

# The Micronics U-100



At the heart of your modular clamp-on flow and energy monitoring solution.

U-100



U100 Software interface

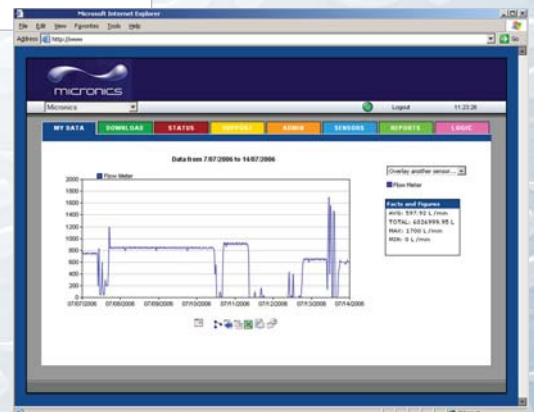
Local Displays



CalecST Heat Meter



Internet Telemetry Monitoring





## U-100

- Application specific.
- Pre-calibrated and scaled.
- No mechanical adjustment required.

**Electronics:-** Cast aluminium housing 150x90x60mm, Waterproof, Dust proof to IP54.

**Operating Temp Range:-** +5°C to +60°C.

**Storage Temp Range:-** -5°C to + 65°C.

**Power:-** 90-260VAC, 50/60Hz or 20-28VDC @5W.

**Outputs:-** 0/4-20mA, Pulse (1per sec max) RS 232 Opto Isolated. Diagnostics and reconfiguration via RS232 port using installed GUI software.

**Pipe Range:-** 50mm to 200mm ID.

**Application Temp Range:-** - 20°C to +80°C.

**Flow Range:-** up to 60L/sec in 100mm pipe.

**Minimum flow:-** 0.3m/sec.

**Typical Accuracy:-** +/- 1 to 3% of reading or 0.1 L/sec whichever is the greatest.

**Repeatability:-** +/- 1% with unchanged sensor position.

**Linearity:-** +/-1% of calibrated range.

## The Micronics U-100

At the heart of your modular clamp-on flow and energy monitoring solution.

The U-100 is a Clamp-On Ultrasonic "Time of Flight" flow meter, suitable for use on small bore pipes from 50mm to 200mm NB, carrying liquids having a Temperature range of +5°C to +80°C.

The clamp-on transducers are contained within a guide rail that is attached to the electronics housing and they are supplied as an integrated factory calibrated unit ready to mount directly on to the pipe. After the complete assembly is clamped to the pipe the spring-loaded transducers are lowered so that they make contact to the pipe surface via a "DRY" greaseless interface or ultrasonic couplant as required.

The meter arrives ready to 'power up' and switch on having been factory calibrated for a particular application, all details of which will have been supplied by the customer.

Current, Pulse or RS232 outputs are available and are factory scaled. These outputs can be re-configured by the user via the RS232 port using a portable PC, should this be necessary.

The operational status of the meter and the flow status are indicated by Red and Green LED's and detailed interrogation of the meter diagnostics is accessible via the RS232 port. All configuration details are held permanently in the built in memory and remain stored during power down.



## The U-100 incorporates many unique features:

- It is simple to install with installation time cut to a matter of minutes
- No longer requires a grease interface between transducer and pipe surface, for most applications.
- Is non invasive and can be easily installed and serviced without the need to cut the pipe.
- Causes absolutely no pressure drop and therefore helps to reduce pump power consumption

Competitively priced, the U-100 can compete favourably with most in-line meters that require extensive pipe work modifications, as installing and / or removing the instrument for servicing does not require pipe drainage, drilling or cutting.

## Applications for the U-100 include:

- Secondary metering in heating, building management and ventilating systems using water borne energy supplies.
- Dosing control and flow monitoring for water treatment plants.
- Non-Invasive metering for super clean liquids in the Semi-conductor, pharmaceutical, food and beverage industries.

# Local Displays / FO12

## General information

### Introduction

The FO12 is a local indicator to display the actual flowrate, total and accumulated total.

The total can be reset to zero by pressing the CLEAR button twice. The eleven digit accumulated total however can not be reset to zero. A wide selection of options further enhance this models capabilities, including Intrinsic Safety for hazardous area applications.



### Display

The display has large 17mm (0.67") and 8mm (0.31") digits which can be set to show flowrate and / or totals. On-screen engineering units are easily configured from a comprehensive selection. The accumulated total can register up to 11 digits and is backed-up in EEPROM memory every minute, just as the running total. As the FO12 has been designed for field mounted applications, a smart display update function has been incorporated. Related to the lower temperatures, the update frequency of the LCD is tuned automatically to achieve a readable display even at -40°C / -40°F.

### Backlight

For those applications where readability during day and night is an issue, a bi-color backlight is available. The background color can be set to green or amber and the intensity can be adjusted from the keyboard. The display is a transfective type, which means that a high contrast reading is guaranteed in full sunlight as well as during the night. This backlight option is also available Intrinsically Safe.

