USERS MANUAL

PVT READING KIT FOR PC
with
GEOTECH PVTLog

for programming of and data collection from

GEOTECH PVT PIEZOMETERS

Ingenjörsfirman Geotech AB
Datavägen 53
SE-436 32 ASKIM (Göteborg)
Sweden
Ph: +46 - 31 28 99 20
Fax:+46 -31 68 16 39

E-mail: info@geotech.se
www.geotech.eu

Published date: 2015-02-25

Table of Contents

1 General Information 1

1.1 Foreword 1
1.2 Safety 1

2 Product Information 2

2.1 General Description 2
2.2 Interface 2
2.3 PVTLog read-out and programming software....2
2.4 Additional product information 2
2.5 Intended use 2
2.6 System components overview 3

3 Read-out kit for PC 5

3.1 Installation 5
3.2 Main page 5
3.3 Piezometer reading 5
3.4 File management 10

4 Trouble Shooting and Support 12

4.1 Trouble Shooting....12

DOCUMENT HISTORY

Date	Comment	Sign
2014	Revised content, software version 2.11.	
2015-02-25	Change of design and content.	mcn

1 General Information

1.1 Foreword

This manual contains important information for the proper use of the PVT READING KIT FOR PC and the PVTLog software for GEOTECH PVT piezometers. The content of this document reflects functionality as implemented in software version 2.11. Please feel free to report bugs and suggest improvements (contact information can be found in the end of the manual).

Read the manual carefully before you start operating the system. Also read the maintenance instructions before performing any maintenance work. The warranty from Ingenjörsfirman Geotech AB is valid only if the instructions in this manual are followed.

Always keep the manual by the equipment and replace it immediately if it should become wholly or partially unusable. A new copy can always be ordered from Ingenjörsfirman Geotech AB.

1.1.1 Content

The information in this publication is on the basis of information that was available at the time that the publication was written.

The information can change at any time. Ingenjörsfirman Geotech AB reserves the right to change or update the content of the manual without prior notice.

1.2 Safety

The operator must be alert to potential hazards. The operator should also have the necessary training, skills and tools to perform these functions properly.

The important safety messages in this manual are presented as follows:

Indicates a hazardous situation which, if not avoided, will result in death or serious injury.

Indicates a hazardous situation which, if not avoided, could result in death or serious injury.

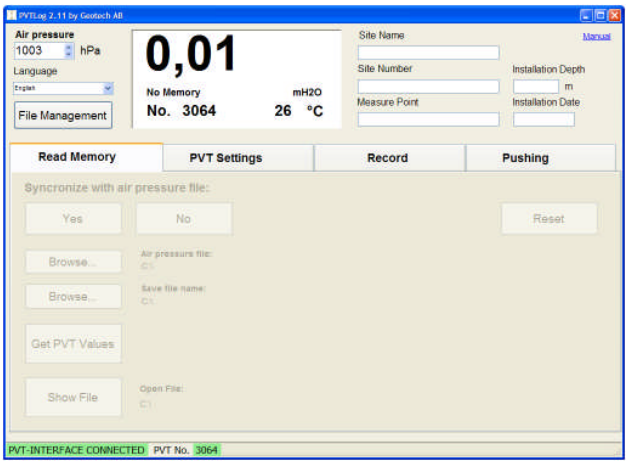
Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

This warning identifies important messages in this manual, e.g. information on risk for costly damage. Carefully read the message and inform your colleagues.

2 Product Information

2.1 General Description

The PVT READING KIT FOR PC is intended for use together with GEOTECH PVT piezometers and transducers. It comprises interface and software for reading real time values from your standard Windows laptop computer. When used together with piezometers equipped with logging memory, you can program logging intervals and collect log files. Data is stored on a format facilitating further processing in MS Excel.



