Instructions for use

Single Calibration Adaptor

with

Probe Configurator Software

Dear Customer

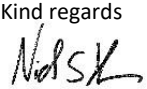
Thank you for buying the Calibration Adaptor.

We have done our best to create a quality interface for the professional calibration specialist.

You will hopefully find the adaptor and affiliated software easy to use.

If you have any questions or concerns, please do not hesitate to contact us by email: contact@nilotech.eu or go to our website www.nilotech.eu/contact

Kind regards



Niels Stengaard Hansen / CEO

Change log

Date	Version	Resp	Change
2020-08-11	0.1	NSH	Not Released, for Review only.
2020-08-24	0.2	NSH	Updated after GP review
2020-11-05	0.3	NSH	Added instruction for USB driver installation

Content

In the Box

The Single Calibration Adaptor

USB cable for data transfer

Symbols used in this instruction

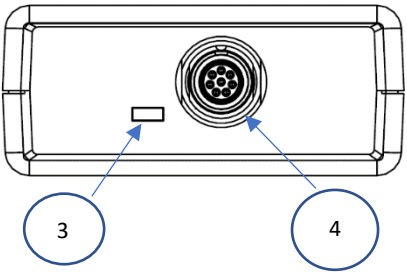
Click or press here.

ATTENTION
Important warning or instruction.

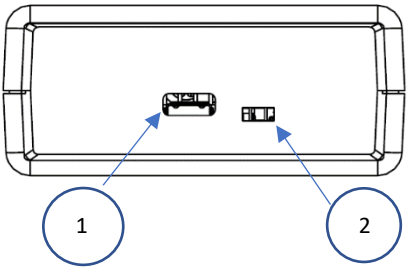
NOTE
A useful hint about the use of the NiloChecker.

Basic physical layout

Probe connector end:



USB connector end:

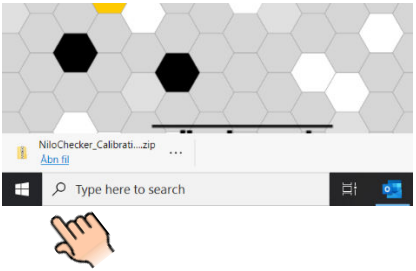


1	USB port
2	Power indication lamp
3	Probe input
4	Probe detection lamp

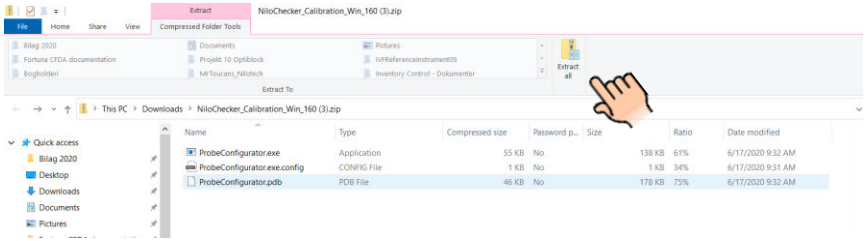
Install the Software

a. First, install software for Windows 10.
Go to www.nilotech.eu/calibration
Scroll down the page and click the button “Download Software”

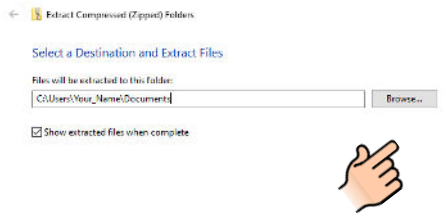
You will see the download box in the lower left corner. When downloaded, click on “Open file”



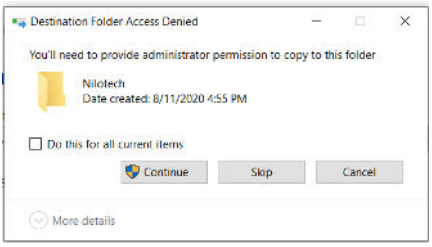
b. Windows will prompt you to extract the Zip file. See below. Click extract all.