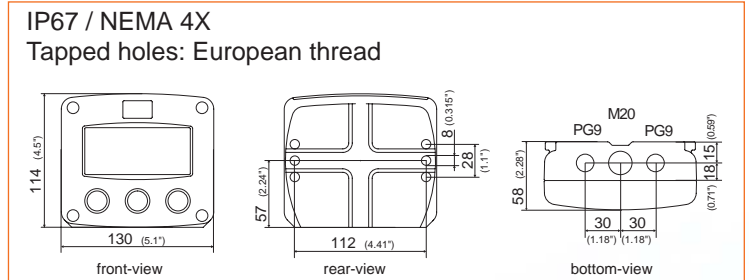
### Configuration

All configuration settings are accessed via a simple operator menu which can be pass-code protected. Each setting is clearly indicated with an alphanumeric description, therefore avoiding confusing abbreviations and baffling codes. Once familiar with one F-series product, you will be able to program all models in the series without a manual. All settings are safely stored in EEPROM memory in the event of sudden power failure.

## Dimensions

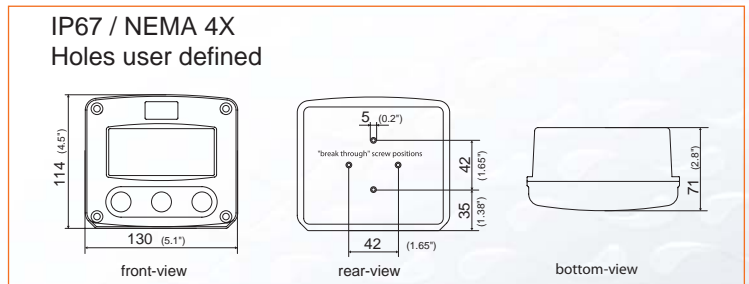
### Enclosure HA

#### Aluminum field mount enclosure



### Enclosure HD

#### ABS wall mount enclosure



## Signal input

The FO12 will accept most pulse and analog input signals for flow or mass flow measurement. The input signal type can be selected by the user in the configuration menu without having to adjust any sensitive mechanical dip-switches, jumpers or trimmers. The analog input version is even available as a 4 - 20mA input loop powered display.

## Power supply

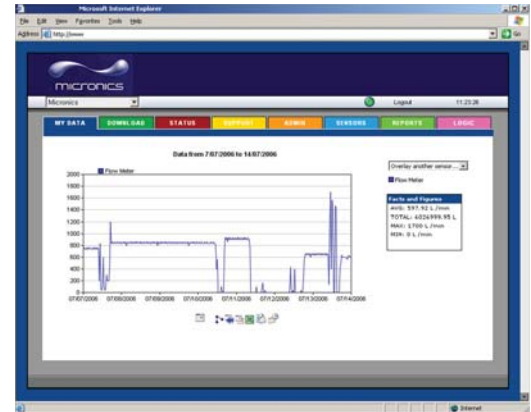
Several power supply options are available to power the FO12 and sensor. Most popular is our battery powered version with a long life lithium battery which will last up to five years. For analog sensors, a 4 - 20mA loop powered version is available as well. Areal sensor supply is offered with the 24V AC/DC or 115 - 230V AC power supply option.



## Wireless Web-based Monitoring and Control

The Outpost Live Datalogger is a complete end-to-end data delivery and analysis package - from your sensors to your desktop. The Outpostcentral.com 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.

Datalogger System



### Applications:

- Industrial monitoring: Levels, flows and more
- Frost alert systems
- Agricultural analysis: soil moisture, leaf wetness, water flow
- Environmental & Weather Stations
- Resource consent & regulatory requirements monitoring

### Features:

- No technical knowledge required,
- No modems, no dialing, no software required
- Simply apply power, and login online to view your live data
- Low power, ultra secure data transfer requirements monitoring

Website Screenshot

Drop down to view different Outposts.

Password protected access from any internet connected PC. No plug-in required.

Check Outpost status and activity log.

Compare different sensors and different time periods.

Adjust sensor sampling rates and add alarm thresholds.

Zoom in / Zoom out graph.

Pan graph view forward / back in time.

Use calendar selector to view arbitrary time periods.

Download data direct to spreadsheet.

### Applications

The CALEC® ST is an energy totalizer with communication capabilities for critical measuring tasks such as those for:

- Heating plants
- Climatic ceilings and thermally-activated building components and those that can be integrated into heating and cooling systems
- Solar energy plants in apartment blocks and other buildings
- Communication with building management systems

### Features

- New: For combined heating/cooling systems
- New: For glycol-based heat carriers
- New: Memory for 60 measurement sets (logger)
- Optional pulsed inputs/outputs
- Battery or mains version
- Optional LON interface, FTT-10A, certified to LONMARK® 3.2
- Freeze function
- Separate, verified plug-in totalizer module



### Your benefits

- Heat and cold measurement
- For cold and solar thermal plants
- For monitoring operations
- With expansion modules
- Optimum LON integration
- Simultaneous read-out from the network
- Cost-savings with subsequent verification