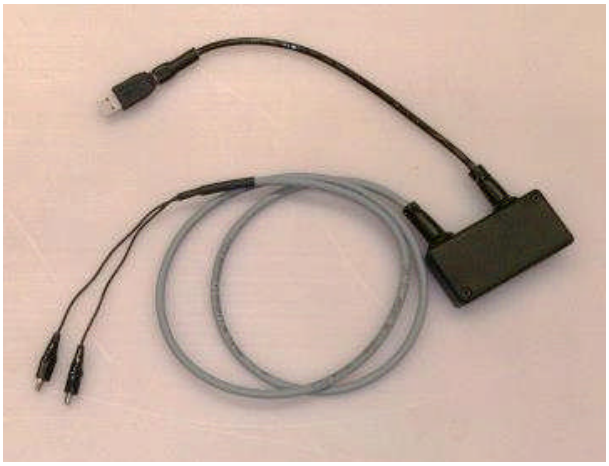


Fig. 1 – Install the PVTLog software on your own computer and connect it to the piezometer via the USB/crocodile clip interface.

The delivery comprises software, interface and user manual. Standard Windows computer is to be sourced locally by the customer.

2.2 Interface

Connect the interface to a USB outlet of your computer and use the two crocodile clips for connection to the piezometer.

2.3 PVTLog read-out and programming software

The software is intended for reading real time values from your standard Windows laptop computer. When used together with piezometers equipped with logging memory, you can program logging intervals and collect log files. Data is stored on a format facilitating further processing in MS Excel.

Right to use on one computer, licensed by owner of all rights Ingenjörsfirman Geotech AB. Medium for software delivery may change without notice.

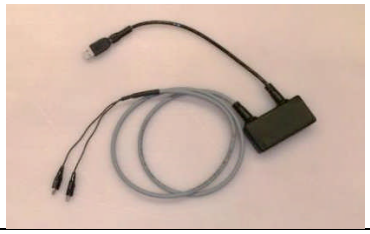
2.4 Additional product information

Please refer to separate document for description of additional equipment.

2.5 Intended use

The system is designed for geotechnical and hydrological monitoring, and may only be used for this purpose. All other use is prohibited.

2.6 System components overview

Item No.	Item	Illustration	Description
		Interface and software for Laptop computer	
19656	Reading kit El. Piezom. for PC		Reading and programming kit for standard windows computer comprising: PVTLog software and USB/crocodile clamp interface. Computer not included.
Included in 19656 above	PVTLog		PVTLog read-out and programming software. Right to use on one computer, licensed by owner of all rights Ingenjörsfirman Geotech AB. *Medium for software delivery may change without notice.*
Included in 19656 above	PVT Interface USB		USB/crocodile clip interface.
		Compatible equipment	
10591	Piezometer with memory. 25 m wire.		Logging direct push piezometer with memory. Range 40 mH_2O (approx. 400kPa).
10590	Piezometer without memory. 25 m wire.		Direct push piezometer without memory. Range 40 mH_2O (approx. 400kPa).
On request	Piezometers with special characteristics.		Direct push piezometer with special characteristics available on request. E.g. different range, cable type or cable length. *Please check compatibility if in doubt.*
10592	Logging air pressure meter		Logging air pressure meter for capture of barometric reference file.

Item No.	Item	Illustration	Description
20500	Electronic transducer		Portable electronic pressure transducer with needle for filter tip 12912, 24560 and similar. Can also be used without the needle for water level measurements in open standpipe.
12912	Filter tip, Stainless steel.		Filter tip – closed type with membrane. Stainless steel.
24560	Filter tip, plastic		Filter tip – closed type with membrane. Plastic.
On request	Geotech depth registration system		Geotech depth registration system. Normally pre-installed on Geotech's site investigation rigs. Different versions exist – also for installation on other rig types.

The GEOTECH PVT product family is being continuously developed and improved. We therefore reserve the right to changes of the information above.

3 Read-out kit for PC

3.1 Installation

3.1.1 Hardware installation

Connect the interface to a USB outlet of your computer and use the two crocodile clips for connection to the piezometer.

3.1.2 Installing PVTLog

The computer will require a connection to the Internet during installation of the PVTLog software.

