

A photograph of the Vectrino acoustic velocimeter, a long, thin, silver-colored probe with a black base and a three-pronged top. The word "Vectrino" is visible on the black base.

No longer available.

Sample 3D velocity at up to 200 Hz for use in hydraulic models and laboratory flumes

The Vectrino is a high-resolution acoustic velocimeter used to measure 3D water velocity fluctuations within a very small sampling volume and at sample rates of up to 200 Hz. It can be applied in a variety of environments, from hydraulic labs - where it is regarded as standard equipment - to the ocean. It is ideal for near-boundary flow measurements or to capture any highly dynamic phenomena in a hydraulic tank.

Highlights

- ✓ Hydraulic models and flumes
- ✓ Inexpensive alternative to laser Doppler velocimeter
- ✓ 200 Hz maximum sampling rate

Applications

- ✓ 3D flow measurements in laboratory flumes
- ✓ Flow measurements near boundaries and in areas that are difficult to access
- ✓ Flow measurements in physical models in hydraulic laboratories
- ✓ Measurements of laboratory flume bottom changes as a function of time

Technical specifications

→ Water velocity measurements

| | |
|--|--|
| Maximum profiling range | N/A |
| Distance from probe | 0.05 m, 0.1 m (field probe) |
| Sampling volume diameter | 6 mm |
| Sampling volume height (user-selectable) | 3-15 mm |
| Cell size | N/A |
| Velocity range* | ±0.03, 0.1, 0.3, 1, 2.5, 4 m/s (software-selectable) |
| Adaptive ping interval | N/A |
| Accuracy | ±0.5% of measured value ±1 mm/s |
| Velocity precision | N/A |
| Sampling rate (output) | 1-25 Hz (Std firmware), 1-200 Hz (Plus firmware) |
| Internal sampling rate | N/A |

- The velocity range is not the same in the horizontal and vertical direction. Please refer to the configuration software.

→ Distance measurements

| | |
|---------------|-----|
| Minimum range | N/A |
| Maximum range | N/A |
| Cell size | N/A |
| Accuracy | N/A |
| Sampling rate | N/A |

→ Echo intensity

| | |
|--------------------|--------------|
| Acoustic frequency | 10 MHz |
| Resolution | Linear scale |
| Dynamic range | 25 dB |

→ Sensors

| | |
|---------------------------|------------------------------|
| Temperature: | Thermistor embedded in probe |
| Temp. range | -4 to +32 °C |
| Temp. accuracy/resolution | 1 °C/0.1 °C |
| Temp. time response | 5 min |
| Compass: | N/A |
| Accuracy/resolution | N/A |
| Tilt: | N/A |
| Accuracy/resolution | N/A |
| Maximum tilt | N/A |
| Up or Down | N/A |
| Pressure: | N/A |

→ Sensors

| | |
|--------------------|-----|
| Standard range | N/A |
| Accuracy/precision | N/A |

→ Analog inputs

| | |
|---|-----|
| No. of channels | N/A |
| Supply voltage to analog output devices | N/A |

→ Data recording

| | |
|----------------------|-----|
| Capacity (standard): | N/A |
| Data record | N/A |

→ Real-time clock

| | |
|----------------------------|-----|
| Accuracy | N/A |
| Backup in absence of power | N/A |

→ Data communications

| | |
|-----------------------------|--|
| I/O | RS-232 |
| Communication baud rate | 300-115 200 Bd |
| Recorder download baud rate | N/A |
| User control | Handled via "Vectrino" software, ActiveX® function calls, or direct commands |
| Analog outputs | 3 channels standard, one for each velocity component |
| Output range | 0-5 V, scaling is user-selectable |
| Synchronization | RS-485, start on sync, sample on sync, transmit on sync (Plus Firmware) |

→ Connectors

| | |
|----------|--------------------------------------|
| Bulkhead | MCBH-12-FS, bronze |
| Cable | PMCIL-12-MP - see also options below |

→ Software

| | |
|-----------|---|
| Functions | Deployment planning, instrument configuration, data retrieval and conversion (for Windows®) |
|-----------|---|

→ Multi unit operation

| | |
|----------|---|
| Software | Polysync |
| I/O | RS 232-USB support for devices with 1, 2, 4, and 8 serial ports |

→ Power

| | |
|---------------------------|------------------------------------|
| DC input | 12-48 V DC |
| Maximum peak current | 2.5 A at 12 V DC (user-selectable) |
| Max. consumption | 1.5 W at 200 Hz |
| Typical consumption, 4 Hz | N/A |
| Sleep consumption | N/A |
| Transmit power | N/A |

→ Batteries

| | |
|--------------------------|-----|
| Battery capacity | N/A |
| New battery voltage | N/A |
| Data collection capacity | N/A |

→ Environmental

| | |
|-----------------------|---------------------------|
| Operating temperature | -4 to +40 °C |
| Storage temperature | -15 to +60 °C |
| Vibration | IEC 60068-1/IEC60068-2-64 |
| Depth rating | 20 m |

→ Materials

| | |
|----------------|--|
| Standard model | POM housing. Stainless steel (316) probe and fasteners |
|----------------|--|

→ Dimensions

| | |
|------------------|--|
| Maximum diameter | 66 mm |
| Maximum length | 350 mm (housing only), 365 mm (fixed stem) |

→ Weight

| | |
|-----------------|-----------------------------------|
| Weight in air | 1.2 kg (1.3 kg with field probe) |
| Weight in water | Neutral (0.1 kg with field probe) |

→ Options

4-beam down-looking probe or side-looking probe. Fixed stem or 1 m flexible cable

10, 20, 30 or 50 m cable with Impulse underwater connector

RS 232-USB converter (one-to-one, four-to-one or eight-to-one)

Standard or Vectrino Plus firmware

Combined transportation and storage case