OBSERVATOR
instruments

Manual

MET-LINK

Version: 20200225
Status: Final
Confidentiality: Not confidential
Date: 25 February 2020
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Document history

The Observator range is in continuous development and so specifications may be subject to change without prior notice. When in doubt about the accuracy of this document, contact the Observator Group.

Reference documents

Type of document / tool	Product type and name (incl. url)
Manual	MET-LINK

Revision history

Date	Amendments	Company, position
2017-04-30	Initial document creation	Observator Australia, Document Controller
2017-10-24	Updated warranty conditions	Observator Australia, Document Controller
2017-11-13	Updated product images, battery specification	Observator Australia, Document Controller
2018-04-09	Introduced document control	Observator Australia, Document Controller
2019-03-11	Replaced product images + compress document images	Observator Australia, Document Controller
2019-07-12	Quality review	Observator Australia, Document Controller
2020-01-30	Updated document format	Observator Australia, Document Controller

Procedure sign-off:

Date	Company, position	Status
2018-04-09	Observator Australia, Document Controller	Finished
2019-12-06	Observator Australia, Managing Director	Approved
2020-02-24	Observator Group, Communication Officer	Approved

Distribution list

Date	Company, position

Summary

Thank you for purchasing the new wireless MET-LINK for the Gill Maximet line of weather sensors.

What is MET-LINK?

The MET-LINK handheld solution is comprised of a Gill Maximet sensor, a MET-LINK wireless interface and a MET-LINK Android application for your Bluetooth-enabled Android device.

The new MET-LINK product allows the user to pair the Gill Maximet's weather sensor parameters to a useful and full featured tablet and phone application. The MET-LINK system can be ordered with any combination of Gill Maximet weather parameters. Gill Maximet sensors are purpose built for accuracy and use minimal power. The MET-LINK solution provides the most cost effective, portable and quick deployment Automatic Weather Station (AWS).

Simple to operate, upgradeable and can be customized with a wide range of accessories, MET-LINK is a compact field instrument. The sensor is connected to the wireless module for quick field or process reading. Logged records can be exported directly from the Android application to email, Drobox or any number of data destinations.

The MET-LINK interface module provides rechargeable power to the sensor and manages wireless communication to a Bluetooth enabled Android device. The sensor can be powered for up to 5 hours. The module is lightweight, compact and can be attached to a tripod.

The MET-LINK Android smartphone application has a large range of features that support data visualization, data logging, and data management. Data can be viewed locally (on a device) or exported in excel format via Bluetooth, email or General Packet Radio Services (GPRS) to external data servers. Logged data is time/date stamped and the location is tagged for mapping.

MET-LINK can be customized and is upgradeable. The MET-LINK handheld solution offers un-paralleled ease of use, accuracy and a very competitive price.

Download the application today and run in demo mode to become instantly familiar with intuitive operations.

Table of contents

1 Applications

Typical use of the MET-LINK device includes applications such as:

1. Quick & remote deployments.
2. Portable accurate weather readings.
3. Firefighting.
4. Tactical/defence.
5. Civil works and safety.
6. Wind related sports (paragliding).
7. Military – Unmanned Aerial Vehicle (UAV) launching.
8. Boat applications.
9. Police deployment.
10. Pollution & chemical hazard.

The MET-LINK system is a great reference tool for instant wind and weather checking. The freedom to port data directly to a phone, tablet or laptop offers the end user, work efficiencies and an ordered means of managing data.

2 Safety

For correct functioning of the Observator MET-LINK, the sensor must be set up according to the installation instructions.

