABLES

PF220

- For "clean" liquid monitoring
- **A** version for pipes 13mm-115mm
- **B** version for pipes 50mm-1000mm
- Non invasive sensing
- Portable and Easy to use

Portaflow 220

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; Pulse output - programmable width from 2ms-500ms

- 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 ±0.5% to ±3% depending on pipe size for flow rate >0.2m/s
- CE approved

Complementary Products

• Portable CalecST Energy

• Thickness gauge

• Battery GPRS telemetry

SOFTWARE

PortaGraph II / Doppler

- Quickly download your valuable data
- Simple setup and easy to use

PortaGraph II

- For use with PF330
- For Windows 98 / XP / Vista / 7
- Quickly graph downloaded data and export to Excel

Complementary Products

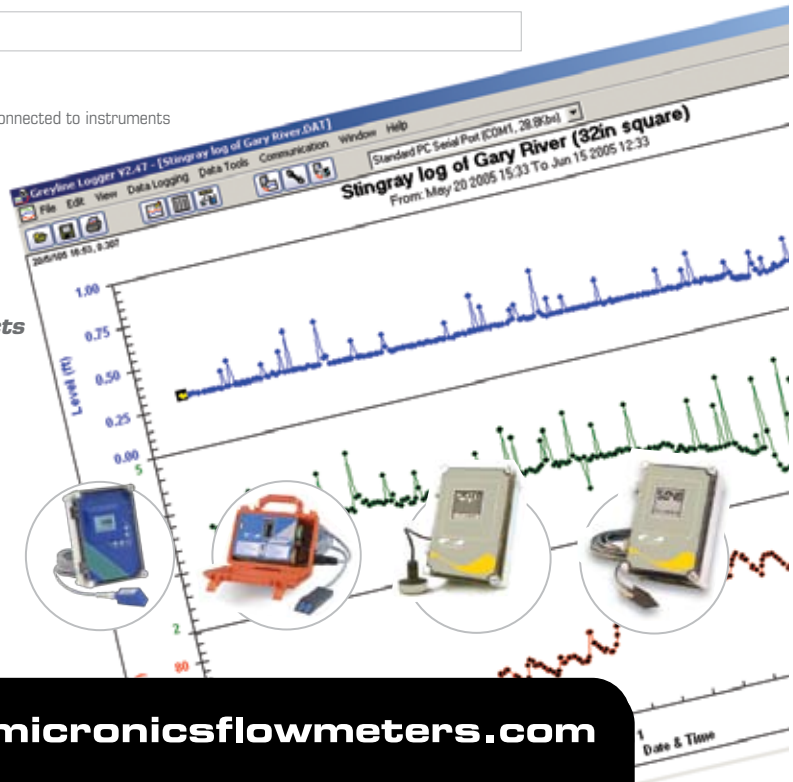
- PF330

Doppler

- For use with Doppler instruments
- Dial in function when modems are connected to instruments
- Quickly graph the downloaded data and export to Excel
- For Windows 98/XP

Complementary Products

- PF D550
- UF D5000
- Stingray
- AVFM-II
- OCF-4.0



PORTABLE HEAT METER

- Heatmeter for use with U3000, PF330 and PF220
- Use with external datalogging for recording long-term energy measurements
- Non invasive sensing
- Portable and Easy to use

Complementary Products

- Portable Flow meters
- Pulse 101 data logger

Portable Heat Meter

- Compatible with any flow meter with a pulse output
- Use with external datalogger for temporary energy monitoring
- Quick and easy setup
- Kwh Total, instant energy, volume and temperature readings

Sensor Probes:- 4 wire PT100 clamp-on 150mm probes.
Temperature Range:- 0°C to +180°C.
Power:- Battery powered.
Option:- External datalogger.
Replaceable Battery Life:- Approximately 6 years.
Units:- Selectable, volume, Delta T, Hot and Cold temperature, Kwh Total, Instant energy.
Output:- Pulse per Kwh, Pulse per m^3.
Programming:- No programming required- set and forget.

See pages 3 and 25 for our energy case studies!

micronics LiveData

Micronics Live Data is a complete end-to-end data delivery and analysis package - from your sensors to your desktop. The Micronics Live Data servers store data in a secure password protected environment and allow realtime multi-user access. Systems can be configured to send e-mails, text messages and activate other alarm systems from a website user interface. Data is accumulated in the background without user attention required.

