

Removable Pressure Transducer Calibration Aid Operation Manual

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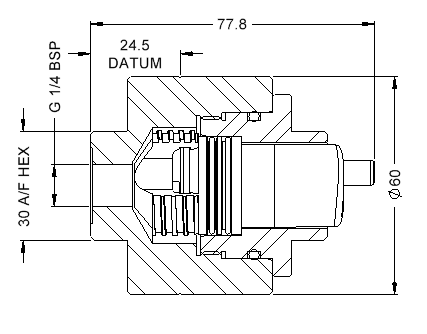
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1. Adaptor Setup



Fit an o-ring OR126N7S to 06504312 and grease. Ensure both o-rings on the PTSA are clean and free from defects, align the oval profile of the PTSA to the through hole of 06504312 and press fully into position until the PTSA shoulders on 06504312. Grease the external thread of 06504312 and screw 06504313 into position until it shoulders on 06504312.

Place the dowty seal into the recess of 06504313 and torque the ¼” BSP adaptor to 15.8 Nm. Ensure the datum line is level if necessary and perform the pressure tests as required.

Maximum pressure rating of the pressure chamber is 600 bar, only test to the pressure rating of the PTSA installed.

Fit the adaptor cable 0650C64 to the exposed connector on the PTSA making sure the connectors align and plug into the test computer.

## Removable Pressure Transducer Calibration Aid

## 

## 2.1 Introduction

The Valeport Removable Pressure Tranducer Calibration Aid is designed to allow users to read and write the calibration string of their Removable Pressure Transducer.

The application can also aid in the calibration process, allowing the sensor’s data to be logged and graphed to produce a mean pressure that can be used on the calibration sheet.

Valeport’s Removable Pressure Transducer is designed for the uvSVX & miniIPS2, allowing customers to switch the pressure sensors for different scenarios & different pressure ranges, without having to change the instrument.

The Valeport Removable Pressure Tranducer Calibration Aid is available here: <https://valeport.download/DoDownloadFile.php?Version=81> or can be found on the Valeport Downloads page: <https://valeport.download/> under the instrument type’s uvSVX & miniIPS2.

## 2.2 Connecting

Ensure that the sensor is connected with the supplied USB lead & that the sensor is facing down to verify that the weight of the diaphragm is not affecting the readings.

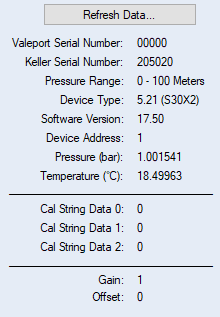
Connect to the sensor using the connection panel.



## 2.3 On-board Data

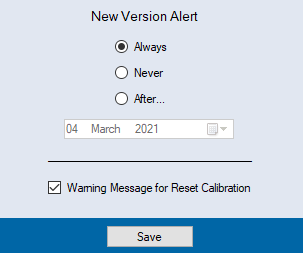
Once connected, the software will automatically execute a series of commands interrogating the sensor, populating data such as the sensor’s pressure range, as well as the existing calibration.

This data can be refreshed using the ‘Refresh Data…’ button.



## 2.4 Settings

The Settings button can be selected to display a limited amount of user settings.



The latest version of the Valeport Removable Pressure Transducer Calibration Aid is available here: <https://valeport.download/DoDownloadFile.php?Version=81>

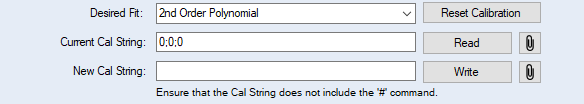
The New Version Alert will automatically inform the user when an update for the software is available, in the event that an update is released it is strongly recommended to update; various versions will also be available on our downloads page: <https://valeport.download>

There is also a warning message that will appear when the ‘Reset Calibration button’ is pressed, to confirm the selection, this warning message can be disabled by unchecking the ‘Warning Message for Reset Calibration’ checkbox.

## 2.5 Graphing

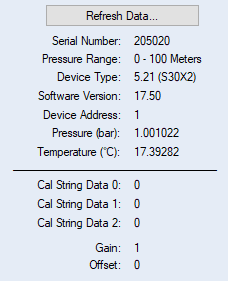
The Arrow buttons can be selected to Expand or Collapse the application, displaying the graph. The graph should be used as a visual aid to ensure that the sensor has settled to the set pressure & to visually identify any anomalies (a spike/jump) in the data.

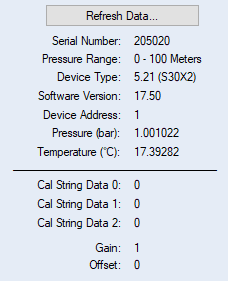
## 2.6 Logging & Calibration



There are two different calibration options for the Removable Pressure Sensor, a Straight Line Fit & a 2nd Order Polynomial.



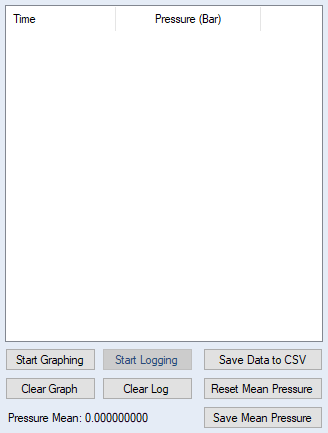
* A Straight Line Fit calibration will make use of the Gain & Offset values. 
* A 2nd Order Polynomial calibration will make use of the Cal String Data 0, 1, 2 parameters.



