Tritech International Limited

Please read this manual carefully before setting-up and using your unit

Seanet System
Serial Barometer Interface

Supplement

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Supplied by

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Warranty Statement

Tritech International Limited herein after referred to as **TIL**

TIL warrants that at the time of shipment all products shall be free from defects in material and workmanship and suitable for the purpose specified in the product literature.

The unit/system warranty commences immediately from the date of customer acceptance and runs for a period of 365 days. Customer acceptance will always be deemed to have occurred within 72 hours of delivery.

Note: Any customer acceptance testing (if applicable) must be performed at either TIL premises or at one of their approved distributors unless mutually agreed in writing prior to despatch.

Conditions:

These include, but are not limited to, the following:

1 The warranty is only deemed to be valid if the equipment was sold through TIL or one of its approved distributors.

2 The equipment must have been installed and commissioned in strict accordance with approved technical standards and specifications and for the purpose that the system was designed.

3 The warranty is not transferable, except or as applies to Purchaser first then to client.

4 TIL must be notified immediately (in writing) of any suspected defect and if advised by TIL, the equipment subject to the defect shall be returned by the customer to TIL, via a suitable mode of transportation and shall be freight paid.

5 The warranty does not apply to defects that have been caused by failure to follow the recommended installation or maintenance procedures. Or defects resulting from normal wear & tear, incorrect operation, fire, water ingress, lightning damage or fluctuations in vehicles supply voltages, or from any other circumstances that may arise after delivery that is out with the control of TIL.
(**Note:** The warranty does not apply in the event where a defect has been caused by isolation incompatibilities.)

6 The warranty does not cover the transportation of personnel and per diem allowances relating to any repair or replacement.

7 The warranty does not cover any direct, indirect, punitive, special consequential damages or any damages whatsoever arising out of or connected with misuse of this product.

8 Any equipment or parts returned under warranty provisions will be returned to the customer freight prepaid by TIL

9 The warranty shall become invalid if the customer attempts to repair or modify the equipment without appropriate written authority being first received from TIL.

10 TIL retains the sole right to accept or reject any warranty claim.

11 Each product is carefully examined and checked before it is shipped. It should therefore be visually and operationally checked as soon as it is received. If it is damaged in anyway, a claim should be filed with the courier and TIL notified of the damage.

Note: TIL reserve the right to change specifications at any time without notice and without any obligation to incorporate new features in instruments previously sold.

Note: If the instrument is not covered by warranty, or if it is determined that the fault is caused by misuse, repair will be billed to the customer, and an estimate submitted for customer approval before the commencement of repairs.

F167.1

Safety Statements

 NOTE	***Throughout the manual certain potential problems, or further information relating to the installation, maintenance, understanding or use of the apparatus will be highlighted to the operator by indications identified by the adjacent symbol and text.***
 CAUTION !	***Throughout the manual certain safety or operational related comments and requirements will be highlighted to the operator by indications identified by the adjacent symbol and text.***
 DANGER!	***Throughout the manual certain safety or operational related comments and requirements that could lead to injury or loss of life will be highlighted by the adjacent symbol and text.***

Technical Support

Contact your local agent or Tritech International Ltd

	**Mail**	***Tritech International Ltd.*** Peregrine Road, Westhill Business Park, Westhill, Aberdeen, AB32 6JL, UK
	**Telephone**	++44 (0)1224 744111
	Fax	++44 (0)1224 741771
	**Email**	support@tritech.co.uk
	Web	www.tritech.co.uk

An out-of-hours emergency number is available by calling the above telephone number

If you have cause to use our Technical Support service, please ensure that you have the following details at hand **prior** to calling:

- System Serial Number (if applicable)
- Fault Description
- Any remedial action implemented

Due to the expansion of equipment capabilities and the fact that new sub-modules are continually being introduced, this manual cannot detail every aspect of the operation.

The name of the organisation which purchased this system is held on record at *Tritech International Ltd*. Details of new software and hardware packages will be announced at regular intervals. Depending on the module, free upgrades will be offered in keeping with our policy of maintaining the highest levels of customer support.

