H SERIES

Propeller Velocity Flowmeter - H33/H33-10

THE H33/H33-10 IS USED TO MEASURE, INDICATE AND RECORD VERY LOW VELOCITIES OF WATER AND OTHER CONDUCTIVE FLUIDS.

H33 - Propeller Probes

The sensor probe has a small impeller at one end, and a BNC connector at the other, joined via a slim, stainless steel tube. The use of two probes allows the range of detectable velocities to be extended up to 300 cm/sec. The indicator is supplied, as standard, with a set of rechargeable batteries. It can also be mains powered via the supplied universal charger.

Description - H33

The measuring head comprises of a 5 bladed PVC rotor mounted on a hardened, stainless steel spindle terminated into burnished conical pivots, resulting in minimal frictional resistance. This is all assembled and enclosed in a brass shrouded frame. An insulated gold wire contained within the tube terminates 0.1 mm from the rotor blade tips. When the rotor is revolved by the movement of a conductive liquid, the passage of the rotor blades past the gold wire tip slightly varies the measurable impedance between the tip and the tube. This variation is used to modulate a 15 kHz carrier signal, generated within the indicating instrument which in turn is applied to the electronic detector circuits. All components have been chosen carefully to give a long reliable life with minimal changes in calibration.

Automatic compensation is made for changes in liquid conductivity. Following amplification and filtering out of the carrier frequency, a square wave signal is obtained. In the digital indicator the pulses are counted over a known time period to obtain a digital reading.

Probes

- **H33-1:** Standard low speed velocity probe for the range 5.0 to 150 cm/sec
- **H33-2:** Standard high speed velocity probe for the range 60 to 300 cm/sec
- **H33-3:** 90 Degree angled probe to measure vertical velocities over the range 5.0 to 150 cm/sec

Technical Details H33

Rotor:	11.6 mm diameter, machined plastic (balanced)
Spindle:	Hardened stainless steel with conical ends
Bearings:	Synthetic sapphire vee jewels
Cage:	Heavy Chromium plated brass
Stem:	Stainless steel
Electrical connector:	Co-axial
Weight:	0.20kg
Immersion length:	420mm maximum

Accessories

H1-11: Adjustable Tripod stand with mountings

Packed and crated shipping specifications

Product	Volume	Gross Weight
H33/1/2/3:	0.1m^3	2kg
H33-10:	0.1m^3	5kg

H33-10 - Digital Indicator

The digital indicator has been developed for use with the miniature propeller probes H33-1/2/3 where laboratory or field measurement of water velocity is required.

Description - H33-10

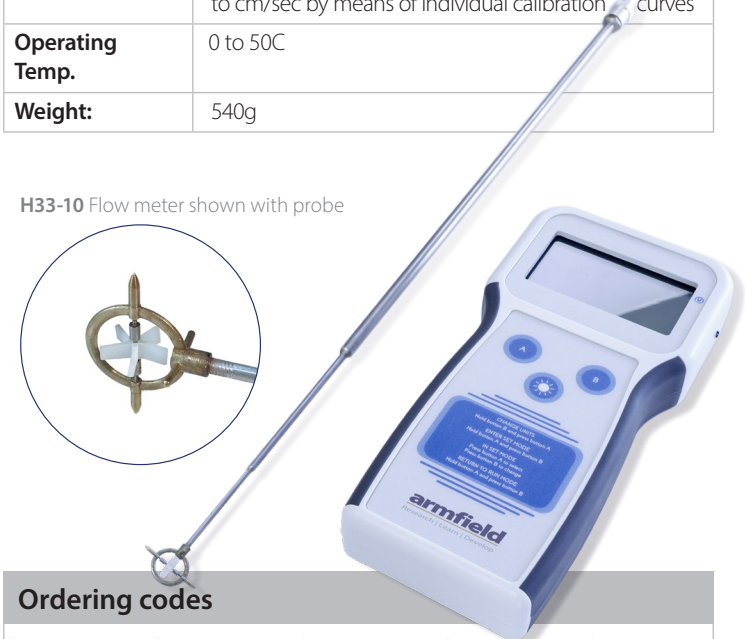
The H33-10 digital indicator provides all required functions in one compact unit. The power supply/charger is universal and incorporates a range of mains type fittings to enable the unit to be used virtually anywhere in the world at 110 or 230 V a.c. 50 or 60 Hz. The indicator is supplied with a full set of Nickel metal hydride batteries.

The indicator can read frequency over 1 second or 10 second, can be set to count frequency, or can be programmed to read velocity directly in cm/sec using data from the individual probes calibration certificate. A 0 to 5 V DC output is available for driving data loggers and chart recorders and this can be programmed to any frequency range.

Technical Details H33-10

Power:	Nickel metal hydride battery or mains power
Battery life:	Typically 300 hrs on full charge
Display:	Dot matrix LCD display
Controls:	On/off and A + B buttons
Input:	BNC
Output Socket	3.5 mm Aux Jack
Output	0.5 V DC - 100 MS update rate
Velocity Range	5 to 150 & 60 to 300 cm/sec using two sensing probes
Accuracy	± 1.5% of true velocity
Scaling	Digital indicators scaled in HZ or cm/sec, Conversion to cm/sec by means of individual calibration curves
Operating Temp.	0 to 50C
Weight:	540g

H33-10 Flow meter shown with probe



Ordering codes

▶ H33 ▶ H33-1 ▶ H33-2 ▶ H33-3 ▶ H33-10

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Issue: 4
URL: http://www.armfield.co.uk/h1
Applications: ChE ME CE IP