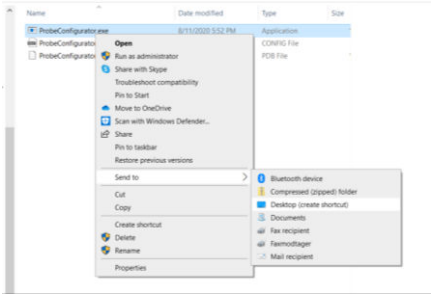
c. Select a destination folder for the program files by clicking “Browse”
In this case we selected C:\Users**Your-Name**\Documents
Where **Your_name** is the user logged onto Windows 10



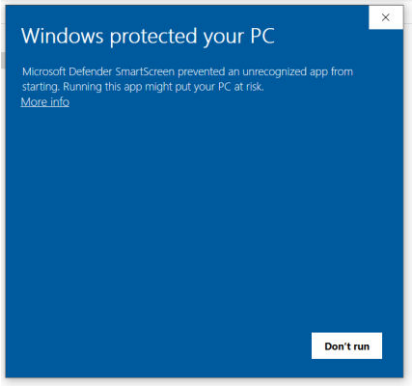
d. Click “Extract all”



The software can be installed in almost any folder.
However, if the warning to the left is shown “Destination Folder Access Denied”, please select another folder.
Otherwise you cannot save calibration data to the PC.



e. You may want to place a shortcut to the executable file on your desktop.
f. Open the installed folder: Nilotech_Calibration_Win_160
g. Right click on “ProbeConfigurator.exe” and select “Send to” -> “Desktop (create shortcut)



h. To start the program either double click the “ProbeConfigurator.exe” in the destination folder or double click the shortcut on your desktop.
i. First time you run you will see the window to the left.
j. Click “More info”.
k. Then click “Run anyway”
l. The Probe configurator software will start on your PC

Connecting the Adaptor and Probe

a. Connect the micro connector end of the USB cable to the adaptor.

b. Connect the opposite end to your PC
You should now see the Power indication lamp showing GREEN light. This indicates power is available from the PC

If Power indicator is off or RED. Please refer to Trouble shooting guide.

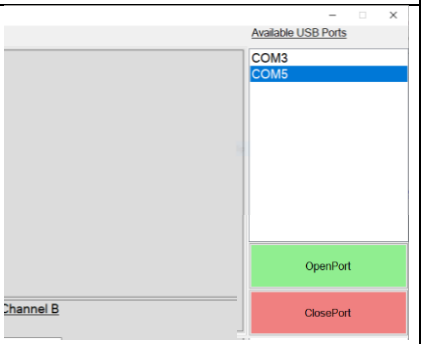
c. Connect the Nilotech Probe to the adaptor. Align the red dots and press until you hear a "click".
You should now see the Probe detection Lamp showing GREEN light. This indicates that the probe is properly connected.

If Probe detection lamp is off or RED. Please refer to Trouble shooting guide

d. After having connected the adaptor to the PC a new COM port number will pop up in the right column in the Probe configurator Program.
In this case COM5, when we connected the probe adaptor. It may be another number on your PC.

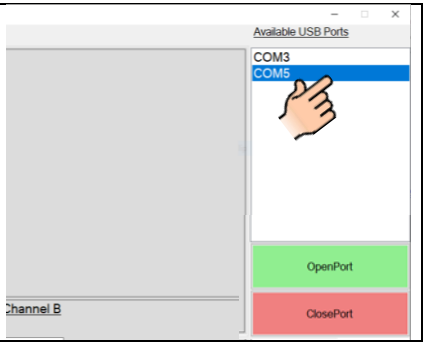
If you DO NOT see a COM port number in the right column, either:

1. Restart the PC with the adaptor connected to the USB port. Then Windows will automatically install driver or
2. Download driver package from https://nilotech.eu/calibration/ follow instructions on screen.



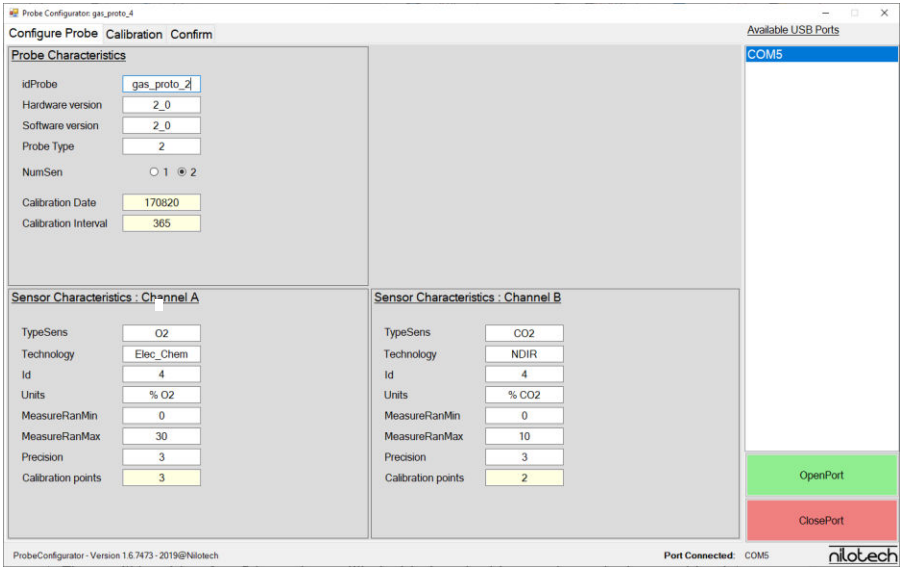
e. To Connect the software to the probe either:
   a) Double click on the COM5 or
   b) Select the COM port and then click "OpenPort"