- Copy the content of the software medium to the computer.
- Connect the interface to a USB port on the PC.
- Driver installation will start automatically. Wait until the message "New hardware is ready to use" is showed in the computers lower right corner.
- Run “PVTLogSetup.exe” and follow the prompts.
- If Microsoft .NET Framework 4.0 or later is not installed on your computer, it will also be installed.
- PVTLog is now ready for use.

3.2 Main page

When PVTLog starts for the first time some basic settings are made, so therefore it will take a little longer to start. If PVT interface is connected, the text "PVT INTERFACE CONNECTED" will be shown in the lower left corner of the program window.

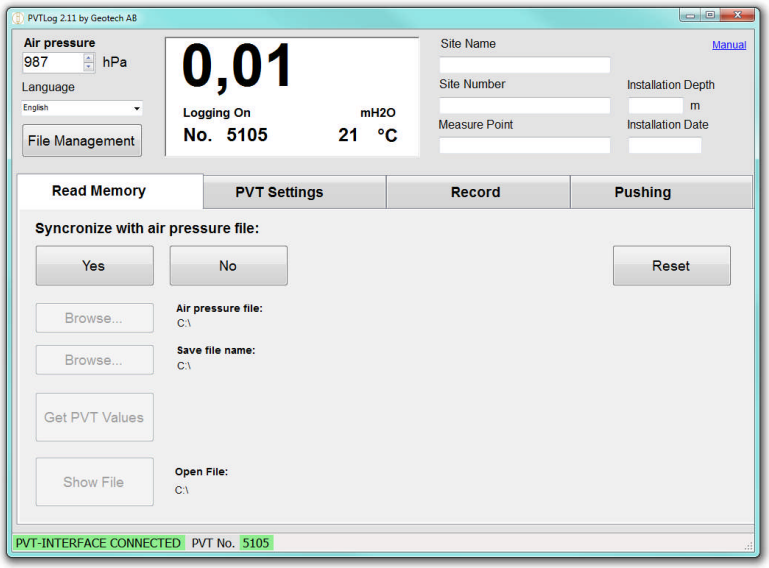


Fig. 2: PVTLog Main page. If you connect a piezometer, identity and current values will be shown.

3.3 Piezometer reading

3.3.1 Read current pressure

Connect the piezometer. Enter the current air pressure if you want the correct compensated pressure to be shown. Note that the air pressure unit is in hPa and the piezometer read out pressure is in mH_2O.

If the piezometer carries any setup information, it will automatically be loaded and displayed. Please observe that the installation information is only stored locally on your computer in the directory

C:\PVTData\Headers\. Changes to the installation information are done by typing directly into the fields. All changes to the fields are automatically saved.

3.3.2 Read Memory

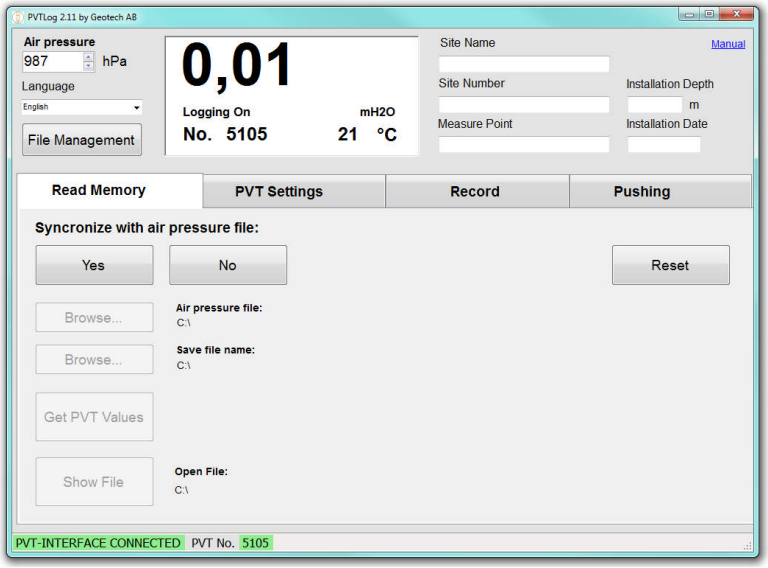


Fig. 3: Read Memory

The GEOTECH PVT PIEZOMETER is available with logging function. To read the logged values, select "Read Memory". Note that a piezometer with logging memory must be connected in order to select the "Read Memory" tab.