Tritech International Ltd can only undertake to provide software support for systems loaded with Operating System and Tritech Seanet software in accordance with the instructions given in the System Re-installation section of this manual. It is the customers responsibility to ensure the compatibility of any other package that they may choose to load unless with the prior consent of *Tritech*.

INTRODUCTION

Seanet Pro V1.16 software onwards includes provision to attach a serial barometer to a COM Port on the surface control unit.

NOTE

The original Tritech barometer is an analog device that connects to an ADC port on the Tritech AIF card. The setup for this device is different from the Serial Barometer. The Serial Barometer is interfaced through a COM port and is a digital device. Both device types should not be connected at the same time.

The barometric pressure data received from the Serial Barometer will then be displayed and applied in the Bathy application. The barometric data will be displayed on the Bathy Panel and applied to correct the absolute pressure readings in the Bathymetric depth, salinity, density and sound velocity equations.

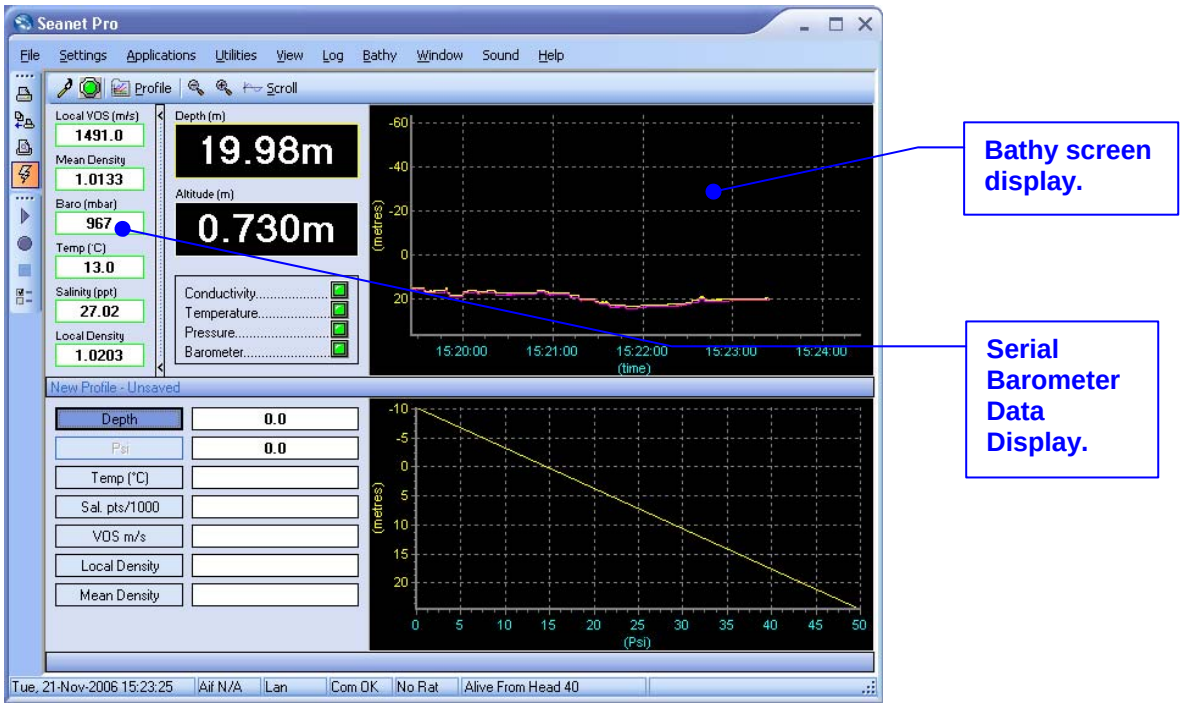
The Seanet Pro software will accept free-running, ASCII, <LF> terminated data strings from several digital barometers including Airflow DB2, Vaisala PTB220 and Paroscientific Model 760 series.
Other digital sensors may be incorporated if they have facility to output a compatible free-running, <LF> terminated ASCII string.