Before performing any changes to your Calibration it is recommended to save the existing Straight Line Fit & 2nd Order Polynomial values.

To start a Calibration, you must remove any existing Calibration, using the ‘Reset Calibration’ button.

(See Settings to remove the warning)

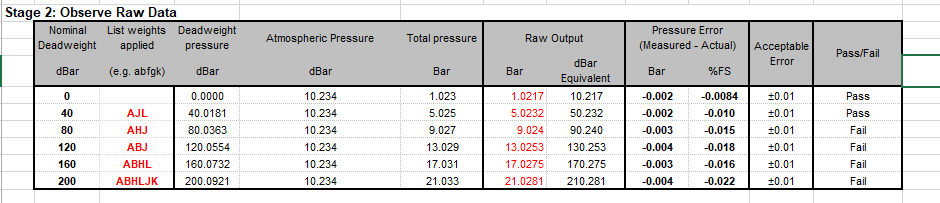


You can then click the ‘Start Graphing’ button, which will start plotting data on the graph, once the sensor has visually settled to the set weight/pressure the ‘Start Logging’ button can be selected.

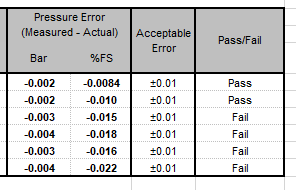
This will then log the data to the applications list box, which will automatically generate the Mean value of the logged pressure data. After recording data for the desired time at the desired pressure, the ‘Stop Logging’ & ‘Stop Graphing’ buttons should be pressed.

The ‘Save Mean Pressure’ button can then be pressed, this will copy the Pressure Mean value to your clipboard. Alternately, the data can be saved to a CSV file and you can calculate the mean there (It is recommended to save CSV files when the data has been used as this can be used to assist in the event of any issues).

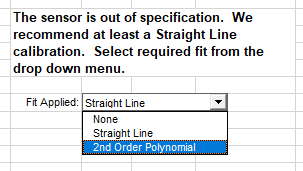
The Mean Pressure value can then be pasted into the Raw Output cell of the provided Calibration Sheet (Excel) next to the appropriate deadweight value.



You can then change the weight of the deadweight tester, **reset** the Mean Pressure value & Graph and clear the Log before repeating the process for the next weight. Ensure than the Pressure Erro parameters is winthin the Accptable Error range and returns a Pass in the Pass/Fail column.



The calibration sheet will then produce a Gain/Offset command for a Straight Line Fit or a 3 Parameter command for a 2nd Order Polynomial, additionally informing you which fit to you should use.

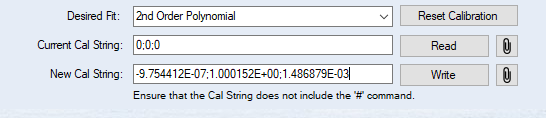




Example 2nd Order Polynomial String from Excel File: #085;-9.754412E-07;1.000152E+00;1.486879E-03

With the ‘#’ command removed: -9.754412E-07;1.000152E+00;1.486879E-03

This command can then be copied back to the Removable Pressure Transducer application and pasted into the ‘New Cal String’ or ‘New Gain/Offset’ fields, ensuring that the ‘#’ command has been removed. The ‘Write’ button can then be clicked to execute the command to the sensor.



## 2.7 Sensor Removal

Rotate the instrument to expose the Removable Pressure Transducer.

Insert the provided tool ensuring that the ‘arms’ are securly grasping the retaining clip.

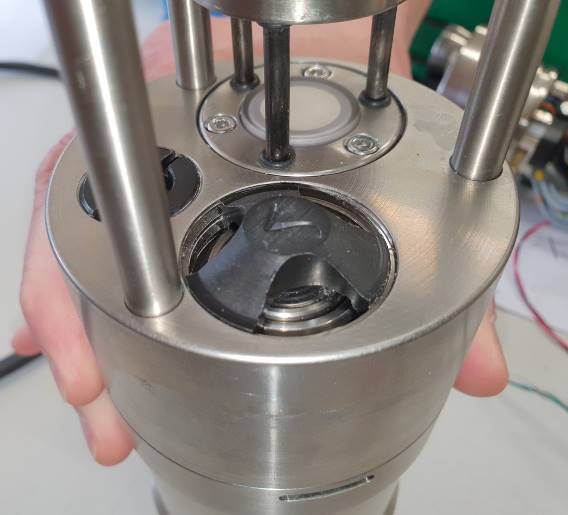
Begin unscrewing the retaining clip to expose the threads.

Using some force (being mindful to not damage the tool or the sensor) you will need to pull the sensor from the housing.

The tool can then be removed and the sensor can be lifted from its housing by hand.

To reinsert the sensor, follow these steps in reverse.

## C:\Users\dblount\AppData\Local\Microsoft\Windows\INetCache\Content.Word\20210315_110229.jpg



## Declaration of PED

The products in this manual conform to the Pressure Equipment Directive (PED) 2014/68/EU Article 4 Section 3 and have been designed and manufactured in accordance with Sound Engineering Practice (SEP).

As per Article 4 (3) these SEP products do not require CE Marking.