You may now choose to synchronize with an air pressure file:

- If you have an air pressure file and want the software to compensate the log file with the air pressure closest in time to each piezometer reading, answer “Yes” and select air pressure file.
- If you do not have an air pressure file or do not want to synchronize right now, you just answer “No”.
- If you intend to read an air pressure file you answer “No”.

A file name is automatically generated on the format pvt_Serialnumber_Date_Time.pvx. Select “Browse" to change filename or directory

Load the logged values by clicking "Get PVT Values”.

When the file is loaded, you open the created file in the “PVT Data” window by clicking “Show File”.

3.3.3 PVT Data

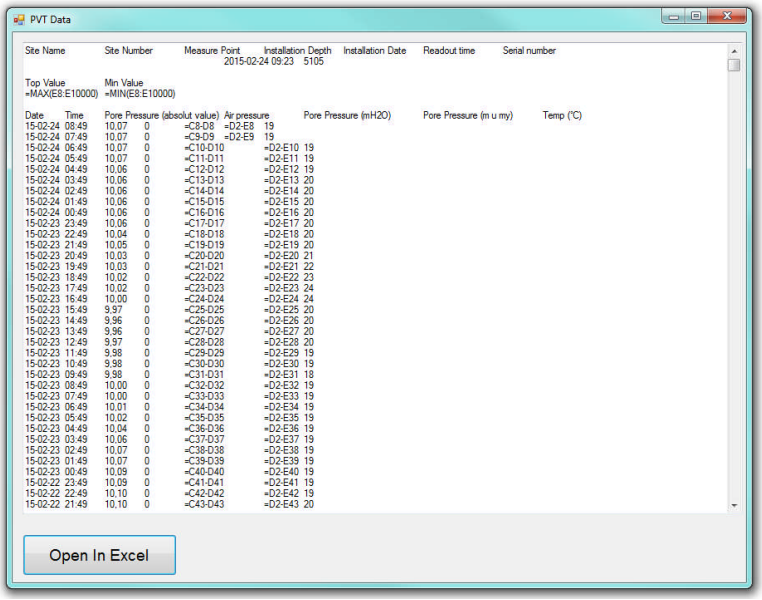


Fig. 4: View log file in the PVT Data window. Press “Open in Excel” to view compensated values in Excel. This functionality requires “Microsoft Excel” to be installed on your computer.

Open the “PVT Data” window by selecting “Show File” under the “Read Memory” tab. The file displayed is in "spreadsheet format" with formulas.

Press ""Open in Excel” to see the results of the calculations values in Excel. This functionality requires “Microsoft Excel” to be installed on your computer.