### Standard applications and measuring principle

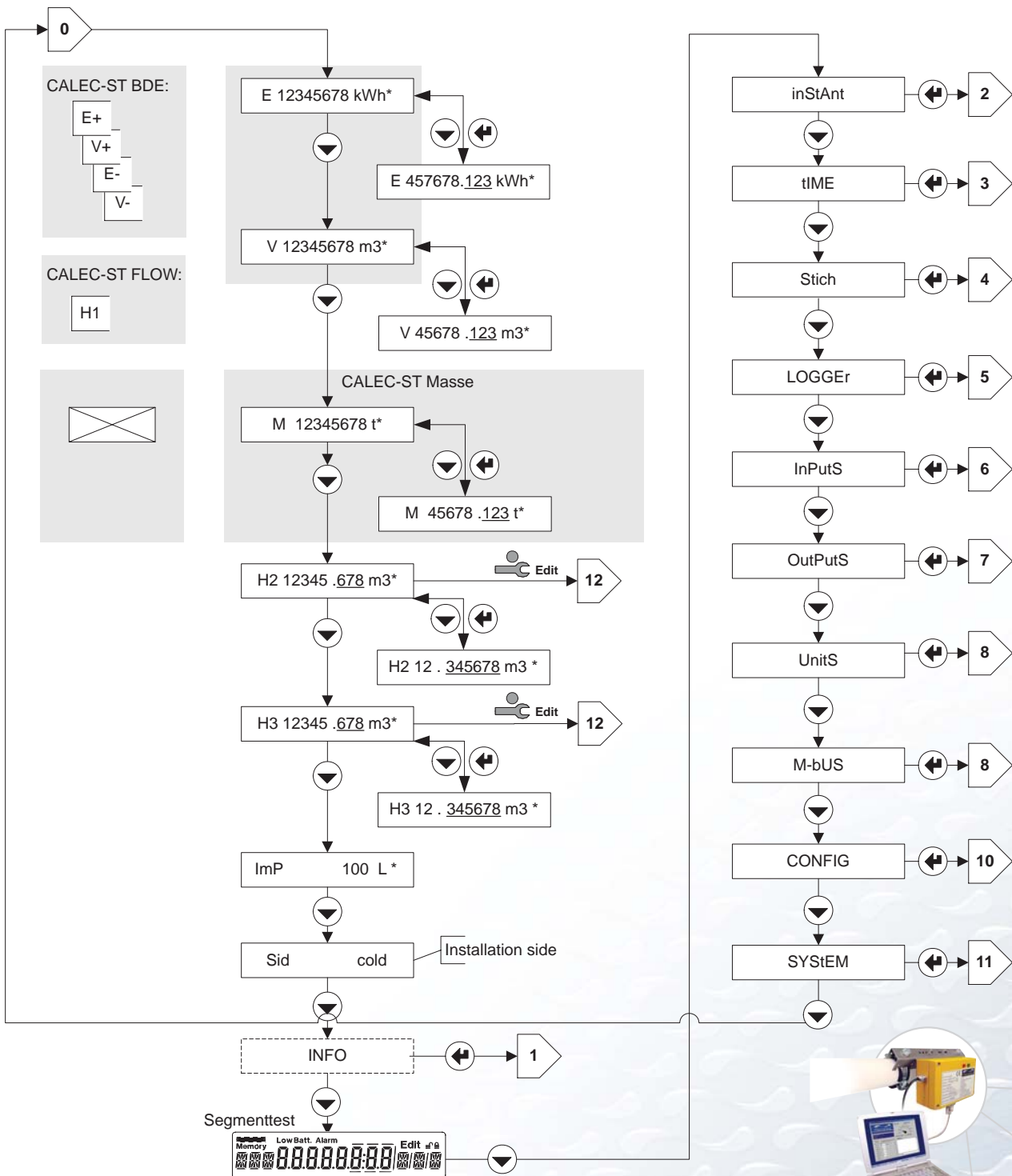
The following individual verified elements are required for a composite heat meter:



- 1 pair of temperature sensors
- 1 flowmeter with pulse signal transmitter
- 1 CalecST (totalizer).

# CALEC<sup>®</sup> ST functions

The following diagram shows all the necessary information required in the main flow loop with short texts given in the sub-loop



Display:	Description:
Info:	Error message
InstAnt:	Actual values temperature power flowrate C-factor density
Time:	Date and time
Stich:	Billing date
LoGGEr:	Data logger memory values
InPutS:	Settings and status of signal inputs
OutPutS:	Settings and status of signal outputs
UnitS:	Setting of units
M-bUS:	M-Bus settings
CONFIG:	Other settings, e.g. for glycol-based heat carriers
SYStem:	System data, e.g. firmware version





Thank you for reading this data sheet.

For pricing or for further information, please contact us at our UK Office, using the details below.



**UK Office**

**Keison Products,**

**P.O. Box 2124, Chelmsford, Essex, CM1 3UP, England.**

**Tel: +44 (0)1245 600560**

**Fax: +44 (0)1245 600030**

**Email: [sales@keison.co.uk](mailto:sales@keison.co.uk)**

Please note - Product designs and specifications are subject to change without notice. The user is responsible for determining the suitability of this product.