



The U1000 V2 is an ultrasonic permanent clamp-on flow metering solution for measuring flow rate. This cost effective device can either be used as a stand-alone meter or as an integral part of a control loop.

The U1000 V2 is very simple to install – clamp it on to the pipe, connect it to power and enter the pipe diameter. No expertise or special tools are required.

The "clamp-on" concept makes the installation of the sensors in running systems possible. The pipe does not have to be opened. Compact, robust and reliable – the U1000 V2 was designed for long-term use in industrial applications.

Features

- Large, easy to read graphic display with backlighting
- Easy to install without special tools
- "Clamp-on" design
- Expanded size range ($\frac{3}{4}$ inch to 6 inch)
- Simple to follow programming menu
- Simple quick-start set up procedure
- Compact integral design



Applications

- Ultrapure water measurement
- Flow measurement for heat metering
- Chilled water metering
- Flow measurement for energy metering
- Monitoring of manufacturing processes
- New Water / Glycol Measurement

Specifications

General

Measuring method	Ultrasonic runtime measurement	
Flow range	0.1 m/s – 10 m/s (0.3 ft/s - 32 ft/s), bi-directional	
Accuracy	± 3 % of the flow value with a flow rate > 0.3 m/s (1.0 ft/s)	
Repeatability	±0.5 % of measured value	
Response Time	< 500 ms	
Selectable Flow Units	Velocity	m/sec, ft/sec.
	Volume	l/s, l/min, gal/s, gal/min, USgal/s, USgal/min, m3/min, m3/hr
Selectable totalizer units	l, m3, gals, USgals	
Menu Languages	EN	

Environmental

Operating Temperature	0 °C to 50 °C	32 °F to 122 °F
Storage Temperature	-10 °C to +60 °C	14 °F to 140 °F
Temperature of pipe wall	0 °C to 85 °C	32 °F to 185 °F
Humidity during operation	Max. 90 % relative humidity at +50 °C (122 °F)	

Suitable Pipe Types

Pipe Materials	PVDF, PP-H, PE, PB, ABS, UPVC, CPVC, construction steel, iron, stainless steel 316	
Pipe diameter (d)	d22 - d180 mm*	0.86 - 7 inch* (¼ inch to 6 inch)

Electronics

Power supply	12 to 24 V AC/DC
Power Consumption	Max. 7 VA

Outputs

Analog Output	Range	4 to 20 mA
	Resolution	0.1 % of measurement range
	Load max.	620 Ω
	Insulation	1500 V optically isolated
	Alarm Current	3.5 mA
Pulse Output	Type	Opto-isolated MOSFET volt free contact (NO/NC)
	Pulse sequence	1 – 166 pps user-programmable frequency mode max. 200 Hz
	Pulse width	25 ms standard value, 3 – 99 ms user-programmable
	Max. voltage	48 V AC
	Max. current	500 mA
	Insulation	2500 V optically isolated

Housing and Display

Material	Polycarbonate	
Dimensions	250 x 48 x 90 mm	9.85 x 1.9 x 3.55 inch
Weight	0.5 kg	1.1 lb
Keyboard	Keypad with 4 buttons	
Display	Type	LCD, 2 lines x 16 characters
	Viewing Angle	Min. 30°, Max. 40°
	Active Area	83 x 18.6 mm
Protection class	IP 54	