f. If properly connected the "Configure Probe" page will show all probe characteristics. See details below in Configure Probe window.



Configure Probe window

If the probe was connected, Probe Characteristics will be shown. See below window as an example. If you do not see data in this window, please repeat the steps above or refer to Trouble shooting guide



You cannot edit any values on the “Configure Probe” window.
Top left box shows general information about the probe.
Calibration date and Calibration Interval was stored during last calibration. See the chapter Set Calibration Date
There will be either 1 or 2 lower boxes filled with data. In this case the probe is a combined O_2 and CO_2 probe and therefore shows 2 boxes with data

Type Sens:	The physical property the sensor measures.
Technology:	The technology the sensor uses to measure its property.
Id:	A customable Id which can be programmed at time of manufacturing.
Units:	The units the sensor presents its data in.
MeasureRanMin:	The low end of sensor working range.
MeasureRanMax:	The highest point of sensor working range.
Precision:	The number of decimals after the (,)
Calibration Points:	The number of points the sensor needs to be calibrated at.

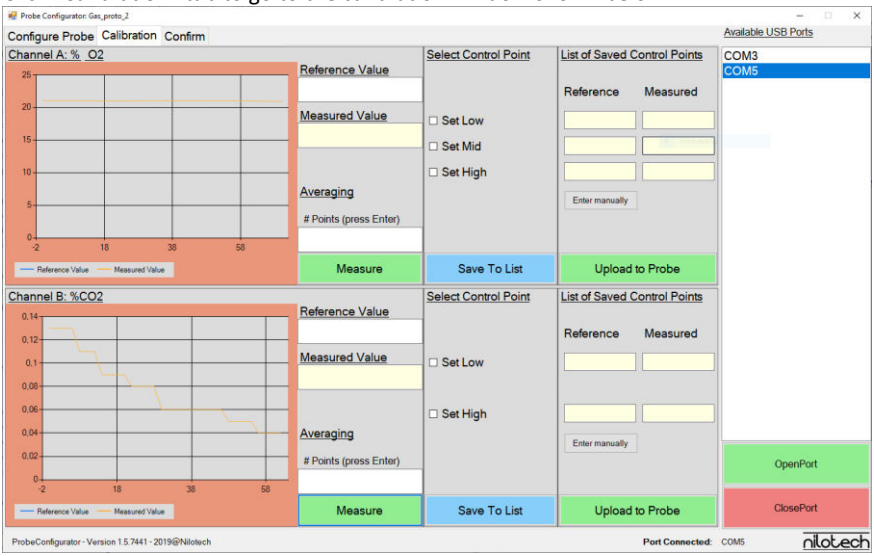
Control and Calibration

Control Probe

To start the program either double click the “ProbeConfigurator.exe” in the destination folder or double click the shortcut on your desktop.
To Connect the software to the probe either:

a) Double click on the COM5 or
b) Select the COM port and then click “OpenPort”

Click “Calibration” tab to go to the calibration window shown below.



Example: Current probe measures Oxygen (O_2) in Channel A and Carbon Dioxide (CO_2) in Channel B.

The example in this instruction uses a combined Oxygen and Carbon Dioxide probe. However, this procedure applies for any other Nilotech probe regardless of what it measures.

It is required to measure at 3 reference points to control an Oxygen sensor. Low, medium and High. The Carbon Dioxide sensor requires 2 reference points, Low and High.

