



The Ultraflow brings simplicity to the non-invasive measurement of liquid flow, offering the user quick and accurate flow measurement with its easy to follow menu and simple set up. Dry servicing, providing minimum downtime and maximum availability, even in a continuously running system. Compact, rugged and reliable, the Ultraflo has been designed to provide sustained performance in industrial environments.

Features

- Large, easy to read graphic display
- Easy to install
- Clamp-on sensors for dry servicing
- Simple to follow programming menu
- Simple 'Quick Start' set up procedure
- Data logger for 198 k data points (Type U4000)
- Analog, pulse and alarm outputs
- Reynolds number correction



Applications

- HVAC & Energy System Audits
- Pump Verification
- Process Control
- Chemical Addition
- Hydraulic Systems
- Fire Systems
- Leak Detection
- Boiler Testing

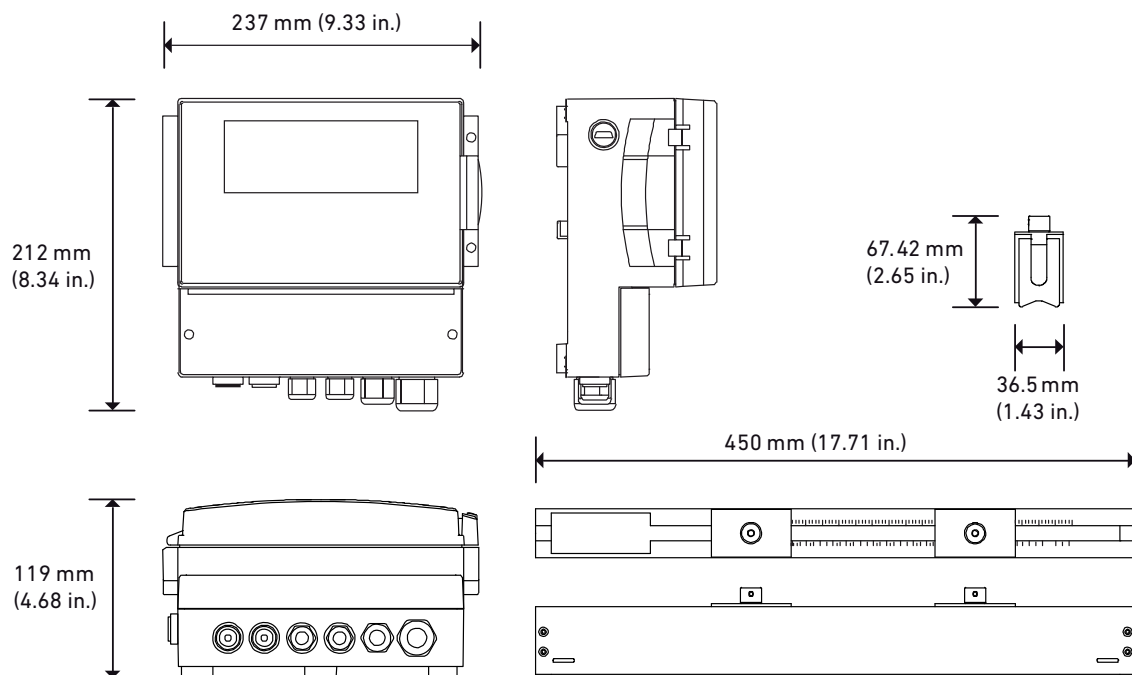
Specifications

General		
DSP Measurement Technique	Transit time	
Flow Velocity Range	0.1 m/s - 20 m/s	
Accuracy	Pipe ID >75 mm	±0.5% to ±3 % of flow reading for flow rate >0.2 m/s
	Pipe ID 13 mm - 75 mm	±3% of flow reading for flow rate >0.2 m/s
Repeatability	±0.5% of measured value or ±0.02 m/s whichever is the greater	
Response Time	< 500 ms depending on pipe diameter.	
Selectable Flow Units	Velocity	m/sec, ft/sec.
	Volume	l/s, l/min, l/h, gal/min, gal/h, USgals/min, USgals/h, Barrel/h, Barrel/day, m³/s, m³/min, m³/h.
Selectable Total Volume Units	liters, m³, gallons, US gallons, barrels	
Total Volume	12 Digits	
Menu Languages	EN, DE, FR, RU, SWE, IT, SP, P, NO, DEN	
Environmental		
Operating Temperature	-20 °C to +50 °C	-4 °F to +122 °F
Storage Temperature	-25 °C to +75 °C	-13 °F to +167 °F
Pipe Wall Temperature	-20 °C to +135 °C	-4 °F to +275 °F
Operating Humidity	Max. 90% relative humidity @ 50 °C (122 °F)	
Applicable Pipe Types		
Pipe Materials	PVDF-SYGEF, PP-PROGEF, PE-ELGEF, PB-INSTAFLEX, ABS, PVC-U/PVC-C, Mild Steel, Ductile Iron, Stainless Steel 316, Copper	
Pipe Dimension (OD)	13 mm to 2000 mm	0.5 in. to 78 in.
Pipe Wall Thickness	1 mm to 75 mm	0.04 in. to 3 in.
Pipe Lining	Applicable pipe linings include Rubber, Glass, Concrete, Epoxy, Steel	
Pipe Lining Thickness	0 mm to 25 mm	0 in. to 1 in.
Electrical		
Supply Voltage	12 - 24 V AC or DC; 86 - 264 V AC (47Hz to 63Hz)	
Power Consumption	Max. 10.5 W	
Outputs		
Analog Output	Range	4 to 20 mA, 0 to 20 mA, 0 to 16 mA
	Resolution	0.1% of full scale
	Load Max.	620 Ω
	Isolation	1500 V Opto-isolated
	Alarm Current	Adjustable between 0–26 mA
	Pulse Output	Type
	Pulse Repetition	1 to 250 pps, user programmable
	Pulse Width	2 to 500 ms, user programmable
	Voltage Max.	48 V
	Current Max.	500 mA
	Isolation	1500 V opto isolated
Alarm Outputs	Type	2 x MOSFET relays
	Voltage Max.	48 V
	Current Max.	500 mA
	Isolation	1500 V opto isolated
	Alarm Function	High / Low flow rate, flow volume or signal error
USB Interface (U4000 only)	Protocol	Supports full speed (12Mbps/sec) data connection
	Software	USB driver software is provided with the package
	Connector	Mini USB
RS-232 Interface (U4000 only)	Protocol	"Serial RS-232 communication including XON/XOFF handshaking"
	Terminal Block	GND, RxD, TxD

