fastCTD Profiler

An evolution of the miniCTD, the fastCTD Profiler is designed to deliver the highest quality CTD casts at fast drop rates. A conductivity cell designed for optimum flow-through, a fast-response thermistor temperature sensor and a 0.01% pressure sensor synchronously sampling at up to 32Hz deliver the highest quality profiles in a lightweight and robust package.

Add in an integral Fluorometer based on Valeport's new Hyperion range, an optional Bluetooth communications module and the fastCTD Profiler offers a unique and versatile solution.

Sensors

Conductivity

Range:	0 – 80 mS/cm
Resolution:	0.001mS/cm
Accuracy:	±0.01mS/cm
Response:	30 milliseconds

Temperature

Range:	-5°C to +35°C
Resolution:	0.001°C
Accuracy:	±0.01°C
Response:	50 milliseconds

Pressure

Range:	50, 100, 200, 300 or 600 Bar
Resolution:	0.001% full scale
Accuracy:	±0.01% full scale
Response:	1 millisecond

Fluorometer (Optional)

Parameter*:	Chlorophyll a	Fluorescein	Rhodamine
Excitation:	470nm	470nm	520nm
Detection:	696nm	545nm	650nm
Dynamic Range:	0-800 µg/l	0-500 ppb	0-1000 ppb
	(with two gain settings dependent on fluorophore)		
Detection limit:	0.025 µg/l	<0.01ppb	<0.01ppb
Linearity:		0.99 R2	
Response Time:	Dependent on operational mode		

*contact Valeport for other optical instrument options

Electrical

Internal:	1x D cell - 1.5V Alkaline or 3.6V Lithium
External:	if fitted with a connector 9 – 28V DC isolated
Power:	<250mW
Connector:	SubConn MCBH10F (if fitted)

Sampling Modes

Continuous:	Regular and synchronous data collection from all sensors up to 32Hz
Profile:	Data is logged as the instrument descends (or rises), by a user defined pressure difference, through the water column.
Rapid:	Once the instrument is set to run mode no data is logged until a programmed trigger depth is reached (for example, 2 metres below the surface). Completely programmable, the device can be set to record down cast data only, for example, when the probe stops descending and rises by a defined amount logging is stopped.

fastCTD Profiler with optional optical sensor

Communications

The instrument is designed to operate autonomously, with setup and data extraction performed over a Bluetooth connection with a PC before and after deployment.
Multiple profiles can be recorded in the instrument by switching it on then off with the magnetic switch key. Bluetooth auto-pairing and discovery make connecting to the instrument simple and robust.

The instrument can also operate in real time or cabled comms. Supplied with a traditional SubConn connector with a choice of communication protocols fitted as standard and selected by pin choice on the output connector:

Direct Reading

RS232:	Up to 200m of cable
RS485:	Up to 1000m of cable
Baud Rate:	38400 to 460800.
Protocol:	8 data bits, 1 stop bit, no parity, no flow control

Memory

Solid state non-volatile Flash memory

Capacity:	> 10 million lines of data (equivalent to 5,000 profiles to 1,000m with a 1m profile resolution)

Physical

Materials:	Acetal or Titanium housing Polyurethane and ceramic sensor components
Depth Rating:	500m (Acetal) / 6000m (Titanium)
Instrument Size:	Ø54mm x 510mm
Weight in air:	Titanium: 2.5 kg | Acetal: 1.5 kg | Cage: 2.5 kg
Weight in water:	Titanium: 1.5 kg | Acetal: 0.5 kg

Software

Supplied with DataLog x2 Windows based software, for instrument setup, control, data extraction and display.

Ordering

Part No.	Acetal Housing
0660035T1-XX	fastCTD Profiler - 500m rated with connector
0660035 T1 Ff-XX	... as above with xx Fluorometer
0660035 T1 -BT-XX	fastCTD Profiler - 500m rated with BlueTooth
0660035 T1 Ff-BT-XX	... as above with xx Fluorometer
	Titanium Housing
0660036 T1-XX	fastCTD Profiler - 6000m rated with connector
0660036 T1 Ff-XX	... as above with Fluorometer
0660036 T1-BT-XX	fastCTD Profiler - 2000m rated with Bluetooth
0660036 T1 Ff-BT-XX	... as above with xx Fluorometer

Where:
- T1 = High spec Thermistor
- Ff = with optional Fluorometer:
  - FC = Chlorophyll a
  - FF = Fluorescein
  - FR = Rhodamine
  - BT = with optional Bluetooth
  - XX = pressure sensor options

Datasheet Reference: fastCTD Datasheet | June 2018