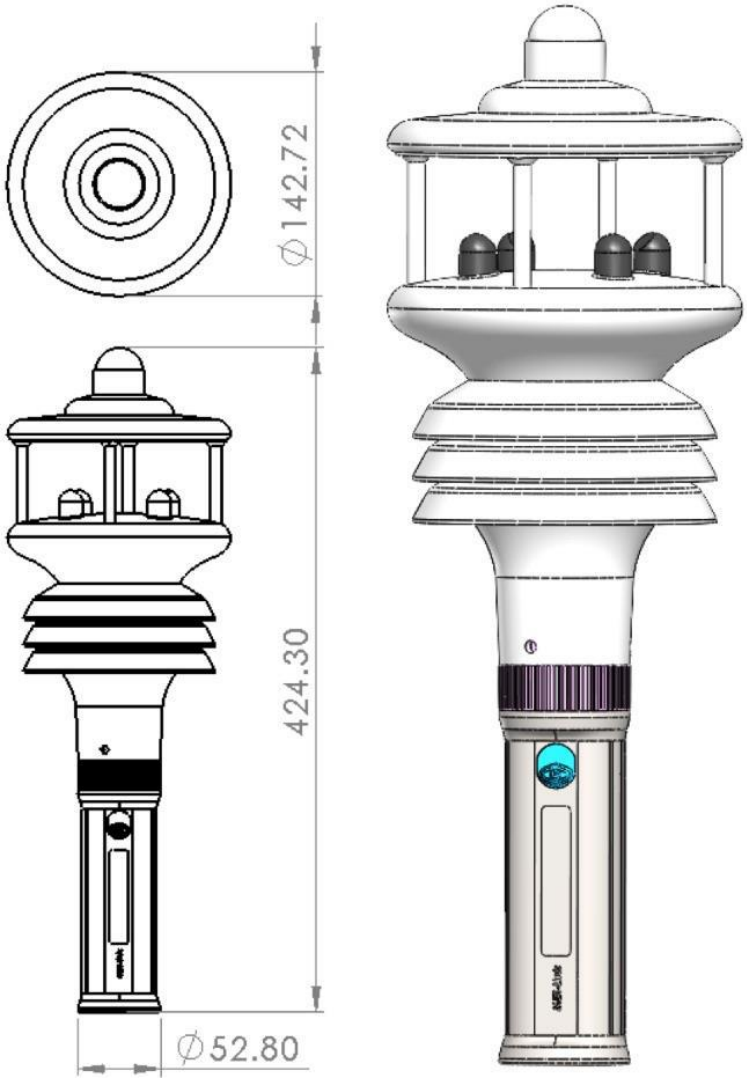
Always read and follow the Maximet instructions.

Always make sure to securely attach the MET-LINK interface module.

After end of life, please dispose this product according to your local regulations or return it to the manufacturer.

3 Specifications

MET-LINK dimensions	
Length	424.3mm
Diameter	142.72mm



Connectivity	
MET-LINK interface (Bluetooth module)	Scalable Parallel Processor (SPP) profile (up to one hundred meters)

Power supply		
Rechargeable Lithium-Ion battery	6.8Wh	(battery life ~4-5 hours of operation depending on usage)
Power supply, charges using 12V/2A power pack.		

Maximet GMX-500 (Gill sensor)	
Temperature, humidity & pressure	• Air pressure / temperature • Humidity • Naturally aspirated Ultraviolet (UV) stable radiation shield • Protection against wind-blown precipitation/dust
Wind	• Wind speed & direction • Apparent and true wind - with Global Positioning System (GPS) • World Meteorological Organization (WMO) wind averages and gust • Compass • GPS (optional) gives height above sea level, latitude and longitude
GPS (option)	• Height above sea level (m) • Mean Sea Level (MSL) pressure
Parameters	• Temperature (°C, °F, °K) • Relative humidity (% RH, g/m3, g/kg) • Barometric pressure (hPa, bar, mm Hg) • Absolute humidity (g/m3) • Wind speed (m/s, km/hr, mph, kts, ft/min) • Wind direction (°) • True/apparent wind

Android application features
Adjustable parameter visualization, wind rose, graphs
Log files have embedded location, time, date, comments and photos
Logging of comma delimited data sentence
Smart graph viewer tool
Fast data export
Battery status and charge indicator
Sensor status
Map location from device
True wind direction corrected by sensor GPS