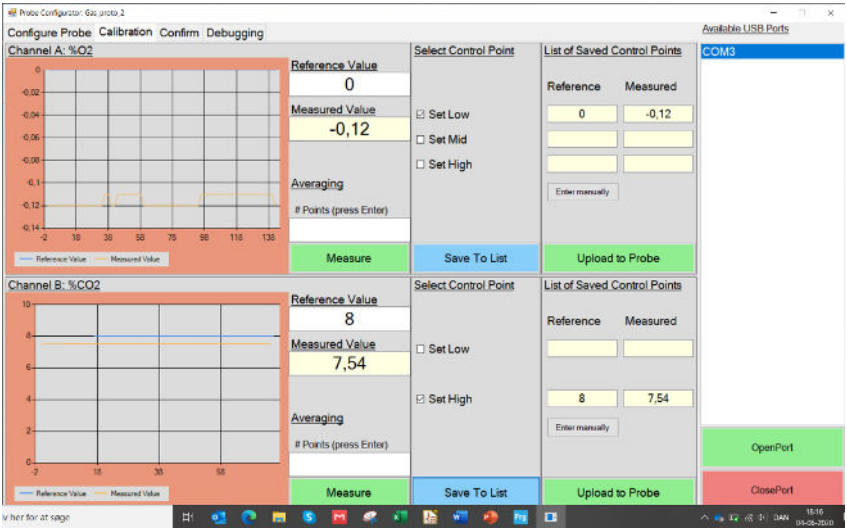
Make sure that all your references are higher than **MeasureRanMin** and lower than **MeasureRanMax**. See values in Configure Probe window.

Place the probe in first reference. This example: 8% CO_2 ,92% N_2

a) Type reference value(s) in the white box. This example: 0% O_2, 8% CO_2
b) Click Measure in Channel A.
c) Define whether the reference point is High, Mid, or low value. Click appropriate box.
d) When measurement has stabilized click “Stop”
e) Click “Save To List”.

Averaging: The system makes approximately 200 measurements per minute. By typing a number in the white box under **Averaging**, using your keyboard and press "Enter", the system will present an average of typed number of measurements.

Repeat a) to e) for channel B.
Your Calibration window should look like this:



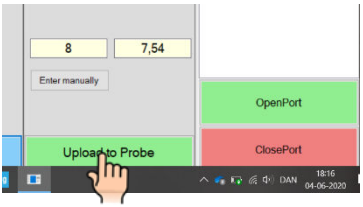
Every set of values saved to the list is remembered and can be stored to the PC later. See Confirm window below.

Repeat a) to e) for both Channel A and Channel B at remaining references.

If deviation between Reference and Measured are within accepted tolerances, no calibration is needed. You can save measured and reference values to your PC. Please go to chapter Confirm and store data. Otherwise continue to Calibrate Probe below

Calibrate Probe

Before calibrating the probe, the instruction as described above in the chapter Control Probe must be followed



To calibrate Channel A:
Check that all required sets of Measured and References are stored in the list.
Click “Upload to Probe”.
The system will acknowledge that the sensor has been calibrated.
If Channel B is available, repeat above steps for Channel B.

You may measure and upload to probe, one channel at a time, or you may measure both channels and then upload to probe afterwards.

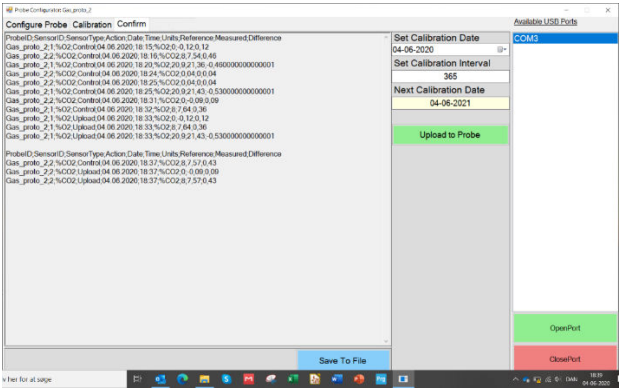
You can save uploaded values to your PC. Please go to chapter Confirm and store data.

After calibration, the probe should be controlled in one or more reference points. Please refer to chapter Control Probe above.

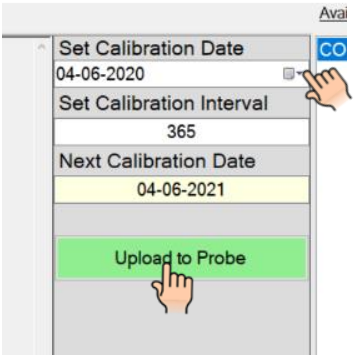
Confirm and store data

Confirm window

This window is for setting calibration date in the probe and saving all data obtained during control and calibration.