Micronics LiveData GPRS Telemetry

- Compatible with any flow meter with a pulse output
- Quick and easy setup- No technical knowledge required
- No modems, no dialing, no software required
- Wireless Web-based Monitoring and Control
- Low power, ultra secure data transfer requirements monitoring
- Simply apply power, and login online to view your live data

Sensor Covers

- Durable Nylon/PVC
- Draw string and Velcro fixing method for ease of mounting

Energy Profile Logger/ACA Clamp Meter

- Low Cost
- Simple to Use
- Bluetooth® Comms
- Easy connectivity
- Includes PC Software


Transducer

Thickness Gauge 8812

- Allows accurate wall thickness entry for best results with clamp-on flow meters
- Quick and easy setup and calibration

Pulse 101 Data Logger

- Interfaces to pulse output flow meters and contact closures
- Up to 100Hz input
- Free software (see below)
- Real time operation
- Miniature size

Thermocouple Recorder TC4000

- Accepts a variety of Thermocouple types
- Internal cold junction reference.
- Real time operation
- Miniature size
- Free software (see below)

Process 101 Current Recorder

- Suitable for 4-20mA recording
- -20 to +100mA range
- Programmable engineering units
- Real time operation
- Free software (see below)

Complementary products

Add enhanced application knowledge and maximise in-service life

NEW!
THE U3000/U4000

The U3000/U4000 stands for continuity and long term reliability.This clamp-on flowmeter for liquids with its robust industrial construction provides a quick, reliable and easy means of measuring flow accurately - whatever the industry. Adding the optional energy calculator turns the U3000/U4000 into a heat meter.

Ultraflo 3000/4000

Enclosure:- Wall mountable. ABS housing with clear front panel and IP65 protection. Separate signal and power cable entry glands.
User Controls:- Large 240 x 64 graphics LCD allows easy to read multi-line menus. Multi-function 15-key keypad permits intuitive option selections.
Accuracy:- ±0.5% to ±3% depending on pipe size for flow rate >0.2m/s.
Repeatability:- ±0.5% of measured value or ±0.02m/s whichever is greater.
Outputs:- 1. Opto-isolated 4-20mA current output, max current 26mA into 620ohm max load.
2. Pulse output – Programmable Pulse Width from 2ms – 500ms.
3. Two programmable user alarms for high/low threshold triggering.
Power Input:- 85V – 264V AC, 50/60Hz (standard), 24V AC or DC (optional).
Transducers:- A-ST for pipe range 13mm – 115mm, pipe temperature -20°C to +135°C.
B-ST for pipe range 50mm – 2000mm, pipe temperature -20°C to +135°C.
D-Type for pipe range 1500mm – 5000mm pipe. Contact Micronics.
Environmental:- Operating temperature range -20°C to +50°C.
Storage temperature range -55°C to +75°C, Humidity 90% RH at 50°C max.

- User friendly Quickstart operating mode
- Bi-directional accurate measurement over wide fluid velocity range, 0.2m/s to 20m/s
- Automatic compensation for velocity profile effects
- Secure operation – menus password protected
- 9 user selectable languages including English, German, French, Spanish and Russian!

Complementary Products
- CalecST Energy Meter

FIXED
U3000/U4000
- For "clean" liquid monitoring
- To suit pipes 13mm-5000mm
- Non invasive sensing
- Simple and easy setup

Industries:
- ☑ Chemicals
- ☑ Petrochemicals
- ☑ Power plants
- ☑ Water
- ☑ Oil & Gas
- ☑ Semi-conductor
- ☑ Food & Beverages
- ☑ Pharmaceuticals

Highlights:
- ☑ Minimised uncertainty
- ☑ Optimised reliability
- ☑ Minimal maintenance
- ☑ Efficient regreasing
- ☑ Easy sensor mounting
- ☑ All in one system

NEW!
THE U6000

The U6000 stands for continuity and long term reliability. Flow measurement can be done anywhere and start-up is immediate.

This clamp-on flowmeter for liquids with its robust industrial construction and regreasing concept provides a revolutionary solution for easy handling.