Compatibility	
Android application for smartphone & tablet	Version 4.4 & above

3.1 Commonly used parameter specifications

Wind speed	
Range	0.1m/s to 60m/s
Accuracy	±3% to 40m/s ±5% to 60m/s
Resolution	0.01m/s
Starting speed	0.1m/s
Sampling rate	1Hz
Units	(m/s, km/hr, mph, kts. Ft/min)

Wind direction	
Range	0-359°
Accuracy	±3° to 40m/s ±5° to 60m/s
Resolution	1°
Sampling rate	1Hz
Units	(degrees)

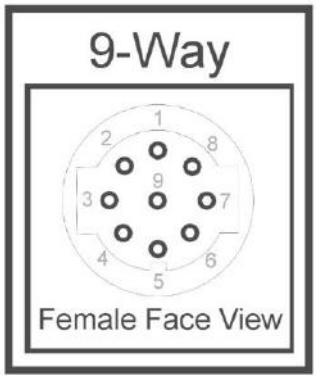
Temperature & dew point	
Range	-40°C to +70°C
Accuracy	±0.3°C @ 20°C
Resolution	0.1°C
Sampling rate	1Hz
Units	(°C, °F, °K)

Humidity	
Range	0-100%0-100%
Accuracy	±2% @ 20°C (10%-90% RH)
Resolution	1%
Sampling rate	1Hz
Units	(% RH, g/m3, g/kg)

Humidity	
Range	300 to 1100
Accuracy	±0.5hPa @ 25°C
Resolution	0.1hPa
Sampling rate	1Hz
Units	(hPa, bar, mm Hg, inHg)

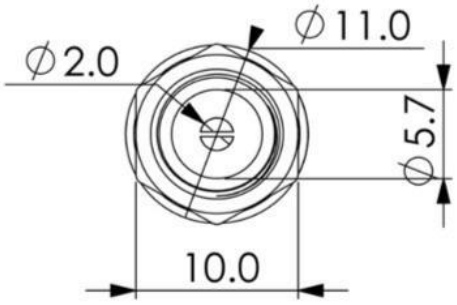
4 Pinout & wiring diagram

Used pinout for MET-LINK are:



Pin number	Meaning
#1	Not used
#2	Supply (+Ve)
#3	Supply (+Ve)
#4	RS422/485 (TxD+)
#5	Not used
#6	RS422/RS485 (RxD+)
#7	Not used
#8	Not used
#9	Not used

Charging connector configuration:



Output
12.0V
1.0A

5 What you will find in the box

When the product is delivered, this is what you will find in the box:

Items found in the box	
Maximet sensor **GMX-550**	
MET-LINK interface module	
Charging cable **MET-LINK-CHARGE**	
Hex key	
Standard Li-Ion battery **MET-LINK-BATT**	

6 Accessories

Observator Instruments offers a wide range of accessories for the MET-LINK range of products. These are directly available from the website also.

Accessories	
Spare Maximet sensor **GMX-550**	
Spare charging adapter **MET-LINK-CHARGE**	
Spare Li-Ion batteries **MET-LINK-BATT**	
Case **MET-LINK-CASE**	
Spare Bluetooth MET-LINK interface module	

7 Installation

7.1 Installing the sensor for the first time

To install the Android application on your smartphone, use the following link, download and install the ".Apk file" (for smartphones):

Download & install MET-LINK application

1. Unscrew the back cover of the MET-LINK interface module using the hex-key provided. Switch on the "long term storage switch" using a small screw driver/pin.

Connect the Li-Ion battery to the MET-LINK interface module (normally installed when provided). If not, please follow the instructions described in the **chapter 10:** "Maintenance & calibration" **section 10.1:** "Battery replacement".

Note: If storing the wireless interface for more than six months, please power off the device.

2. Connect the MET-LINK sensor to the Maximet module by matching the pin.

3. Press on the MET-LINK interface module button and notice the blue Light-Emitting Diode (LED) indicator is flashing. If you cannot see the blue flashing indicator light, it means the MET-LINK interface module is not powered.