Shipping Information

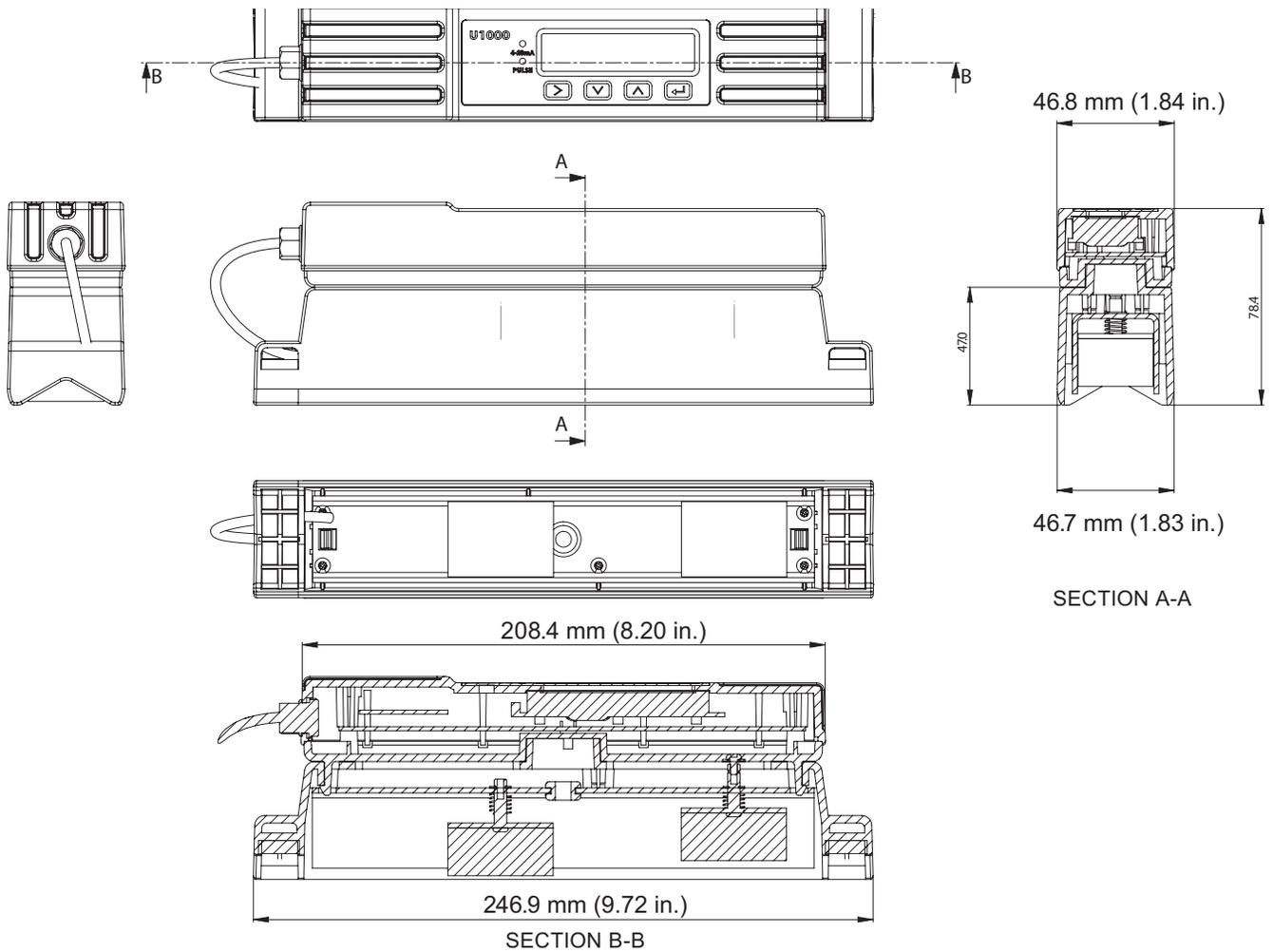
Packet dimensions	290 x 280 x 100 mm	11.4 x 11 x 4 inch
Weight	1.4 kg	0.05 lb
Volume Weight	1.4 kg	0.05 lb

Standards and Approvals

	CE, conforms to RoHS	
Security	BS EN 61010-1:2001	
EMV	BS EN 61326-1:2006	BS EN 61326-2-3:2006
Environment	BS EN 60068-1:1995	
	BS EN 60068-2-1:2007	BS EN 60068-2-2:2007

* Measurable pipe sizes are dependent on pipe material and inner pipe diameter.

Dimensions

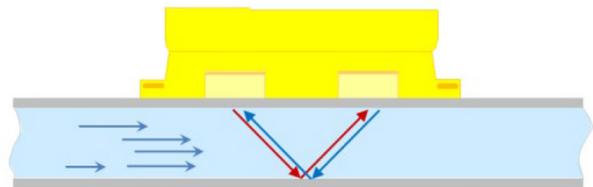


Function

The U1000 V2 functions, as do all current ultrasonic flow meters, according to the path-time principle of ultrasonic waves.

The device is installed directly on a pipe surface and transmits ultrasonic waves back and forth between the two sound transducers. Depending on the flow, a small time difference arises between the two ultrasonic signals – this is proportional to the flow speed.

The U1000 V2 is especially configured for pure water and can be used on PVDF-ABS, PVC, PP, PE, PB-Instaflex, iron and steel pipes. Processes can be monitored directly by a higher-level system via 4 to 20 mA, Modbus, pulse or frequency output

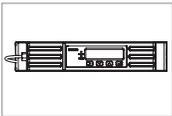


Technical data



No.	Description
1	Power supply (AC/DC)
2	Pipe bracket
3	Electronics module
4	Guide rail
5	User interface
6	Pipe

Ordering Information



Mfr. Part No.	Code	Description
U1000 V2	159 300 300	U1000 V2, 4 to 20 mA & Frequency, d22 - d115 (¾ in. to 4 in.)
U1000 V2	159 300 301	U1000 V2, 4 to 20 mA & Frequency, d125 - d180 (5 in. to 6 in.)
U1000 V2	159 300 302	U1000 V2, Modbus & Frequency, d22 - d115 (¾ in. to 4 in.)
U1000 V2	159 300 303	U1000 V2, Modbus & Frequency, d125 - d180 (5 in. to 6 in.)