3.3.4 PVT Settings

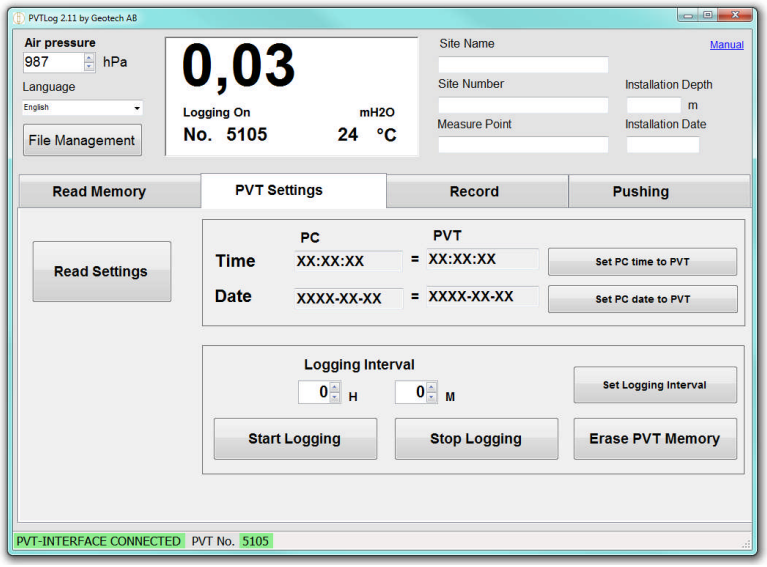


Fig. 5: PVT Settings

Under the tab "PVT Settings" you can see and change the settings of a connected piezometer with memory.

Select "Read Settings" to see the Piezometer’s current settings.

Press "Set PC time to PVT" to copy time from the computer’s clock to the Piezometer.

Press "Set PC date to PVT" to copy date from the computer to the Piezometer.

To set the logging interval there are two boxes. In the box labeled "H", you set the logging interval in hours and in the box marked "M", you set the logging interval in minutes. To set the logging interval to the Piezometer you then press "Set Logging Interval".

Start and stop logging by select “Start Logging” or “Stop Logging”.

Select "Erase PVT Memory" to permanently delete all recorded values in the piezometer memory.

3.3.5 Record

Fig. 6: Record

Under the tab "Record" you get the current compensated pore pressure presented as a graph against time. Start recording by pressing "Start" and stop by pressing "Stop". When you press "Stop" you will be asked if you want to save the graph. The graph is saved as an image in the directory "C:\PVTData\Grafs\" if no changes are made.

3.3.6 Pushing

Fig. 7: Pushing

Under the tab "Pushing" you get the current compensated pore pressure presented as a graph against depth. This function requires real time data from Geotech depth registration system.

- Initiate a new recording by pressing the "New" button.
- Start recording by pressing the "Start" button.
- Press the "Pause" button if you want to pause.
- To resume, press "Start" again.
- Press "Done" to finish the recording,
- Select “Yes” to save the graph. The graph is saved as an image in the "C:\PVTData\Grafs \" directory if no changes are made.

You will now be asked if you want to transfer information. If you answer “Yes”, installation depth and installation date are added to the installation information.

3.4 File management

3.4.1 File management – general

File management in PVTLog is used for converting the different file formats that the Geotech readout units use to a format compatible with Excel. It is also possible to merge a readout file and air pressure file.

