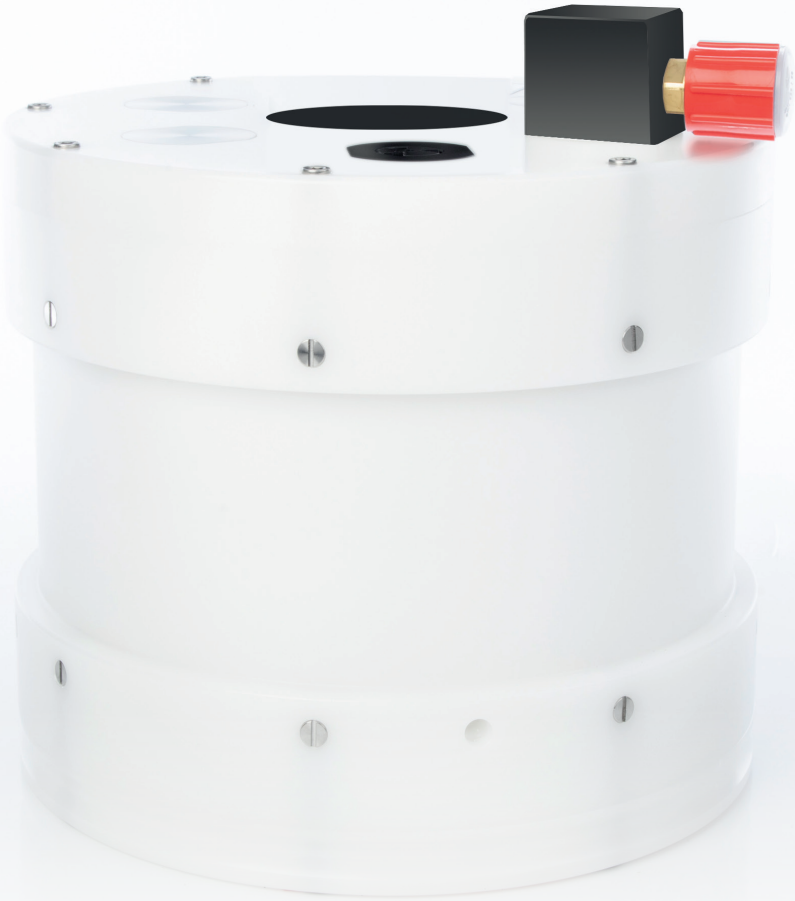

DATA SHEET

MIDAS WTR

Wave and Tide Recorder

The MIDAS WTR Wave Recorder uses the proven Linear Wave Theory wave analysis method of measurement for shallow water deployment (20m maximum water depth). The MIDAS WTR benefits from Valeport's latest sensor measurement technology, together with 64 bit data processing, and an improved range of sampling options. Fast data upload, quick-change battery carousel and intuitive operating software make the MIDAS WTR one of the most versatile yet easy to use pressure based wave recorders available.

Product Details

- WAVE RECORDERS
- TIDE GAUGES
- OPTICAL
- WAVELOG EXPRESS SOFTWARE

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VALEPORT

Sensors

The MIDAS WTR is fitted with piezo-resistive pressure sensors, and a fast response PRT temperature sensor as standard. Note that whilst the piezo-resistive sensor offers a higher absolute accuracy, the quality of wave data owes more to deployment location and sampling pattern than to sensor performance. Optional additional sensors include Conductivity and Turbidity.

Sensor	Type	Range	Accuracy	Resolution
Pressure (high accuracy)	Piezo-Resistive	100 dBar (90m water)	+/-0.01%	0.001%
Temperature	PRT	-5 to +35oC	+/-0.01oC	0.005oC
Conductivity (optional)	Inductive Coils	0 – 80 mS/cm	+/-0.01 mS/cm	0.004 mS/cm
Turbidity (optional)	Seapoint STM	0 – 2000 FTU	+/-2%	0.005% Scale

Data Acquisition

In order to correctly measure wave activity, Linear Wave Theory requires a specific number of data points to be sampled over a period of time. These data points are then processed on board the instrument to generate an accurate summary of the wave activity during the measured period. The MIDAS WTR therefore operates in a strict pattern of "sample, process, sleep", with the user controlling the number of samples and the sampling rate, together with the duration of the sleep period. This may be minimised for almost continuous sampling, but obviously at the expense of battery and memory usage.

Sample Rate	1, 2, 4 or 8Hz
No of Samples	Powers of 2, 128 - 4096 (more samples = better data)
Cycle Time	Minimum cycle time is nearest whole number of minutes after processing has finished
Delay Start	Instrument can be programmed to begin sampling at a specific time
Conditional	Wave Sampling only occurs if pressure activity exceeds a defined level

Electrical

Internal	32 x D cells, 1.5V alkaline or 3.6V lithium
External	9 – 30V DC
Power	0.7W (sampling), <1mW (sleeping)
Battery Life	Depends on sampling setup, typically: >2 months operation (alkaline) >5 months operation (lithium)
Connector	SubConn Titanium MCBH10F

Software

System is supplied with WaveLog Express Windows based PC software, for instrument setup, data extraction and display. WaveLog Express is license free.

Communications

The instrument will operate autonomously, with setup and data extraction performed by direct communications with PC before and after deployment. It also operates in real time, with a choice of communication protocols for a variety of cable lengths, all fitted as standard and selected by pin choice on the output connector:

Standard

RS232	Up to 200m cable, direct to serial port via USB adaptor
RS485	Up to 1000m cable, addressable half duplex comms

Optional FSK

2 wire power & communications up to 6000m of cable

Baud Rate	2400 - 115200 (FSK fixed at 38400, USB 460800)
Protocol	8 data bits, 1 stop bit, No parity, No flow control

Physical

Materials	Acetal housing, optional stainless steel (316) seabed deployment frame
Depth Rating	Housing rated to 500m Note: pressure sensor may be less
Size	300mmØ x 290mm deep
Weight	12kg
Frame	940 x 940 x 420mm x 35kg

Memory

The MIDAS WTR is fitted with 64Mb solid-state non-volatile FLASH memory. Total capacity depends on setup. User may save any or all of the following:

- Raw sensor data from each burst
- Summary statistics of wave burst
- Tide & additional sensor data
- Spectral analysis of wave burst.

If all data is saved, memory will typically record over 4000 data bursts. Sampling once per hour, this is over 5 months of data.

Ordering

0730033	MIDAS WTR Wave Recorder, piezo-resistive type Supplied with: · SubConn switch plug · 3m communications lead · USB adapter · WaveLog Express software · Manual, tool kit and transit case
0730SA2	Seabed mooring frame