The U6000 is manufactured according to the European Directive 94/9 EC (ATEX 100a).

These flowmeters are approved for installation and use in hazardous classified locations of Zone 1 and 2 by the PTB and are in accordance with the European Standards of the EN 500xx and the EN 60079-7 standard.

Ultraflo 6000

Enclosure:- Die-cast aluminium with polyurethane coating. Stainless steel option.
Max. deviation (under reference conditions):- <± 1% of M.V. for DN 50 mm / 2", v > 0.5 m/s / 1.5 ft/s. <± 3% of M.V. for DN < 50 mm / 2", v > 0.5 m/s / 1.5 ft/s.
Measuring range:- 0…20 m/s / 0…66 ft/s.
Process Temp:- -40…120°C / -40…284°F. High temp option -50…200°C / -58…392°F.
Communication:- Current, pulse & status output. HART® communication, control input.
IP rating:- IP66/IP67
Mounting area:- 10 diameters inlet, 5 diameters outlet
Repeatability:- <± 0.2%
Protection ATEX:- EEx - zone 1/2 compliant, FM - Class I DIV 1/2, CSA - Class I DIV 1/2. Intrinsically safe Ex-I.
Pipe size:- (DN15…DN6000 / ½"…160") depending on flow sensor.
Power supply:- Standard 100…230 VAC (-15/+10%), 50/60 Hz/ Option: 24 VAC/DC
Human machine interface:- Infra red touchscreen setup.
Languages:- English, French, German
Solid content:- less than 5%.
Gas content:- less than 2%.

- Flexible ultrasonic flowmeter solution
- Robust industrial clamp-on construction
- Flow direction (forward or reverse)
- Totalisation of volume flow
- Reliability of flow measurement, Quality of acoustic signal
- CE approved
- Continuous measurement of actual volume flow rate, flow velocity, velocity of sound, damping of acoustic signal, signal to noise ratio
- Immediate start-up
- Reliable measurement
- All in one concept
- EEx - zone 1/2

FIXED
U6000

- For "clean" liquid monitoring
- To suit pipes 15mm-6000mm
- Non invasive sensing
- EEx, FM and CSA approvals
- Setup wizard

Industries:

- ☑ Chemicals
- ☑ Petrochemicals
- ☑ Power plants
- ☑ Water
- ☑ Oil & Gas
- ☑ Semi-conductor
- ☑ Food & Beverages
- ☑ Pharmaceuticals

Highlights:

- ☑ Minimised uncertainty
- ☑ Optimised reliability
- ☑ Minimal maintenance
- ☑ Efficient regreasing
- ☑ Easy sensor mounting
- ☑ Installation wizard
- ☑ All in one system

HEAT METER

CalecST

- Calculates energy use
- Temp. sensors are clamp-on or inserted
- Used in conjunction with a flow meter

Clamp-on Ultrasonic technology can be successfully implemented as a cost effective solution to improve energy measurement and management.

Complementary Products

- Fixed flow meters: U3000

CalecST Heat Meter

- Allows accurate energy calculations - used in conjunction with a flow meter
- Quick and easy setup

Sensor probes:- 4 wire PT100 clamp-on 150mm/ 2 wire PT500 insertion.
Power:- Mains 240VAC/24VDC/Battery (6 year life).
Options:- MBUS central hub with GSM/Ethernet for up to 240 CalecSTs .
Output options:- Pulse / Pulse with Mbus / 4-20mA / LON
Units:- Selectable, volume, Delta T, Hot and Cold temperature, Kwh Total, Instant energy.
Programming:- No programming required- set and forget.

Go to pages 3 and 25 to see how you could save Energy - AND MONEY!

www.micronicsflowmeters.com

CASE STUDIES

RWE Npower

Clamp-On Ultrasonic water flow measurement provides cost-effective, minimal disruption, installation and maintenance solution for Combined Heat & Power Station.

RWE Npower Stallingborough is a combined Heat and Power Station supplying Electricity and Thermal Power (Steam) for their client Millennium Inorganic Chemicals on an adjacent site.

The purchase of new meters installed 15 months ago was driven by changes in Environmental Legislation in the area of PPC (Pollution Prevention Control) and the subsequent need to improve measurement and management of raw water usage, process water efficiency and effluent discharge. Additional motivation was provided throughout the continual improvements required by ISO 14001.