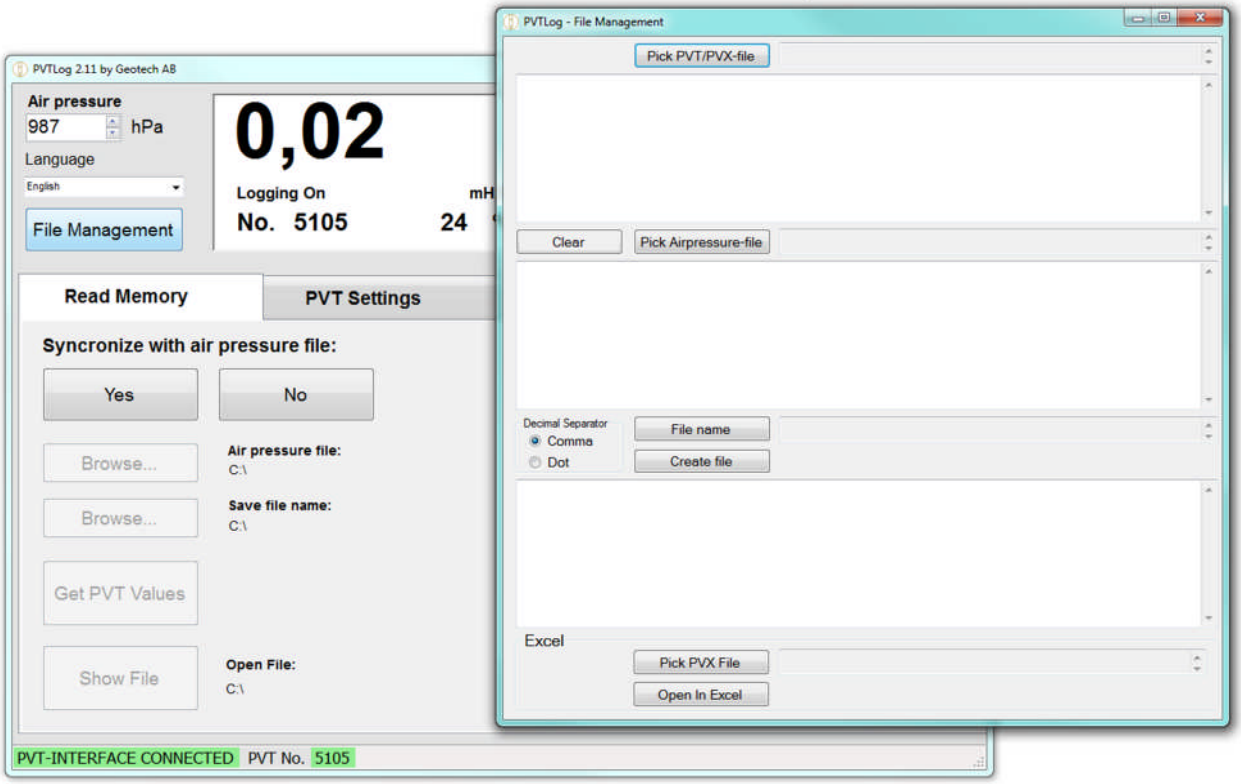


Fig. 8: Open the file management window from the Main Window

Open the file management window by pressing the “File Management”-button in the main window.

3.4.2 Create file

Press “Pick PVT/PVX-file” and choose file to convert.

If there is an air pressures file that you want to use for compensation, select “Pick Air pressure-file” and choose file. Leave the box empty if you do not want to compensate for air pressure. Press “Clear” to clear the field.

Pressing “File name” and chose name of the file to be created. If the box should turn red, this indicates that the file name is already in use.

Chose “Comma” or “Dot” (point) as decimal separator.

Create the file by pressing “Create file”. If there is a header file for the piezometer in c:\PVTData\Headers\ this information will also be added to the file. The created file will be on the tab separated PVX format (suffix “.pvx”).

3.4.3 Excel

For full functionality as described below you need to have Microsoft Excel 2010 or later installed on your computer.

Press “Pick PVX File” to select file and press “Open in Excel” to open the file in Microsoft Excel.

