PORTAFLOW 220/330 Portable Ultrasonic Flowmeter   +GF+

Features

• **Large, easy to read graphic display with backlighting**

• **Easy to install thanks to flexible guide rails**

• **Rechargeable battery for up to 20 hours mobile operation**

• **Simple to follow dual function keypad**

• **Simple 'Quick Start' set up procedure**

• **Data logger for 198k data points (Type PF330)**

• **Analog and pulse outputs**

The Portaflow range brings simplicity to the non-invasive measurement of liquid flow. Portaflow offers the user quick and accurate flow measurement with its easy to follow menu and simple set up. Results can be achieved within minutes of opening the case. Compact, rugged and reliable, the Portaflow range has been designed to provide sustained performance in industrial environments.

CE

Applications

• **Potable Water**
• **River Water**
• **Cooling Water**
• **Demineralized Water**
• **Water/Glycol Solutions**
• **Chemicals**
  - Leak Detection
  - Boiler Testing

Specifications

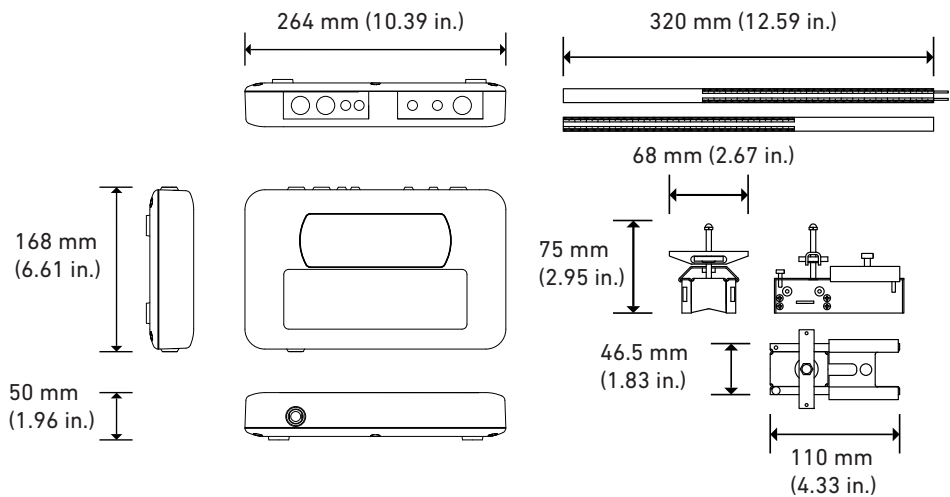## General

DSP Measurement Technique	Transit time	
Flow Velocity Range	0.1 m/s - 20 m/s	
Accuracy	Pipe ID >75 mm	±0.5% to ±2% 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
	All pipe ID's	±6% 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	liter, gallon, US gallons, Barrel, m³	
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 65 °C	-13 °F to 149 °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)	Type PF220	13 mm to 1000 mm	0.5 in. to 39 in.
	Type PF330	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 10 mm	0 in. to 0.4 in.

Electrical

Supply Voltage	9 to 24 V DC
Power Consumption	Max. 10.5 W

Battery

	Technology	5-cell NiMH
	Capacity	3.8 Ah
	Operating Time (typical)	Typically 20 hours continuous with backlight and 4-20mA output OFF
	Recharge Time	6.5 h
	Service Life	>500 charge/discharge cycles

Power supply

Input Voltage	90 to 264 V AC (47 to 63 Hz)
Output Voltage	12 V DC
Output Current Max.	1.5 A
Approvals	UL, CUL, TUV, CB, CE

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 to 26mA
Pulse Output	Type	Digital MOSFET relay
	Pulse Repetition	Max. 500 pps, user programmable
	Pulse Width	5 - 500 ms, user programmable
	Voltage Max.	48 V
	Current Max.	500 mA
	Isolation	1500 V opto isolated
USB Interface (PF330 only)	Protocol	Supports full speed (12Mbits/sec) data connection
	Software	USB driver software is provided with the package
	Connector	Proprietary industrial connector
RS-232 Interface (PF330 only)	Protocol	Serial RS-232 communication including handshaking
	Connector	Proprietary industrial connector (GND, RxD, TxD, DTR, DSR)

Specifications (continued)

Data Logger (PF330 only)	
Data Logged	Log application details, flow rate, total flow, 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 RS-232 / USB interface

Transducer Sets		
Type A	Type PF220 & PF330	13 - 114 mm pipe O.D. (2MHz)
Type B	Type PF220	115 - 1000 mm pipe O.D. (1MHz)
	Type PF330	115 - 2000 mm pipe O.D. (1MHz)

Enclosure and Display			
Material		ABS	
Dimensions		264 x 168 x 50 mm	10.4 x 6.6 x 2.0 inch
Weight		1.1 kg (incl. battery)	2.45 lb
Keypad		16 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 54	

Shipping Weight				
		PF330		PF220
Box dimensions	420 x 390 x 220 mm	16.5 x 15.4 x 8.7 inch	510 x 140 x 440 mm	20 x 5.5 x 17.3 inch
Weight	7.5 kg	16.5 lb	6 kg	13.2 lb
Volumetric Weight	5.7 kg	12.5 lb	5.2 kg	11.5 lb

Standards and Approvals		
CE, RoHS compliant		
Safety	BS EN 61010	
EMC	BS EN 61326 - 1:2006	BS EN 61326-2-3:2006
Power Supply	EN61204 - 3	UL, CUL, TUV, CB, CE

Dimensions

264 mm (10.39 in.)

320 mm (12.59 in.)

68 mm (2.67 in.)

168 mm (6.61 in.)

75 mm (2.95 in.)

50 mm (1.96 in.)

46.5 mm (1.83 in.)

110 mm (4.33 in.)

220 Portable Ultrasonic Flowmeter

1 - Portaflow 220 instrument
2 - Ruled separation bar
3 - Transducers 'A-ST' x2 for use with pipes ranging 13mm – 114mm, or 'B-ST' x2
4 - Guide rail
5 - Chains x2 - 0.5 m long (1.65 ft) for A-ST, or 3.3 m long (10.8 ft) for B-ST type transducers
6 - Transducer cables (x2) 2 metres long
7 - Test block
8 - Acoustic couplant
9 - Output cable
10 - Power supply
11 - Manual (not shown)

The Portaflow 220 equipment is supplied in a Polypropylene carrying case fitted with a foam insert to give added protection for transportation.

330 Portable Ultrasonic Flowmeter

1 - Portaflow 330 instrument with backlit graphic display
2 - Ruled separation bar
3 - Transducers 'A-ST' x2 for use with pipes ranging 13mm – 114mm
4 - Transducers 'B-ST' x2 for use with pipes ranging 115mm – 2000mm
5 - Guide Rail
6 - Chains x2 3.3 m long (10.8 ft)
7 - Transducer cables (x2) 2 metres long
8 - Test block
9 - Acoustic couplant
10 - Output cable
11 - RS-232 cable
12 - USB cable
13 - Power supply
14 - Manual (not shown)

The Portaflow 330 equipment is supplied in a rugged IP67 carrying case fitted with a foam insert to give added protection for transportation.

Ordering Information

Mfr. Part No.	Code	Description
Standard		
PF 220 A	**159 300 002**	Portaflow PF220, for pipe OD 13 mm - 114 mm
PF 220 B	**159 300 003**	Portaflow PF220, type B transducers for pipe OD 50 mm - 1000 mm
PF 330 A+B	**159 300 001**	Portaflow PF330, type A and B transducers for pipe OD 13 mm - 2000 mm, data logger