Having considered various measurement alternatives Clamp-On Ultrasonic meters and portable instruments were selected due to the installation and maintenance/service benefits associated with the non-invasive technology. Micronics were selected as the supplier due to a combination of their long-term experience with Clamp-On technology, competitive pricing and product performance. Four U2000* - Time of Flight - fixed meters, a DFM - Doppler - fixed meter and a Portaflow 300 - Time of Flight - portable flow and logging instrument were purchased as a package.

The Four U2000's are used to meter - Raw water supply to the station from a bore-hole and to measure deionized water flows at three points in the Station's generating process with one of the meters providing a checksum of the two earlier process flow measurements. As Doppler technology is more suitable for turbulent flow measurement the DFM meter was selected to monitor plant effluent discharge. And the Portaflow 300 is used for flow verification and investigations as required.

There has been no direct cost-benefit to RWE Npower as their raw water is supplied by their client free of charge. However, improved measurement and visibility has enabled them to improve the plant's efficiency and as a consequence less water is being consumed, less wastewater is being discharged and their client is benefiting from lower energy costs! The Micronics products have performed well and the RWE Npower installation has been an environmental and financial success.
There is no potential for replication on-site, however, the project has demonstrated how Clamp-On - Ultrasonic technology could be successfully implemented to improve efficiency as part of an overall Water and Wastewater management system on similar sites.

* The U2000 has since been updated to the U3000, see page 12/13 for details.

POWER INDUSTRY

PORTABLES

PFD550

- For "dirty" liquid monitoring
- To suit pipes 13mm-4500mm
- On board data logger and software
- Non invasive sensing
- Portable and Easy to use

New!

PFD550 Portable Doppler Flow Meter

Suitable for most contaminated fluid flows

- Single clamp-on transducer
- Fast, simple operation
- Rugged, waterproof
- On board data logger
- Free analysis software

Pipe Range:- 13mm to 4500mm.
Transducer Temperature Range:- - 40°C to 120°C.
Power:- 110 –240VAC +/-10%.
Internal Rechargeable Battery:- 18 hours from full charge.
Programming:- via 5 key input controller.
Display:- flow rate, total.
Data Logger:- 300,000 point capacity time and date stamped.
Sensitivity:- fully adjustable.
Damping:- fully adjustable.
Outputs:- Opto isolated 0/4 –20mA; RS 232.

PORTABLES

- For part filled pipe and open channel monitoring
- Built in display
- Long term data-logging capability
- Portable and Easy to use
- Streamlined sensor for invasive measurement

Stingray Portable Area/Velocity Meter

Suitable for any open channel or partially full pipe.

- Compact, rugged, water tight, dustproof
- Up to 4 years logging from Alkaline "D" cells
- Free onboard Windows compatible analysis software
- Large capacity memory store
- Fast download via RS232 port

Electronics Housing:- 208x166x86mm,polycarbonate, 4.5kg.
Operating Temp. Range:- -20°C to +60°C
Set-Up:- Via Windows compatible on-board software.
Display:- LCD Bar Graph selectable Displays: Memory, battery, temp, velocity, level.
Logger Interval:- 10secs (15 days) to 20mins (4 years).
Data Capacity:- 130,000 Data points.
Output:- RS232 @ 28,800 baud.
Power:- 4 Alkaline "D" cells.
Velocity Range:- 0.03m/sec to 3m/sec
Level Range:- Minimum Head 25.4mm, Maximum Head 4.5metres.
Sensor Operating Temp Range:- -15°C to +65°C (5°F to +150°F).

CASE STUDIES

Scottish Water

Scottish Water uses Micronics Clamp-on Portable Flow Meters for Flow and Load surveys in Treatment Works.

Scottish Water - Scientific Services in Dundee are undertaking surveys of 111 Treatment Works sites to establish the current infrastructure capacity as part of their overall development program. And they are using Micronics PDFM 4.0* portable instruments to monitor wastewater flow rates and establish load profiles within the Treatment works. The objective is to establish the demand profile and the effectiveness of existing plant to determine development requirements and this is the area where the Micronics instruments have proved to be a valuable tool, enabling the engineers to establish the diurnal sewage patterns and analyse the performance of existing plant.