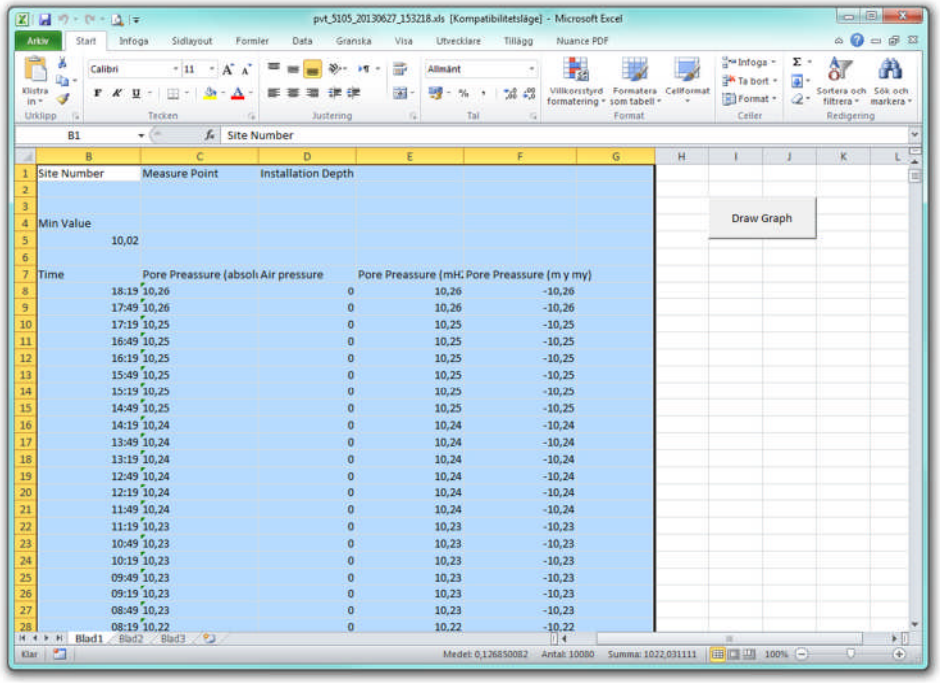


Fig. 9: Open the file in Microsoft Excel.

In the Excel window that is opened you may press the “Draw Graph”-button to show the values graphically.

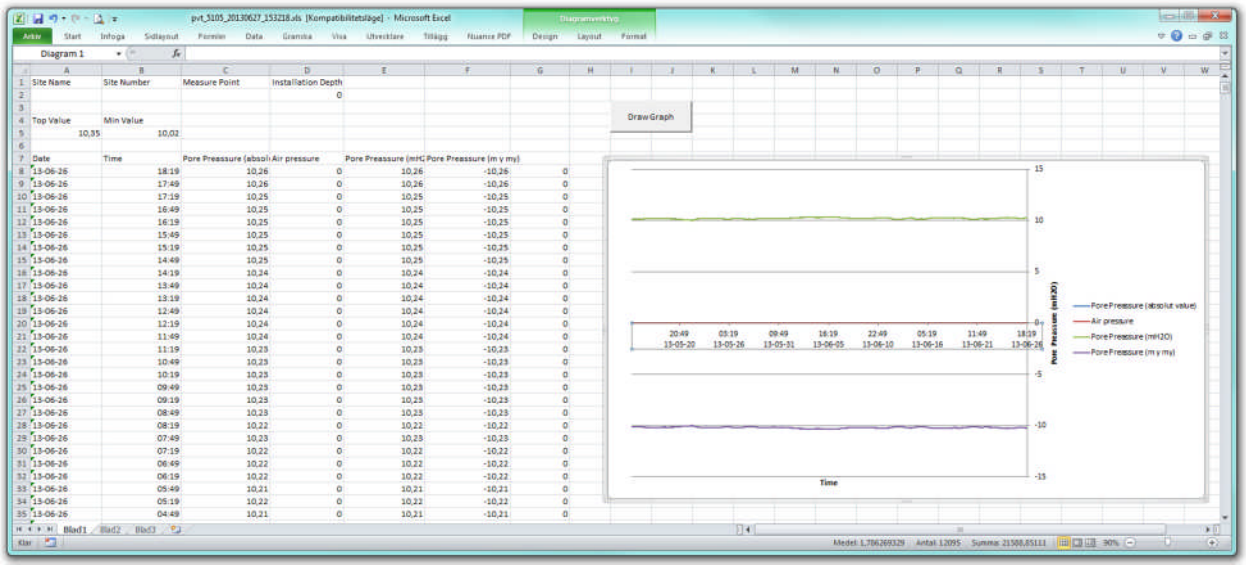


Fig. 10: Click “Draw Graph” to draw a diagram in Microsoft Excel.

4 Trouble Shooting and Support

For support please contact:

Ingenjörsfirman Geotech AB
Datavägen 53
SE- 436 32 Askim
SWEDEN

info@geotech.se
+46 31 289920

We welcome reports on bugs and suggestions for improvement. Please feel free to illustrate your issue with a screen shot or similar.

4.1 Trouble Shooting

The trouble shooting table below is not complete, nor subject to any quality assurance, and thus published as indication only. Please feel free to revert with additional questions and suggestions.

Issue:	Finding possible causes:	Actions:

© 2015 Ingenjörsfirman Geotech AB
Datavägen 53 • 436 32 Askim • SWEDEN
Phone +4631289920 • Fax +4631681639
www.geotech.eu • info@geotech.se