

Apollo Flow Measurement Ltd
Lowflo Flowmeter Manual
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Installation & Operation of the Lowflo Flowmeter

Note

Read this manual prior to installation

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1 INTRODUCTION

The Lowflo flowmeter is used to measure extremely low flow rates of clean liquids, chemicals, additives, demineralised water, oil and fats. The pulse from the flowmeter is fed into an instrument and can be used for flow rate indication, totalising, blending, dosing, controlling and batching. The flowmeter can be used in hazardous areas. Apollo provide a range of instruments to suit your application.



2 DESCRIPTION

The PVDF or PFA Pelton wheel rotor has stainless steel rods embedded within the tips of the vanes. Tungsten carbide balls are mounted directly into the rotor. These tungsten balls spin in sapphire cups mounted in stainless steel bearing housings. The flow of liquid causes the rotor to turn and a proximity sensor detects the passing of the rotor tips. The speed of the rotor and the frequency of the signal is directly proportional to the flow rate.

3 CONSTRUCTION

The Lowflo has a strong stainless steel body that is corrosion resistant and withstands high pressures. The flowmeter is designed for use on clean liquids although particles up to 200 micrometres can be entrained in the liquid without any effect on the overall performance. The two wire Namur sensor is fitted into the headcap of the flowmeter and is supplied with a 2 metre length of cable.

PLEASE NOTE THAT THE SENSOR IS POTTED INTO THE HEADCAP AND NO ATTEMPT SHOULD BE MADE TO UNSCREW IT.

4 CALIBRATION

All Lowflo flowmeters are individually calibrated with water and are traceable to national standards.

We provide you with a test certificate for each meter showing the number of pulses per litre, which is used to set the instrumentation.

5 INSTALLATION

To achieve the best results from your flowmeter it should be mounted into the pipework with its sensor lying horizontally. The flowmeter should be maintained full of liquid prior to, and throughout measurement.

To prevent clogging it is important that the line is flushed out before installation of the flowmeter.

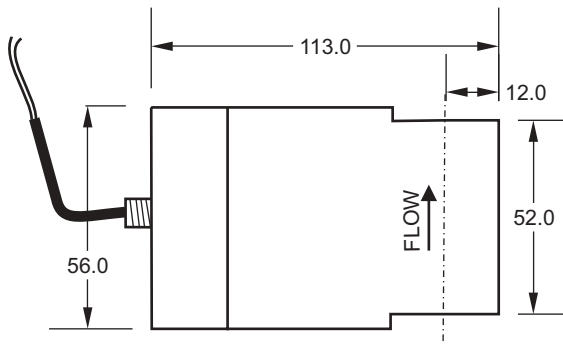
6 FLOWMETER SPECIFICATION

Flow ranges:	1-10 litres/hour 1-25 litres/hour 3-60 litres/hour 2-97 litres/hour 5-150 litres/hour 10-250 litres/hour 20-350 litres/hour * 30-420 litres/hour *
Linearity:	+/- 1% of full scale * +/- 1% of reading
Repeatability:	+/- 0.2% reading
Nominal pulses/litre:	7000 (1-10 litres/hour) 5500 (1-25 litres/hour) 4800 (2-97 litres/hour) 2750 (3-60 & 5-150 litres/hour) 1850 (10-250 litres/hour) 1200 (20-350 litres/hour) 1050 (30-420 litres/hour)
Maximum working pressure:	69 bar
Body connections:	¼" BSP internal
Maximum temp:	100°C
Maximum viscosity:	70 centipoise
Weight:	1.2 Kg

7 MATERIALS OF CONSTRUCTION

Body, cartridge and jet:	316 stainless steel
Headcap:	316 stainless steel
Rotor:	PFA or PVDF
Bearings:	Tungsten carbide balls Synthetic sapphire cups
Gasket:	Mica
O'Rings:	PTFE

8 DIMENSIONS



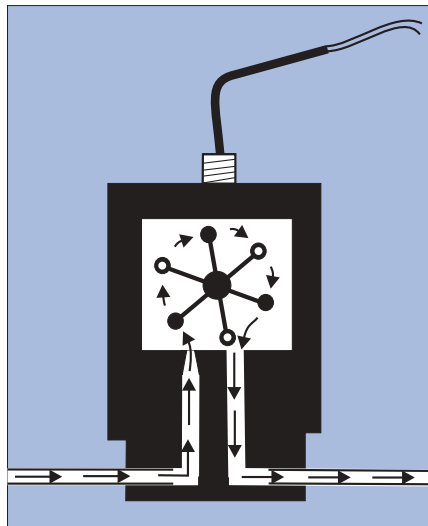
Dimensions in mm

9 SENSOR SPECIFICATION

Type:	Namur
Power supply:	8VDC
Max. Temp:	100°C
Output:	Current pulse
	High level > 3mA
	Low level < 1mA

10 INTRINSICALLY SAFE VERSION

The flowmeter can be used in Intrinsically Safe areas. The Namur sensor is certified to Eex ia IIC T6.



Plan view of the liquid flow.