Having considered various measurement alternatives Ultrasonic, Clamp-On, Non Contact measurement was selected due to the ease of installation and operational benefits associated with the non-contact technology. And Micronics were selected as the supplier due to a combination of their experience with ultrasonic, flow measurement technology and their helpful pre-order service and guidance including a free trial/demonstration offer.
Two Micronics PDFM 4.0 instruments were purchased as a package. The PDFM 4.0's are portable instruments, which are suitable for full pipes. And they have the capability to measure and log influent and or effluent flow and totalised flow rates within Treatment Works.

The survey project is currently 50% complete and the instruments have been successfully used on various sites. Scottish Water have found them easy to install and simple to use, a key requirement to provide a fast return in valuable information for a minimal investment in time! The software is user friendly with good graphing facilities to identify peak demand and duration peaks using a range of sample rates selected by Scottish Water to establish flow and load profiles over 28 day logging periods.

Scottish Water is pleased with the Micronics products, which have performed well and the pre-order and post order service response has been good. The instruments have been successful and the information gathered has made a valuable contribution to the survey project and the potential for further use of the instruments within Scottish Water is extensive.

This project is an example of how Clamp-On - Ultrasonic technology can be successfully implemented to gather information as part of an overall Water and Wastewater management process and there is potential for replication on similar sites.

*Now superseded by PF D550, see page 18 for details.

WATER INDUSTRY

New!

FIXED
UFD5000

- For "dirty" liquid monitoring
- To suit pipes 13mm-4500mm
- Non invasive sensing
- Easy to use

UFD5000 Doppler Flow Meter

- Watertight enclosure
- RFI rejection filters
- Signal strength indicator
- New bi directional flow monitoring

Introducing the New UFD5000 Doppler Flow Meter with:

- ☑ enhanced signal processing filters out background noise interference
- ☑ instrument auto-detects plug-in of optional extra relays and data logger
- ☑ white backlit matrix display with adjustable brightness
- ☑ new 5-key menu system
- ☑ removable terminals for electrical connections
- ☑ menu language selection: English, French, Spanish
- ☑ reverse flow measurement - a minus sign will appear during reverse flow and the totalizer can be configured to decrement or ignore reverse flow
- ☑ 4-20mA, relays and totalizer are also configurable for reverse flow
- ☑ safe hinged cover to access electrical connections
- ☑ optional data logger capacity increased from 50,000 to 2 million data points
- ☑ data logger output via USB to flash/thumb drives (so you don't need to take a laptop for data retrieval)

Pipe Range:- >13mm up to 4.5m.
Power Input:- 100 –260VAC, 50/60Hz, Option 9-36VDC 5 watts max.
Flow Rate Range:- 0.03m/s to 12m/s.
Accuracy:- +/-2% of full scale. Requires solids or bubbles of minimum size 100 microns, minimum concentration 75ppm.
Repeatability:- +/- 0.1%.
Linearity:- +/-0.5% of full scale.
Display:- Enhanced multi function white backlit matrix display, relay states, operating mode, calibration menu.
Output:- Isolated 0/4 –20mA(1000ohm load max.) 2-5amp rated SPDT relays, programmable flow alarms and/or proportional pulse. Adjustable sensitivity and damping.
Electronics Operating Temp:- -23°C to + 60°C.
Sensor Operating Temp:- -40°C to 120°C.
Options:- Intrinsic safety barriers, high temp to 150°C, ISE insertion option. Sensor designed to withstand accidental submersion. Enclosure heater controlled to maintain temp. at 40°C. Additional control relays.
Data logger:- 2 million points download via USB with Windows software.

www.micronicsflowmeters.com

FIXED
AVFM-II

- For part filled pipe and open channel monitoring
- 50000 point logger option and software
- Streamlined sensor for invasive measurement
- Easy to use

AVFM-II Area-Velocity Flow Meter

Suitable for any open channel or partially full pipe.

