

AquaTrak™ CVL

Quick Start Guide

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Help & Support

First please read this manual thoroughly (particularly the Troubleshooting section, if present). If a warranty is applicable, further details can be found in the Warranty Statement, 0080-STF-00139, available upon request.

Tritech International Ltd can be contacted as follows:

	Mail	<i>Tritech International Ltd</i> Peregrine Road Westhill Business Park Westhill, Aberdeenshire AB32 6JL, UK
	Telephone	+44(0) 1224 744111
	Email	support@tritech.co.uk
	Website	www.tritech.co.uk

Prior to contacting *Tritech International Ltd* please ensure that the following is available:

1. The Serial Numbers of the product and any *Tritech International Ltd* equipment connected directly or indirectly to it
2. Software or firmware revision numbers
3. A clear fault description
4. Details of any remedial action implemented



Contamination

If the product has been used in a contaminated or hazardous environment you *must* de-contaminate the product and report any hazards *prior* to returning the unit for repair. *Under no circumstances should a product be returned that is contaminated with radioactive material.*

The name of the organisation which purchased the system is held on record at *Tritech International Ltd* and details of new software or hardware packages will be announced at regular intervals. This manual may not detail every aspect of operation and for the latest revision of the manual please refer to www.tritech.co.uk

Tritech International Ltd can only undertake to provide software support of systems loaded with the software in accordance with the instructions given in this manual. It is the customer's responsibility to ensure the compatibility of any other package they choose to use.

Warning Symbols

Throughout this manual the following symbols may be used where applicable to denote any particular hazards or areas which should be given special attention:



Note

This symbol highlights anything which would be of particular interest to the reader or provides extra information outside of the current topic.



Important

When this is shown there is potential to cause harm to the device due to static discharge. The components should not be handled without appropriate protection to prevent such a discharge occurring.



Caution

This highlights areas where extra care is needed to ensure that certain delicate components are not damaged.



Warning

DANGER OF INJURY TO SELF OR OTHERS

Where this symbol is present there is a serious risk of injury or loss of life. Care should be taken to follow the instructions correctly and also conduct a separate Risk Assessment prior to commencing work.

1. Introduction

The AquaTrak™ Correlation Velocity Log (CVL) is an underwater sensor which estimates along track and across track speed over the ground using coherent pulses in a single vertical sonar beam. This document describes how to turn on and configure the CVL for the first time.

2. Precautions



Warning

The CVL must be fully immersed in water before turning on pinging.
FAILURE TO DO SO CAN DAMAGE THE CVL.



Warning

Pinging must be turned off before removing the CVL from the water.
FAILURE TO DO SO CAN DAMAGE THE CVL.

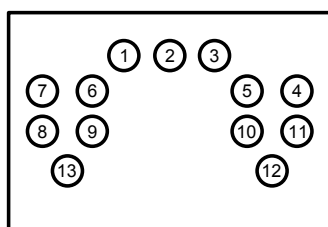
3. Installation

The CVL includes a wide input range, isolated DC/DC power supply. The CVL supports simultaneous 100Mbps Ethernet and serial communication. The CVL can be factory configured for either full-duplex RS232 or half-duplex RS485 communication. Serial communication ground is isolated from both power ground and the shield.

Table 3.1. Electrical Specifications

SPECIFICATION	DESCRIPTION
Inrush current	1.7A @ 24VDC
Input voltage range	18-75 VDC

3.1. Bulkhead connection pinout diagram



Male Bulkhead face view

Pin	Signal
1	GND
2	SHIELD
3	TRIGGER-
4	RS485 + / RS232 TX
5	RS485 - / RS232 RX
6	COMMS GND
7	N/C
8	ETH TX-
9	ETH TX+
10	ETH RX-
11	ETH RX+
12	POWER
13	TRIGGER+

3.2. Triggering

The CVL accepts a RS422 level, differential trigger input. It does not provide a trigger output. The trigger signal is isolated from power-ground (PIN #1 – GND), but is common with communications ground (PIN #6 – COMMS GND).

