

Data Sheet

MICRONICS UX5000

Clamp-on Flow Meter for use in Hazardous Environments



Supplied by

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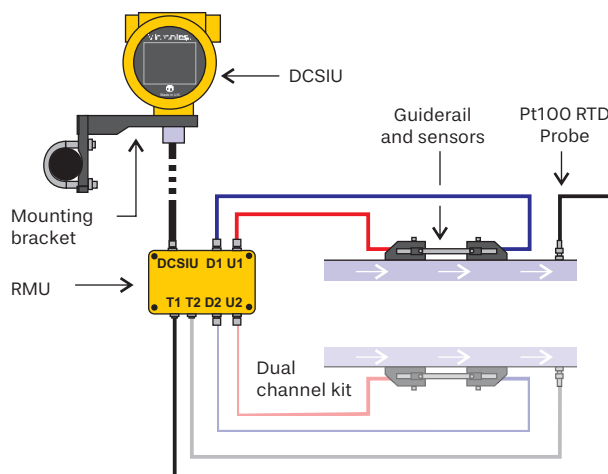
UX5000 Clamp-on Flow Meter for use in Hazardous Environments

FEATURES:

- Non-invasive, efficient, and easy installation, no process downtime
- Certified for use in hazardous areas (Zone 1 & Zone 2)
- Intrinsically Safe Measurement System
- Reliable measurement accuracy
- Separate Display (DCSIU) and Remote Measurement Unit (RMU) allows flexibility in installation
- Cost effective metering for harsh, heavy-duty applications
- Single and Dual Channel Options
- Remote System Setup and Monitoring

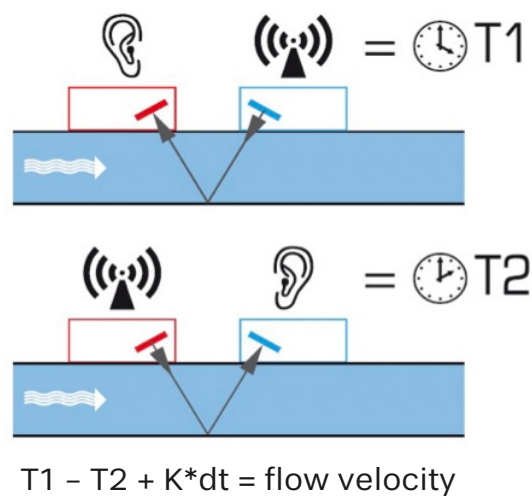
APPLICATIONS:

Applications for the UX5000 are vast. The UX5000 is ideal for harsh, heavy duty industrial applications for measuring flow of liquid in pipes – non-invasively. It is especially well-suited to the chemical, water and oil industries.



MEASUREMENT PRINCIPLES:

The UX5000 uses a cross correlation transit time algorithm to provide accurate flow measurements. An ultrasonic beam of a given frequency is generated and applied to the sensor crystals. This transmission goes first from the downstream sensor to the upstream sensor. The transmission is then made in the reverse direction, being sent from the upstream sensor to the downstream sensor. The speed at which the ultrasound is transmitted through the liquid is increased slightly by the velocity of the liquid through the pipe. The subsequent time difference $T1 - T2$ is directly proportional to the liquid flow velocity.



UX5000 Clamp-on Flow Meter

TECHNICAL SPECIFICATION:

| UX5000 | |
|---------------------------|---|
| Accuracy | Up to 0.5% with Process Calibration |
| Repeatability | ±0.15% |
| Fluid Types | All acoustically conductive liquids with <3% particulates |
| Pipe Material | Many including Steel, Stainless Steel, Copper, Plastic |
| Pipe Diameter (OD) | 2" to 12" (50–300mm) |
| Weight (Shipping) | 12kg |
| Dimensions (Shipping Box) | 547mm x 397mm x 307mm |

| DCSIU | |
|---------------------------------|---|
| Power | Recommended 21–24 VDC, 2W (Internally protected with 500mA 5x20 Glass Fast Acting Fuse) Max 26VDC |
| Equipment Group & Category | Ⓔ II 2 (1) G Ex db [EX ia] IIC T4 Gb (–20°C ≤ Ta ≤ 60°C) |
| Material | Powder Coated Aluminium (Marine Grade) |
| Weight | 2.5kg |
| Size | 206mm x 146mm x 135mm |
| Operational Temperature | –20 to 60°C |
| Entries | ¾" NPT |
| Maximum Cable Distance from RMU | 50m using extensions & up to 250m using junction boxes |
| Analogue Outputs (2) | Active 4–20mA |
| Relay Outputs (3) | Opto-isolated relay outputs volt free (24V AC or DC at up to 400mA) |
| RS485 Serial Communications | Modbus RTU |
| Screen | LCD graphical display |
| Screen Dimensions | 69mm x 50mm |
| Environmental Protection | IP66 (EN 60529) |
| Humidity | 90% RH at 50°C max |
| Maximum Altitude | 2,000 metres |

| RMU | |
|--------------------------------|--|
| Environmental Protection | IP66 (EN 60529) |
| Power | From DCSIU (12V 200mA) |
| Equipment Group & Category | Ⓔ II 2 G Ex ia IIC T4 Gb (–20°C ≤ Ta ≤ 60°C) |
| Material | Powder Coated Aluminium |
| Weight | 0.6kg |
| Size | 160mm x 100mm x 79mm |
| Operational Temperature | –20 to 60°C |
| Temperature Sensor Connections | M8 male waterproof connector |
| DCSIU Connection | M12 male waterproof connector |
| Sensor Connections | TNC waterproof connector |
| Cable Distance from Sensor | 5m standard (10m optional) |
| Humidity | 90% RH at 50°C max |
| Maximum Altitude | 2,000 metres |

| Sensors | |
|----------------------------|--|
| Environmental Protection | IP66 (EN 60529) |
| Equipment Group & Category | Ⓔ II 2 G Ex ia IIC T4 Gb (–20°C ≤ Ta ≤ 60°C) |
| Material | PEEK |
| Weight | 0.2 kg |
| Size | 60mm x 35mm x 30mm |
| Operational Temperature | –20 to 120°C |
| Connection | TNC Waterproof Connector |
| Connection | Sensors must be connected through the RMU to conform with the certification. |
| Flammability Rating | UL94V–0 |
| Humidity | 90% RH at 50°C max |
| Maximum Altitude | 2,000 metres |

| Mounting Fixtures | |
|-------------------|---|
| DCSIU | Pipe mount on nominal 2" bore pipe or wall mount bracket |
| RMU | Pipe mount or wall mount bracket |
| Flow Sensors | Metal guiderail with separation ruler using ultrasonic acoustic gel on the sensors. |