- Monitor flows through partially full pipes or open channels
- Eliminates the need for flumes or weirs
- Automatic temperature compensation
- Barriers for I S operation
- 50,000 point data logger
- Logger software included. Runs on Windows 95, 98, 2000, XP or NT

Enclosure:- Watertight and dustproof (IP66).
Power Input:- 100-130VAC and 200-250VAC, 50/60HZ., 7.5 watts 12VDC or 24VDC.
Outputs:- 2x Isolated 4-20mA into 1000 ohm load. Programmable for Flow, Head or Velocity. RS 232 Option Serial and Windows Software.
Relays:- 3 x form 'C' dry contacts rated 5 amp SBDT Programmable for Flow Proportional pulse (sampler/totalizer) flow and/or level alarm.
Velocity Range:- 0.03 to 6.2m/sec
Level Range:- Minimum Head 25mm to Maximum Head 4.5m.
Accuracy:-
Level:- 0.25% of Range,
Velocity: +/-2% of Reading
Linearity and Repeatability:- +/- 0.1%.

Measure and Log - Talk to us about the ideal package for you.

FIXED
OCF-4.0/SLT32

- For open channel monitoring
- Versatile choice of channel types
- Easy to use

OCF-4.0 Open Channel Flow Monitor

- Simple 3-Key calibration
- Password protected
- RS232 Serial output
- 50000 point logger
- Windows software

Enclosure:- Polycarbonate (IP66). Shatterproof clear Front Panel.
Power:- 100-130VAC/200-260VAC, 50/60HZ & 5 watts max.
Option:- 12VDC or 24VDC.
Outputs:- 4-20mA isolated into 1000ohm load. 3x control Relays Form "C" dry contacts rated 5amps SPDT. Isolated RS232 for cable transfer to PC or Dial up connection. Programmable baud rate from 1200 to 19200.
Sensor Specification:- Maximum range: 3.66m.
Dead Band:- Programmable. Minimum 200mm.
Beam Angle:- 8°.
Operating Frequency:- 92KHz. Exposed Matl. CBVC. Temperature compensated.
Max Pressure:- 1.35bar.

Use with Flumes, Weirs, V notches

SLT32 Level and Flow Monitor

- Monitor flows through open channels
- Eliminates the need for flumes or weirs
- Automatic temperature compensation
- Barriers for IS operation
- Optional 50000 point data logger
- Logger software included. Runs on Windows 95, 98, 2000, XP or NT

Enclosure:- Watertight and dustproof (IP66).
Power Input:- 100-130VAC and 200-250VAC, 50/60HZ., 7.5 watts 12VDC or 24VDC.
Outputs:- 2x Isolated 4-20mA into 1000 Ohm load. RS232 Option Serial and Windows Software.
Relays:- 3 x form 'C' dry contacts rated 5 Amp SBDT Programmable for Flow Proportional pulse (sampler/totalizer) flow and/or level alarm.
Level Range:- with standard PZ32T sensor: 10m (other options available)
Accuracy:- 0.25% of Range,
Linearity and Repeatability:- +/- 0.1%.


SLT32 Sensor

MAJOR SAVINGS

HydroFLOW water treatment products are used around the world, are extremely efficient, easy to install, chemical free and maintenance free. The systems provide de-scaling, prevent limescale formation and make great cost savings.

HydroFLOW generates a powerful conditioning effect over long distances of pipe networks, without water having to flow past the signal generator itself, protecting plumbing both downstream and upstream. Its concentrated power even provides total scale protection in storage tanks with static water.

HydroFLOW attaches to pipes of any material and can even work in hostile environments. Totally non-invasive, it requires no plumbing and no maintenance. It operates without chemicals and reduces the need for chemical treatment of corrosion and algae.

Electronic de-scaling

- Easy to install
- Proven technology
- Prevents scaling and corrosion
- Totally non-invasive
- No interference with other equipment
- Wide range of applications

HydroFLOW System

- Protects extensive pipe networks upstream and downstream
- Fits virtually any appliance
- Works on all pipe materials
- Industrial and domestic versions available
- Class-leading water treatment or water de-scaling systems
- Intelligent power supply visually confirms correct operation
- Easy to install
- Suitable for pipe sizes between 32 and 125mm, larger custom sizes also available
- Extremely cost-efficient
- Reduces service, maintenance and repair costs
- Prevents scale build up

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CASE STUDIES

Kings College

Thermal Heat flow metering utilizing Clamp-On Ultrasonic water measurement provides cost-effective, minimal disruption, installation and maintenance solution for Campus District Heating Systems

Kings College - London heats its campus sites via a number of boiler houses, generating thermal energy for distribution to individual buildings via LTHW (Low Temperature Hot Water) networks.