In certain cases, the digital barometer must first be programmed to the correct output mode before interfacing to the Seanet Pro software. Such details will be highlighted in this manual along with examples of compatible data strings. If your instrument is other than those specified then check whether it can be programmed to output a string that matches any of the compatible types specified.

BAROMETRIC DISPLAY

The digital readings from the Serial Barometer will be applied to the SeaKing Bathy calculations.

The barometric pressure data will be displayed in the Bathy screen display as shown below…



(Bathy application selected via 'Applications' | 'Single Bathy')

The Serial Barometer data is displayed in the '**Baro (mbar)**' text box in the Bathy screen as shown above.

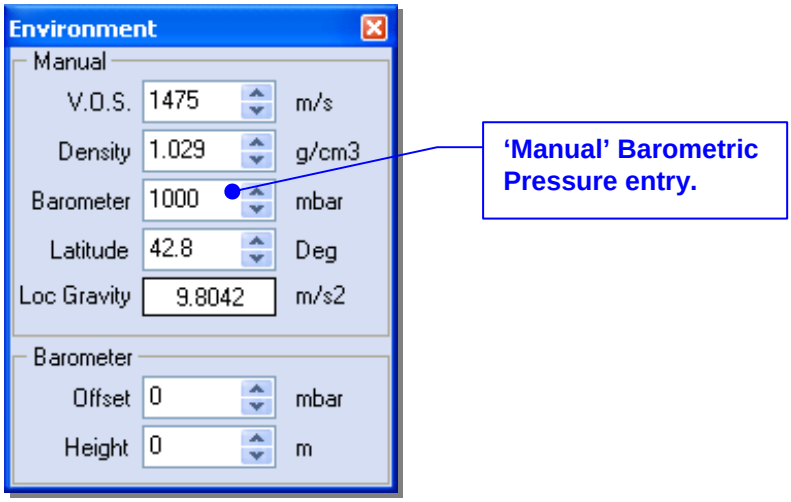
AUTO / MANUAL BAROMETRIC PRESSURE

The Seanet Pro software can be configured to display either a '**Manual**' or an '**Auto**' barometric pressure. This pressure will then be applied in all relevant Bathy calculations.

Manual Barometric Pressure

The '**Manual**' barometric pressure is entered into the Seanet Pro software via the 'Settings' – 'Environment' page in the Seanet Pro menu bar, as follows…

This will open the 'Environment' page where the 'Manual' 'Barometric pressure can be entered, in mbar units, into the 'Barometer' edit box…



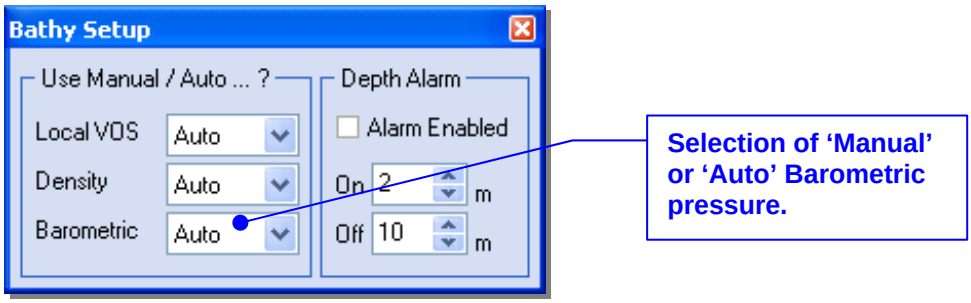
Auto Barometric Pressure

The 'Auto' Barometric pressure may be from a Serial Barometer connected to a COM port on the surface unit, or it may be from the Tritech Barometer connected internally, within the SCU, to the AIF card.

Selecting Auto or Manual Barometric Pressure

Before operation, the system must first be set to display and apply either the 'Manual' or 'Auto' (if present) Barometric pressure values. This selection is configured in the 'Setup' page of the Bathy Tools menu…

Clicking on the 'Setup' menu item will open the 'Bathy Setup' page, as follows…



Here the Barometric pressure can be set to either the 'Auto' or the 'Manual' values.