3.3. Serial Communication

The standard Serial interface protocol settings are as follows:

- 57600 baud
- 8 data bits

- 1 stop bit
- no parity
- no flow control

The exact configuration of your AquaTrak™ CVL may differ, please check any additionally supplied information for details on the exact setup of your unit. Alternatively contact *Tritech International Ltd* for more assistance.

4. Getting Started

The CVL uses a Command-Line-Interface (CLI) for control and monitoring. A Telnet client, such as PuTTY is required to access the CVL CLI. It is assumed that the user has connected power and Ethernet to the CVL as described in the Product Manual. See Table 1 for useful reference information.

Table 4.1. CVL Reference information

SPECIFICATION	DESCRIPTION
Static IP Address	192.168.0.100
Port	4444
Protocol	Telnet

4.1. Initial Connection

Connect to the CVL using the supplied static IP address, or your local network's DHCP assigned address. Once connected, the CLI prompt appears:

```
cvl>
```

Type the `help` command for a list of the available commands, and the inputs they support:

```
cvl> help
Available commands:

altitude          <value> | auto
aquatrak-endpoint [<ip-address>:<port>]
aquatrak-status
data-received
external-trigger  on | off
help
mode              off | on
monitor           velocity | altitude | pd6 | pd11
quit
safe-mode         on | on-restart | off
version
```

Check that data is being generated by the CVL with the `data-received` command:

```
cvl> data-received
true
```

If this command returns false, the CVL must be power-cycled.

4.2. Altitude Configuration

The operating state can be configured using the `altitude` command. This command accepts either the nominal altitude of the CVL from sea-floor or the parameter, `auto`. When the CVL is operating with `altitude auto`, the range from bottom is determined automatically and the CVL settings are adjusted accordingly. Set the altitude to `auto`:

```
cvl> altitude auto
cvl> altitude
auto
```

If operating in a shallow test-tank, it is better to use a set altitude. In either configuration, the minimum altitude at which the CVL reports correct velocities is 0.5 metres.

4.3. Enable Pinging

Before continuing, ensure the CVL is submerged in water. To do otherwise may damage the CVL.

The CVL must exit `safe-mode` before pinging can be enabled. When disabling `safe-mode`, it is best practice to use `on-restart`, which places the CVL back into `safe-mode` if it is power-cycled. Otherwise the CVL may resume pinging the next time it is powered.

Set `safe-mode` to `on-restart` and the enable pinging by setting the `mode` to `on`:

```
cvl> safe-mode on-restart
cvl> mode on
```

4.4. Monitor the Output

The CVL outputs the calculated velocities in a variety of different formats such as PD6, PD11, or space-separated values (see the Interface Control Document (ICD) for a description of each). To view the output of the CVL, use the `monitor` command, supplying the string identifying the format desired. While monitoring is enabled, the CVL transmits each estimate as it is generated. To exit monitoring, press the Enter key.

Monitor the velocities in the PD11 format:

```
cvl> monitor pd11
$PRDIH,R,30.21,S,2.080,C,*0F
$PRDIH,R,30.23,S,2.042,C,*03
$PRDIH,R,30.27,S,2.043,C,*06
$PRDIH,R,30.22,S,2.314,C,*02
$PRDIH,R,30.24,S,2.233,C,*00
$PRDIH,R,30.26,S,2.140,C,*05
$PRDIH,R,30.33,S,2.303,C,*04
$PRDIH,R,30.51,S,2.349,C,*0E
$PRDIH,R,30.34,S,2.076,C,*02
$PRDIH,R,30.56,S,2.278,C,*0A
$PRDIH,R,30.53,S,2.196,C,*0C
$PRDIH,R,30.53,S,2.342,C,*07
cvl>
```

4.5. Disable Pinging

Before removing the CVL from water, disable pinging. To do otherwise may damage the CVL. Setting the `mode` to `off` disables pinging. Then re-enabling `safe-mode` is recommended.

```
cvl> mode off
cvl> safe-mode on
```