A pilot system of new meters was installed 12 months ago to identify the thermal energy use of individual buildings, facilitate their management as Energy Cost Centres and provide information for Building Energy Labelling in line with European Directives.

The new meter installations on the Guys campus, which represent circa 10% of the university is currently being manually read. However, the plan is for the meters to be read automatically via the university's BEMs system, to provide continuously updated information for Monitoring and Targeting including benchmark comparisons with energy consumption norms for the university sector.

Having considered various measurement alternatives Clamp-On Ultrasonic meters were selected due to the installation and maintenance/service benefits associated with the non-invasive technology including low cost and minimum disruption installation with no system drain down required plus dry maintenance and service. Micronics were selected as the supplier due to a combination of their long-term experience with Ultrasonic Clamp-On technology, competitive pricing and product performance i.e. best value!

The initial Pilot scheme includes seven Micronics Ultraflo - U2000* - Time of Flight - fixed heat meters. The U2000's are used to meter the individual thermal energy consumption of each building within a cluster being fed from a LTHW Energy Centre or central Boiler House, which provides accountability or a check sum for the energy being generated.

It's too early to establish a direct cost-benefit to Kings College. However, improved measurement is the first step towards improved management, Micronics service has been good, the products have performed well and Keith McIntyre the university's Energy Manager is pleased with the progress to-date.

There is significant potential for replication on-site and the project has demonstrated how Clamp-On - Ultrasonic technology could be successfully implemented as a cost-effective solution to improve heat energy measurement and management on similar university sites.

* The U2000 has since been updated to the U3000, see page 12/13 for details.

CASE STUDIES

Springhill Water

Springhill Water use Micronics Clamp-On Flow Measurement for Filter Sizing and Water Flow Surveys.

Sizing water filters and establishing what's flowing where on existing water supplies can be a difficult task but Specialist Water Services supplier – Springhill Water Services have found it a lot easier using Micronics Clamp-On Flow Meters.

Springhill are an established company based in Sowerby Bridge
West Yorkshire and provide a wide range of services relating to commercial and private/domestic water supplies. The key players in the company are water industry professionals with many years experience of designing, installing and maintaining potable water supplies.

The team had previous experience of Clamp-On, Ultrasonic water flow measurement in the 90's and decided to investigate how the technology had progressed and its potential use to establish demand profiles for Filter sizing and flow surveys. Having considered various suppliers they selected the Micronics Portaflow Time of Flight portable flow instrument plus data-logger.

Portable Clamp-On Ultrasonic flow measurement has clear advantages for survey work and Micronics were selected as the supplier due to a combination of their long-term experience with non-invasive, Clamp-On technology, product performance and pre-order assistance.

Manager Matthew Wilson says "The Portaflow has proved to be a valuable tool for demand profiling to size filters and also survey work and leak detection. We're now far more confident in specifying filters including very large installations where it can be difficult and we've also used it as part of our toolkit to locate leaks on a large Bradford campsite and establish peak demand profiles on a Motorway Service area. The product has worked well and the customer service and technical support from Micronics has been good."

Springhill have successfully used the Micronics system to measure and log flow in copper and plastic pipe from 15 to 100mm and they are delighted with the performance they've experienced.

The potential for similar use by other water services suppliers is significant and Springhill's experience is an example of how Clamp-On - Ultrasonic technology can be successfully implemented to gather information on water services installations.

WATER INDUSTRY

INLINE ENERGY METERS

- No moving parts- Ultrasonic technology
- To suit pipes 15mm-50mm DN
- Mains or battery

Ultrasonic Compact Heat Meter

- High metrology
- Advanced functions
- Pre-equipped for communication
- Ease of installation
- Easy reading
- Ultrasonic technology - no moving parts

CF ECHO II

The CF ECHO II is a compact meter of a new generation of ultrasonic heat meters. Electronic data processing gives high precision throughout the entire measurement curve, producing a dynamic range exceeding class C. Flows can be measured from Qp 0.6 to Qp 15 m3/h (DN15 to DN50) with reliable and stable accuracy.Thanks to a complete portfolio of body variants of every size, the CF ECHO II meters are very flexible in use. All hydraulic bodies carry a flanked design helping meter installation.