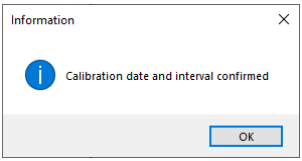
Set Calibration Date



The system suggests today as calibration date. The calibration date can be changed by clicking the small calendar symbol in upper left corner and select a date.

Important: Set calibration Interval is used by the NiloChecker to inform the user about expiration of current calibration

Factory default for calibration interval is 365 days. A shorter interval may be suitable for older sensors.
Click “Upload to Probe”.



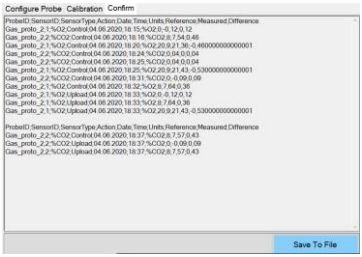
The system will confirm that calibration date and interval was saved in the probe.

Save Data to Disk

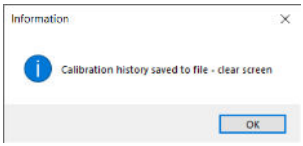
In this window the system shows all data which has been:

a) Saved to List in Calibration window
b) Uploaded to probe in Calibration window.

Data is shown as (;) separated values.

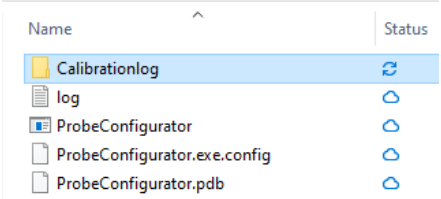


Click “Save to File” to save data on Your PC
The system will confirm that data was saved:



The system will generate a folder named “Calibrationlog” first-time data is saved.

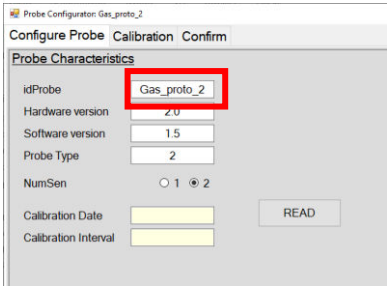
The Calibrationlog folder will be placed in the same folder as the “ProbeConfigurator.exe” file.



The system will save data as a .csv file.

The name of the file will be identical to the idProbe.

idProbe can be seen in the Configure Probe window. In the example to the right, the idProbe is: Gas_proto_2



Note that the system will continue to use the same idProbe file every time data is saved. With this function it is possible to compare recent data with older data.

Important: Do not move the folder Calibrationlog from its original location. The system will generate a new folder called Calibrationlog and a new file next time data will be stored.

View data in Excel

The . csv files may be viewed in programs such as Excel, WordPad or Notepad.
In this example we used Excel. The PC remembers your preference to the next time.

It may be required to use Excel Import function first time a .csv file will be opened in Excel. Look under “Data” tab in Excel.

Measurement data will be shown nicely organized.
Below is an example where data from “Gas_proto_2.csv” is shown in Excel.

Note the Action column. “Control” are data stored to the list, whereas “Upload” are data saved in the probe and thereby calibration data.

In the example below, the probe was first controlled, then calibrated (Upload) then controlled again and finally calibrated (Upload).

A1 ProbeID

	A	B	C	D	E	F	G	H	I	J	K
1	ProbeID	SensorID	SensorTyp	Action	Date	Time	Units	Reference	Measured	Difference	
2	Gas_proto_2	1	%O2	Control	04.06.2020	18:15	%O2	0	-0,12	0,12	
3	Gas_proto_2	2	%CO2	Control	04.06.2020	18:16	%CO2	8	7,54	0,46	
4	Gas_proto_2	1	%O2	Control	04.06.2020	18:20	%O2	20,9	21,36	-0,46	
5	Gas_proto_2	2	%CO2	Control	04.06.2020	18:24	%CO2	0,04	0	0,04	
6	Gas_proto_2	2	%CO2	Control	04.06.2020	18:25	%CO2	0,04	0	0,04	
7	Gas_proto_2	1	%O2	Control	04.06.2020	18:25	%O2	20,9	21,43	-0,53	
8	Gas_proto_2	2	%CO2	Control	04.06.2020	18:31	%CO2	0	-0,09	0,09	
9	Gas_proto_2	1	%O2	Control	04.06.2020	18:32	%O2	8	7,64	0,36	
10	Gas_proto_2	1	%O2	Upload	04.06.2020	18:33	%O2	0	-0,12	0,12	
11	Gas_proto_2	1	%O2	Upload	04.06.2020	18:33	%O2	8	7,64	0,36	
12	Gas_proto_2	1	%O2	Upload	04.06.2020	18:33	%O2	20,9	21,43	-0,53	
13											
14	ProbeID	SensorID	SensorTyp	Action	Date	Time	Units	Reference	Measured	Difference	
15	Gas_proto_2	2	%CO2	Control	04.06.2020	18:37	%CO2	8	7,57	0,43	
16	Gas_proto_2	2	%CO2	Upload	04.06.2020	18:37	%CO2	0	-0,09	0,09	
17	Gas_proto_2	2	%CO2	Upload	04.06.2020	18:37	%CO2	8	7,57	0,43	
18											
19											
20											