NOTE

If there is no 'Auto' pressure data available then the system will automatically revert to the 'Manual' pressure value.

NOTE

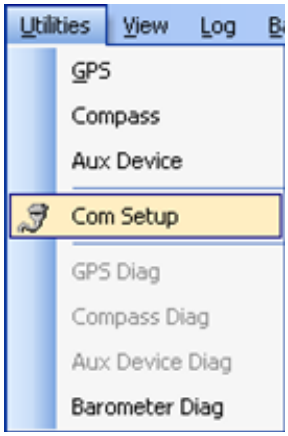
If a Serial Barometer is connected to the COM Port then ensure that the 'Auto' Barometric pressure is selected in the 'Bathy Setup' page. Else, the 'Manual' pressure will be displayed and applied to the Bathy calculations.

CONFIGURING A COM PORT FOR THE SERIAL BAROMETER CONNECTION

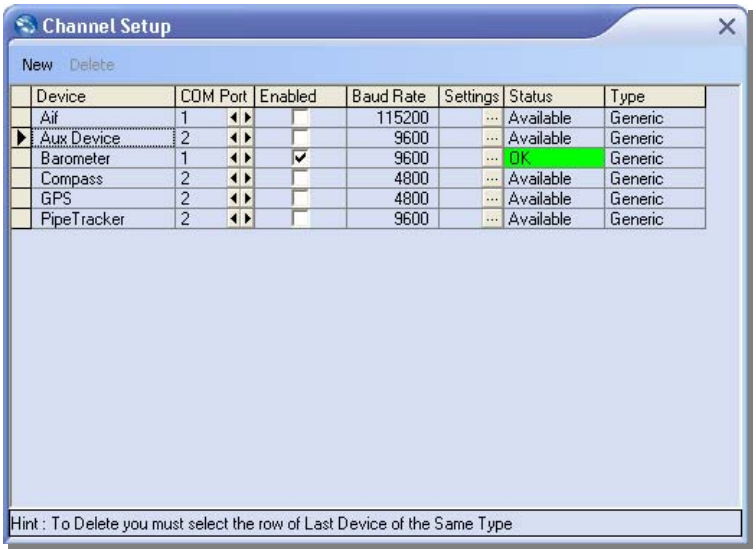
The Serial Barometer should be connected to an available COM Port on the Seanet Pro surface control unit. This COM Port may be a 9-pin legacy Port or a virtual COM Port as assigned through devices such as USB to Serial converters. Either way, the COM Port number allocated in Windows Device Manager must be configured and enabled in Seanet Pro for the Barometer data input.

A serial COM Port must be enabled and configured for the Serial Barometer interface, as follows…

a) The Seanet menu bar contains a menu option named **Utilities**. Click on this and then select **Com Setup**…



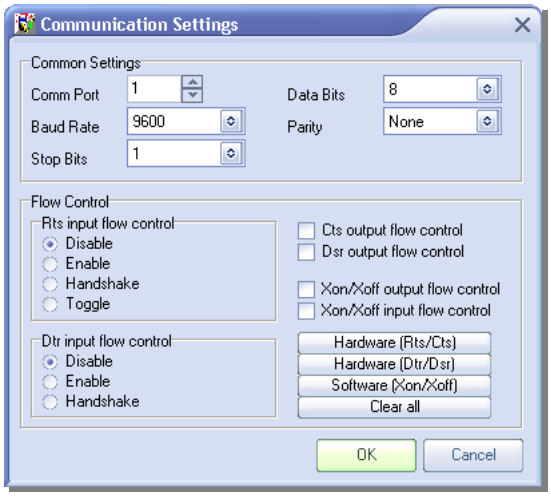
b) The **Channel Setup** panel will be displayed with options to enable and configure COM Ports for available devices. Find '**Barometer**' listed in the Device column in the table and then select an available COM Port for allocation to it. Ensure that the **Enabled** check-box is ticked (as shown below) and that the **Status** column displays 'OK'. Also check that the **Baud Rate** is set to the correct speed. If you are required to change the port Baud Rate, click on the **Settings** ellipsis button (…).