Specifications (continued)

Data Logger (U4000 only)			
Data Logged		Log application details, flow rate, unit, time stamp	
Number of Data Points		198 k	
Number of Data Sites		20	
Number of Data Points per Site		No limit (max. 198k)	
Programmable Logging Interval		5 s - 1 h	
Start / Stop		Manually or timer controlled	
Data Download		Via RS232 / USB interface	
Transducer sets			
	Type A	13 - 114 mm pipe O.D. (2 MHz)	
	Type B	115 - 2000 mm pipe O.D. (1 MHz)	
Enclosure and Display			
Material		ABS and aluminium	
Dimensions		230 x 180 x 120 mm	9.0 x 7.1 x 4.7 inch
Weight		1.2 kg	2.65 lb
Keypad		"15 key tactile feedback membrane keypad"	
Display	Type	240 x 64 pixel graphic display, high contrast black-on-white, with backlight.	
	Viewing Angle	Min. 30°, typically 40°	
	Active Area	127 x 34 mm	5 x 1.3 inch
IP Rating		IP 65	
Shipping Weight			
Box Dimensions		480 x 320 x 230 mm	19 x 12.5 x 9 inch
Weight		4.8 kg	10.6 lb
Volumetric weight		5.8 kg	12.8 lb
Standards and Approvals			
	CE, RoHS compliant		
	EMC	BS EN 61326-1:2006	BS EN 61326-2-3:2006
	Safety	BS EN 61010-1:2001	
	Environmental	BS EN 60068-1:1995	
		BS EN 60068-2-1:2007	
BS EN 60068-2-2:2007			

Dimensions

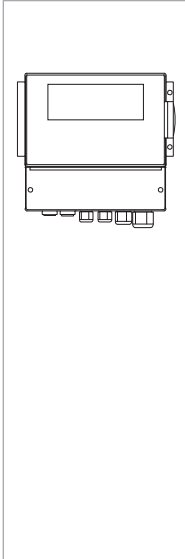


System Overview



- 1 - Instrument with backlit graphic display
- 2 - Guide rail for use with 'A' or 'B' transducers
- 3 - Steel bands used to secure the transducer guide rails to the pipe
- 4 - Transducers 'A-ST' x2 (U3000/U4000A) for use with pipes ranging 13 mm – 114 mm
- 5 - Transducers 'B-ST' x2 (U3000/U4000B) for use with pipes ranging 115 mm – 2000 mm
- 6 - User documentation
- 7 - Acoustic couplant
- 8 - USB cable and RS232-C cable (U4000)
- 9 - Transducer cables (x2) 10 meters long

Ordering Information



Mfr. Part No.	Code	Description
Supply voltage 230 V AC		
U3000A d13-114	159 300 004	Ultraflow U3000, for pipe OD 13 - 114 mm
U3000B d115-299	159 300 006	Ultraflow U3000, for pipe OD 115 - 299 mm
U3000B d300-2000	159 300 075	Ultraflow U3000, for pipe OD 300 - 2000 mm
U4000A d13-114	159 300 008	Ultraflow U4000, for pipe OD 13 - 114 mm, data logger
U4000B d115-299	159 300 010	Ultraflow U4000, for pipe OD 115 - 299 mm, data logger
U4000B d300-2000	159 300 076	Ultraflow U4000, for pipe OD 300 - 2000 mm, data logger
Supply voltage 24 V DC		
U3000A d13-114	159 300 005	Ultraflow U3000, for pipe OD 13 - 114 mm
U3000B d115-299	159 300 007	Ultraflow U3000, for pipe OD 115 - 299 mm
U3000B d300-2000	159 300 077	Ultraflow U3000, for pipe OD 300 - 2000 mm
U4000A d13-114	159 300 009	Ultraflow U4000, for pipe OD 13 - 114 mm, data logger
U4000B d115-299	159 300 011	Ultraflow U4000, for pipe OD 115 - 299 mm, data logger
U4000B d300-2000	159 300 079	Ultraflow U4000, for pipe OD 300 - 2000 mm, data logger