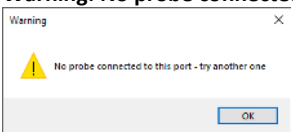
Trouble shooting guide

Configure Probe window

There is not shown any COM port after connecting the adaptor:

Check that Probe connection lamp is GREEN. Otherwise go to troubleshooting Calibration adaptor
Unplug USB cable from PC and reconnect. Wait for COM port number to appear

Warning: No probe connected

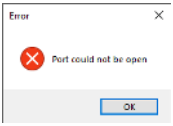


a. A wrong COM port was chosen. Unplug USB connector from PC and reconnect again. Wait for new COM port number to appear. Select new COM port number by double clicking on the port number.
b. Probe was unplugged. Reconnect the probe, wait for the COM port number, and double click the COM port number

Warning: Com Port already connected

Another version of the Probe Configurator" software is using the same port. Try another port

Error: Port Could not be opened



Connection between PC and adaptor was lost. Please check that USB cable is connected to the adaptor and PC. Check that Power indication lamp is green. Otherwise go to troubleshooting Calibration adaptor

Calibration Window

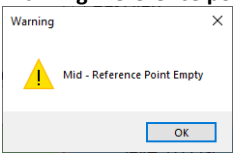
No data is shown after clicking "Measure"

a) Some probes need warming time. Please wait for data to appear.
b) No probe is connected Refer to No Probe connected warning above, or go to troubleshooting Calibration adaptor

Nothing happens when I click Save to list.

Make sure that the measurement has been stopped. Otherwise click "STOP" before clicking "Save to List"

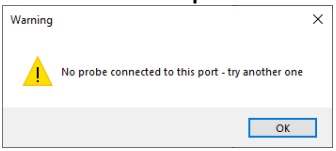
Warning: Reference point empty



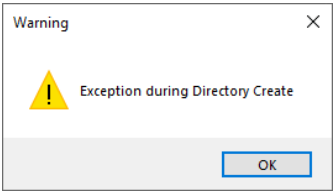
The warning indicates that some required sets of Measured and reference data is missing in the list. Save all required sets of data to the list and click "Upload to Probe" again.

Confirm Window

Warning: No Probe Connected- warning when uploading calibration date to probe.



Probe was unplugged. Reconnect the probe, wait for the COM port number, and double click the COM port number.



The "exception during Directory Create" warning is shown because the Probe configuration software was installed in a "Read only" folder in Windows 10. Please consider moving the installed directory "NiloChecker_Calibration_Win_160" to another location. For more details see chapter Install the Software

Calibration adaptor

Power indication lamp does not turn on after connection to PC.

a. Please check that USB cable is properly connected both to PC and Adaptor
b. Please check that PC is powered on.
c. USB Port on PC may be faulty. Please try another port or another PC

Power indication lamp is RED *Without* a probe connected.

a. Please check that USB cable is properly connected both to PC and Adaptor.
b. USB Port on PC may be faulty. Please try another port or another PC.

Power indication lamp is RED *With* a probe connected.

This indicates wrong voltage to probe.

a. Please check for physical damages to probe cable or housing. If damaged please send probe for repair.
b. Unplug USB cable from adaptor and reconnect. Then Try connecting another probe. If Power indication lamp remains red, please send Adaptor for repair.

Probe detection lamp does not turn on after Probe connection.

Please check that Power Indication Lamp is green. Otherwise trouble shoot Power Indication Lamp as described above. Then:

a. Check for physical damage to probe cable. If damaged please send probe for repair.
b. Try connecting another probe. If Probe detection lamp does not turn on, please send Adaptor for repair