



## MIDAS CTD



The MIDAS CTD is an accurate, robust CTD Profiler. As well as using Valeport's high stability conductivity sensor, which maintains performance at extreme temperatures and pressures, the MIDAS CTD is fitted with a high accuracy 0.01% pressure sensor as standard. It also features our unique synchronised sampling technique to ensure that all sensors are sampled at exactly the same time for perfect profiles. Titanium construction and a variety of communications methods make the MIDAS CTD ideal for real-time or autonomous profiling in virtually all conditions.

### Sensors

The MIDAS CTD is fitted with Valeport's high stability conductivity sensor, a high accuracy temperature compensated piezo-resistive pressure transducer, and a fast response PRT temperature sensor.

#### 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:* 300 or 600 Bar  
*Resolution:* 0.001% range  
*Accuracy:* ±0.01% range

### Data Acquisition

The MIDAS 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 quality 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 via USB adaptor  
*RS485* Up to 1000m cable, addressable half duplex comms

#### Options

*FSK* 2 wire power & comms up to 6000m cable (cable dependant)  
*Baud Rate:* 2400 - 115200 (FSK fixed at 19200, USB 460800)  
*Protocol:* 8 data bits, 1 stop bit, No parity, No flow control



### Memory

The MIDAS CTD is fitted with 16Mb solid state non-volatile FLASH memory. Total capacity depends on sampling mode; continuous & 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:* >2,700,000 data points  
*Profile:* >1,200,000 data points (>100 profiles to 6000m).

### 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 MCBH10F

### Physical

*Materials:* Titanium housing, polyurethane sensor components, stainless steel (316) cage  
*Depth Rating:* 6000m (may be limited by pressure sensor)  
*Instrument Size:* 88mmØ x 665mm long  
*Cage Size:* 750 x 140 x 120mm  
*Weight (in cage):* 11.5kg (in air), 8.5kg (in water)  
*Shipping:* 95 x 17 x 49cm, 24kg

### Software

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

### Ordering

0650003 MIDAS CTD Profiler, supplied with deployment cage, Subcon switch plug, 3m communications lead, USB adaptor, DataLog Express software, manual, tool kit and transit case.  
 0400002 16 Mbyte memory upgrade (max 64 Mbyte)  
 0400EA5 FSK modem adaptor  
 TB0400FSK Probe board set required for FSK operation  
 0400EA9 RS485 communications adaptor  
 0400EA6 Advanced Y lead for RS485 operation

Datasheet Reference: MIDAS CTD version 2A, Feb 2011