Applications
Heating and Combined, return and supply positioning, horizontal or vertical.

Benefits
- Accurate measurement of high and low flows.
- Easy reading.
- Pre-equipped for communication. Standards Compliance.
- Class 2.0 acc. EN 1434.
- Env. Class C acc. EN 1434.
- OIML R75 Class 4.
- PTB Class C.
- SP Test ≤ -2%.
- PED compliant.

Advanced Functions

The CF ECHO II provides a number of advanced functions such as data-logging for complex network analysis, double tariff for further billing choices, peak recording and lots more, which are powerful diagnostic aids for network management. All available data are presented on the highly ergonomic and multifunctional display.

Communication Device

The plug and play communication boards open the way for data collection through various reading systems: M-Bus, LON, RF, RS232 or internal modem.

Complementary Product
- GPRS Telemetry systems

CASE STUDIES

Micronics - Flow Measurement and Analysis Services help **Network Rail** in their Survey of Water Services at Paddington Station.

Network Rail

Having been established for many years and subject to considerable development activity over the years the Paddington Station water supply network is understandably vast, complex and to some degree uncharted.

So the task of surveying the site to establish what's flowing where is challenging and further complicated due to the original footprint of the station being reduced over the years, replaced by commercial office development and numerous retail outlets on site, which draw their water from the station supply. However, faced with higher than expected water bills the Paddington Building Services Team of Network Rail was presented with the daunting task.

Having considered various survey options the management team opted for the Flow Measurement and Analysis Services offered by Micronics utilising Micronics expertise with their Portaflow -Time of Flight - portable flow and logging instruments.

Portable Clamp-On Ultrasonic flow measurement has clear advantages for survey work and Micronics were selected as the supplier due to a combination of their long-term experience with non-invasive, Clamp-On technology, product performance and pre-order assistance.

Six Portaflow instruments were utilised in two surveys to gather 24 hour consumption/load profiles for selected Hot and Cold water services including supplies to public conveniences.

The project is the joint responsibility of Building Supervisor - Peter Rogerson and M&E Supervisor Terry St Ledger. Terry St Ledger says the task of identifying what's flowing where in a site like Paddington is an ongoing project. The two Micronics surveys have provided useful information and an insight into what's flowing where, we've made a start but we will need to continue with further investigations over a longer term to realise the benefits.

The project has demonstrated the benefits of Portable Clamp-On Ultrasonic flow measurement and that the option to hire or purchase a service with the necessary expertise for projects of this type is a viable alternative to product purchase.

There is potential for replication on other sites, and the project is an example of how clamp-on ultrasonic technology could be successfully implemented to gather information as part of an overall Water and Wastewater management process on similar sites.

SERVICES AND HIRE

Not sure? Then Hire, we'll even offer to credit the cost of your first week's hire if you buy.

Micronics has a wealth of experience hiring many types of equipment, especially our own. Remember that when you hire Micronics equipment, you are dealing with the manufacturer with all the benefits that brings.

We have a large stock of hire equipment on the shelf and ready to go at any time. If you can get your order to us by 12pm you will have the tools you need next day in the U.K.

Do you need an equipment expert on site? We can provide that too, ask for our Engineer on site service when you arrange your hire.

All units will arrive inspected by our service department and charged up for immediate use.

Maintenance Agreements - Micronics can offer maintenance plans to keep your equipment in top shape and within calibration, talk to us about your needs and we will tailor a plan for you.

Installation/ Commissioning We are able to offer the complete package, from your initial enquiry right through to after sales long term maintenance programs.

Our team of engineers can offer excellent advice from preliminary surveys right through to equipment selection and Installation and Commissioning.

Training - At Micronics we understand that sharing knowledge leads to better value from test equipment.

Contact us for a program that best suits your enterprise.

Engineer on site - Our engineers have a lot of experience using our equipment, you choose the time and date and we'll be there.

Calibration - Keeping an instruments' calibration up to date makes sense, we can offer yearly maintenance programs to make this simple.

The whole solution - Micronics have been supplying solutions for their customers for many years, we can help you too. Tell us what you need and we will have a package that fits.

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