VALEPORT
MONITOR CTD

GENERAL DESCRIPTION

The Monitor CTD has been developed from Valeport's MIDAS CTD, utilising the same accurate, robust sensors and synchronised sampling technique but packaged as a smaller, lightweight unit to suit small boat or shallow water applications.

Sensors
The MONITOR CTD is fitted with Valeport's low external field conductivity sensor, a fast response PRT temperature and strain gauge pressure transducer.

Conductivity
Range:	0-80 mS/cm
Resolution:	0.002mS/cm
Accuracy:	+/- 0.01mS/cm

Temperature
Range:	-5°C to +35°C
Resolution:	0.005°C
Accuracy:	+/-0.01°C

Pressure
Range:	50 Bar standard
Resolution:	0.005% range
Accuracy:	+/- 0.1% range

Data Acquisition
The MONITOR CTD uses the concept of distributed processing, where each sensor has its own microprocessor controlling sampling and calibration of readings. Each of these is then controlled by a central processor which issues global commands and handles all the data. This means that all data is sampled at precisely the same instant, giving superior profile data.

Sampling Modes
Continuous:	Regular output from all sensors at 1,2,4 or 8Hz
Burst:	Regular sampling pattern, where instrument takes a number of readings then sleeps for a defined time.
Trip/Profile:	Data is output as a chosen parameter changes by a set value, usually pressure for profiling.
Conditional:	Instrument sleeps until a selected parameter reaches a set value.
Delay:	Instrument sleeps until predefined start time.

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
RS485	Up to 1000m cable, addressable half duplex comms.
RS422	Up to 1500m cable, addressable full duplex comms.

Option
USB	For rapid upload or laptops without serial port
Baud Rate:	2400-115200 (USB 460800)
Protocol:	8 data bits, 1 stop bit, no parity, no flow control

Electrical
Internal:	8 x C cells, 1.5V alkaline or 3.6v lithium
External:	9-30vDC
Power:	0.6W(sampling), <1mW (sleeping)
Battery Life:	<100 hours operation (alkaline)
	<250 hours operation (lithium)
Connector:	Subconn Titanium MCBH10F

Memory
The MONITOR CTD is fitted with 16Mb solid state non-volatile FLASH memory. Total capacity depends on sampling mode; continuous and burst modes have a single time stamp at the start of the file; trip mode (profiling) stores a time stamp with each reading. A single line of CTD data uses 6 bytes and a time stamp uses 7 bytes.
Continuous:	>2,750,000 data points
Profile:	>1,200,000 data points (>600 profiles to 500m)

Physical
Material:	Aceal housing, polyurethane, polycabonate and composite sensor parts, stainless steel (316) cage
Depth Rating:	500m
Instrument Size:	88mmØ x 540mm long
Cage Size:	640 x 140 x 120mm
Weight (in cage):	7.5kg (in air), 4.5kg (in water)
Shipping:	160 x 460 x 1020mm, 25kg

Software
System supplied with DataLog Express Windows based PC software, for instrument setup, data extraction and display. DataLog Express is licence free.

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