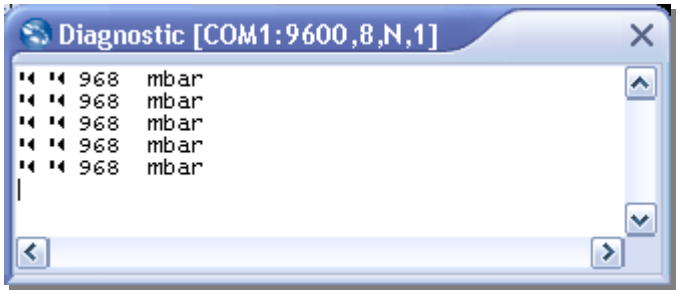
NOTE

If a Barometer device is not found in the list then click on 'New' – 'Barometer' to add one into the Device list.

c) Clicking on 'Settings' will open the **Communication Settings** panel which can be used to configure all settings for the port. Normally, only the **COM Port** number and **Baud Rate** should ever need to be changed. However, Data bits and Parity may also need to be altered on some devices therefore consult the Barometer documentation for details particular to its output format. Once you have changed/confirmed the required settings press the **OK** button and close the Channel Setup form.



d) A Terminal window can also be opened to display the incoming Barometric data strings. This is opened by clicking on the **Utilities** menu and selecting **Barometer Diag**…



e) If Serial Barometer data updates are not yet displayed in the Baro text box on the Bathy display, confirm that data strings are being received and displayed correctly in the Diagnostic form. If not then check the COM Port settings and also the link cable. If data is being displayed in the Diagnostic form then ensure that it's string type is compatible and also that the 'Auto' Barometric pressure option is selected in the 'Setup' page of the Bathy Tools menu as described earlier.

COMPATIBLE SERIAL BAROMETERS

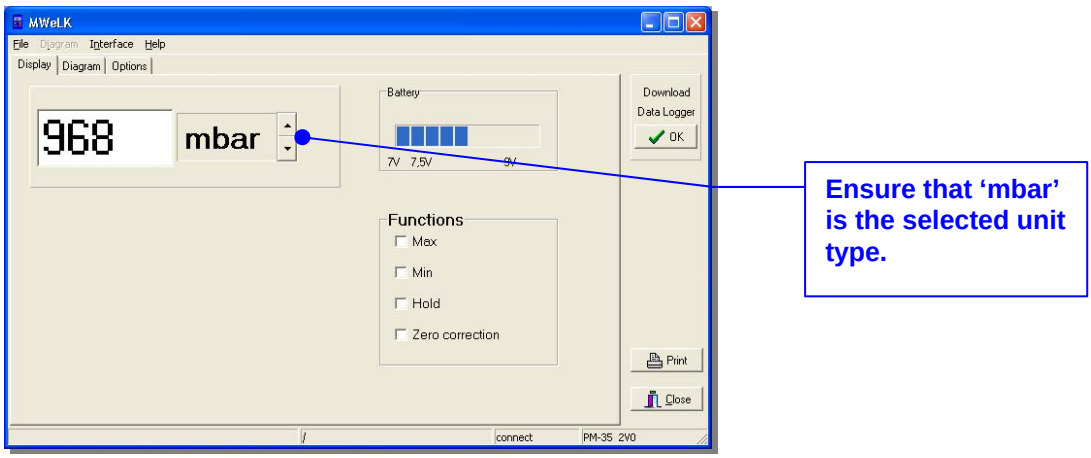
As aforementioned, any Serial Barometer may be connected as long as it can be programmed to output a data string that is compatible with the Seanet Pro processing. Any unidentifiable Barometric data strings will be discarded.

There are several rules that must be observed that will determine whether the Barometric data string will be processed or not. Firstly, the data string must be an ASCII data type. Secondly, it must also be terminated with an <LF> character terminator. Finally, the data string must be a continuous, free-running string.

Before it is compatible with Seanet Pro, it may be necessary to program the Serial Barometer to the correct output mode and to a specific data string format. The Serial Barometer may have several data string types of which not all may be compatible with the Seanet Pro processor.

