



## Wave Probe System - H40-MKII

### H40-MKII - Wave Probe System

**The H40-MKII is suitable for use in:**

**2D flume:** For this configuration, the wave probes are supplied with a mounting block allowing the calibration stem, that is fixed to the wave probe head, to be attached to any vertical surface.

**3D wave basin:** For basins, The H40-MKII-7 Twin Wire Wave Probe Tripod is used for mounting the 600 to 1200 mm wave probes. For shallow water up to 1 m depth, a smaller stand to fit 300 mm wave probes is available.

### Description - H40-MKII

The H40-MKII Wave Probe Case contains the signal conditioning circuitry for up to eight wave probes and a network connection to allow a computer to configure the probes. If more than eight probes are required to be used at the same time in the physical model then multiple cases can be linked together, so that only one computer is required for configuration.

The input connections for the wave probes are provided using 4mm sockets on one face of the case. The opposite face has connections to allow the device to be directly connected to a computer via an Ethernet cable and to an existing data acquisition system using analogue signal outputs. The unit is powered from an external 24Vdc laptop-style power supply.

The wave probe case is set up using a built-in web page which is accessed from the PC using the network connection. Whilst testing is underway the data acquired by the instrument is also transmitted over the network connection for collection by appropriate software(not supplied by Armfield).

The wave probe operates by measuring the current that flows between two stainless steel wires that are immersed in water. This current is converted to an output voltage that is directly proportional to the immersed depth. Each wave probe case contains the energising and sensing circuits for the operation of eight wave probes and provides an output voltage (0-5V) for all eight channels on a 16-way output connector. In order to avoid polarisation effects at the probe, a high frequency square wave is used to energise the probe.

Adjacent probes are set to different frequencies to allow probes to be used close together without causing any interference. Each wave probe channel contains circuitry designed to compensate for the resistance of the cable that connects the probe to the wave probe unit. Without this compensation, the output of the wave probe monitor would be non-linear.

The probe output voltage is converted to a digital reading using an analogue to digital converter and the readings are batched and transmitted over the network in packets of data at a rate of 100 samples per second. The configuration process allows the user to set the output level for a given initial probe immersion. This enables the user to scale the output, from zero (no water over probe) to maximum output for a desired full scale immersion.

The wave probes comprise two parallel stainless steel rods with a plastic head and foot. The head is fixed to the calibration stem and a mounting block is supplied that allows the calibration stem to be fixed to any vertical surface.

### Overall dimensions

Length 250mm / Width 100mm / Height 40mm

### Packed and crated shipping specifications

<b>H40-MKII</b>	0.1m <sup>3</sup>	3kg
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### Features / benefits

- ▶ Extremely linear output
- ▶ No hysteresis
- ▶ Reliable, proven design, easily calibrated
- ▶ Longer distances from the data acquisition PC can be achieved by linking two wave probe cases together
- ▶ Supplied with 8 channels as standard
- ▶ Data can be logged directly into a computer via the network link

### Technical specification (Wave probe case)

<b>Case configuration:</b>	8 channels (wave probes)
<b>Output signals:</b>	EtherNET digital output comms cable network to data acquisition PC 0-5 V via 16-wayDC connector
<b>Excitation frequency:</b>	3 kHz to 11 kHz
<b>Filter band width:</b>	-3 dB at 2.0Hz
<b>Supply voltage:</b>	220 or 110 V ±10% 40-60 Hz
<b>Trigger function:</b>	+5 V input signal trigger

### Technical specification (Wave probe)

<b>Active working range:</b>	300, 600, 900, 1200mm
<b>Probe diameter (300mm):</b>	1.6mm
<b>Probe diameter (600, 900, 1200mm):</b>	6.0mm
<b>Probe cable length:</b>	30m (Supplied)

### Requirements

### Scale

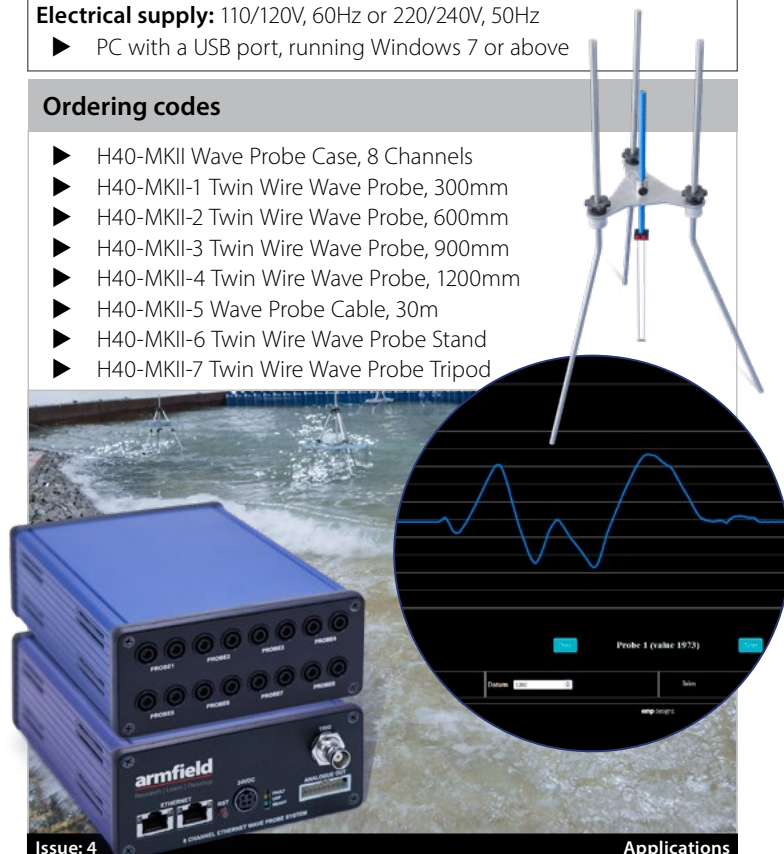


**Electrical supply:** 110/120V, 60Hz or 220/240V, 50Hz

- ▶ PC with a USB port, running Windows 7 or above

### Ordering codes

- ▶ H40-MKII Wave Probe Case, 8 Channels
- ▶ H40-MKII-1 Twin Wire Wave Probe, 300mm
- ▶ H40-MKII-2 Twin Wire Wave Probe, 600mm
- ▶ H40-MKII-3 Twin Wire Wave Probe, 900mm
- ▶ H40-MKII-4 Twin Wire Wave Probe, 1200mm
- ▶ H40-MKII-5 Wave Probe Cable, 30m
- ▶ H40-MKII-6 Twin Wire Wave Probe Stand
- ▶ H40-MKII-7 Twin Wire Wave Probe Tripod



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URL: <http://www.armfield.co.uk/h1>

Applications

ChE ME CE IP

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