Connecting the Airflow Instruments DB2

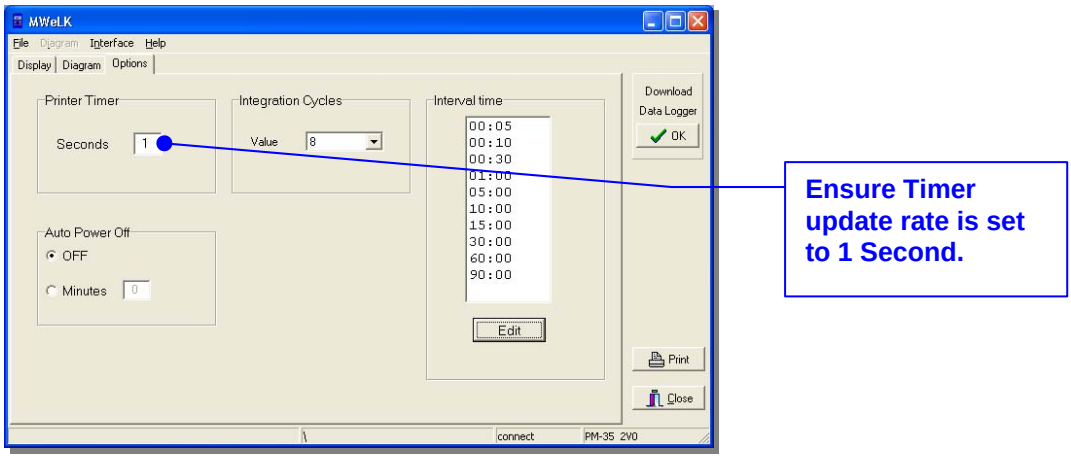
Before connecting to Seanet Pro, the Airflow Instruments DB2 Barometer must first be programmed to the correct mode. This is achieved by first connecting it to its own '**MWelk**' control and display program.



(AirFlow Instruments 'MWelk' program display)

First ensure the DB2 Barometer is configured to output data in **mbar**. This is configured in the front page of the **MWelk** software program.

Next, click on '**Options**' and ensure the **Printer Timer** is configured to **1** Seconds as shown below…



The 'Printer Timer' will configure the update rate of the free-running Barometric data string. This should be reduced to 1 second to increase the number of updates that are sent to Seanet Pro.

With the above settings applied, the DB2 should now output the following serial data string at an update rate of 1 string per second…

Xxxx__mbar<cr><lf>

where;
*'**Xxxx**' = Barometric pressure in mBar. If value < 1000mBar then leading 'X' will be replaced with space character,*
'__' = 2 x Space characters,
*'**mbar**' = Units identifier,*
***<cr><lf>** = Carriage Return + Line Feed string terminator.*

(The above data strings will be preceded with Xon & Xoff control handshake characters (i.e. 'DC1' and 'DC3' in ASCII Character Table)

Once the required settings have been applied and confirmed, close down the MWelk program and configure the COM port connection in 'Seanet Pro' as described earlier.

NOTE

The DB2 Barometer may need a power toggle to apply any settings changes.

Other Compatible Serial Barometers

There are several other Barometers that may be interfaced to Seanet Pro. Amongst these are the **Vaisala PTB220** and the **Paroscientific Model 760**.

These instruments must first be programmed to the correct output mode before connecting to Seanet Pro. The instrument manufacturer's documentation should be consulted for details on how to perform this. Here are the compatible data strings that Seanet Pro will accept and process…

Vaisala PTB220

xxxx.xx_mbar<lf>

where;
*'**xxxx.xx**' = barometric pressure in mbar,*
'_' = space character,
*'**mbar**' = Units identifier,*
*'**<lf>**' = Line Feed string terminator.*

Paroscientific Model 760

0001xxx.xxxx<cr><lf>

where;
*'*****' = Start Char,*
*'**00**' = DID (PC),*
*'**01**' = SID (Transmitter 01-98),*
*'**xxx.xxxx**' = barometric pressure in mbar,*
*'**<cr><lf>**' = Carriage Return + Line Feed string terminator.*