Note: In the event where the indicator is not lighting up, ensure that the MET-LINK interface module has enough battery (refer to the "Charging the battery" **section 7.2** of this manual) and ensure that the long term storage switch inside the Bluetooth module is on.

LED status	Colour	Meaning
Flashing blue		Bluetooth available for pairing
Flashing green		Device is paired
Flashing red, blue, green		Battery is charging or charged
No LED		MET-LINK interface module off
Flashing green, red, blue, off		MET-LINK is being powered off

4. Run the application go to the **chapter 8:** "Android application interface" of this document.

7.2 Charging the battery

1. Connect the provided charging adapter to the MET-LINK interface module and apply power.

2. At any time, you can monitor the charging status of the module by pressing on the MET-LINK interface button. The LED indicator is flashing blue, green and red to indicate that the battery is charging.

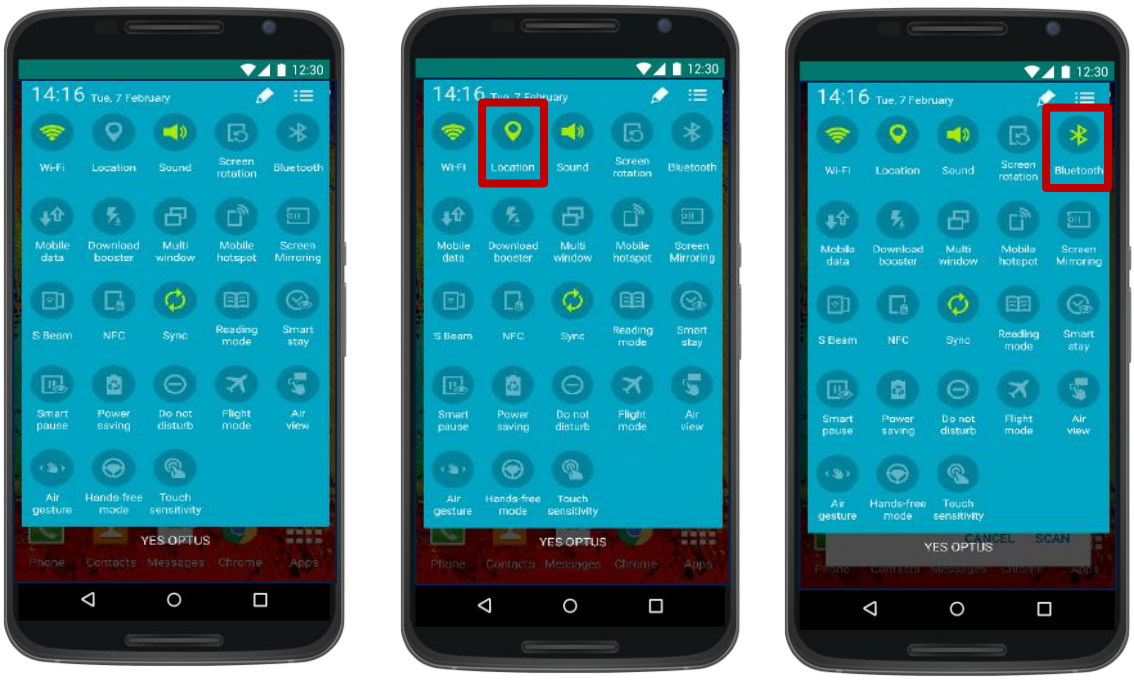
3. We highly recommend to use the application to monitor the battery level, please refer to **section 8.12:** "Read the Bluetooth battery level" in the **chapter 8:** "Android application interface".

Note: The best way to verify if the battery is fully charged is to use the Android application to monitor the battery level. The user should expect that the charge will take ninety minutes and up to three hours of charging if the battery is fully flat.

4. When the battery is fully charged, disconnect the charging cable.

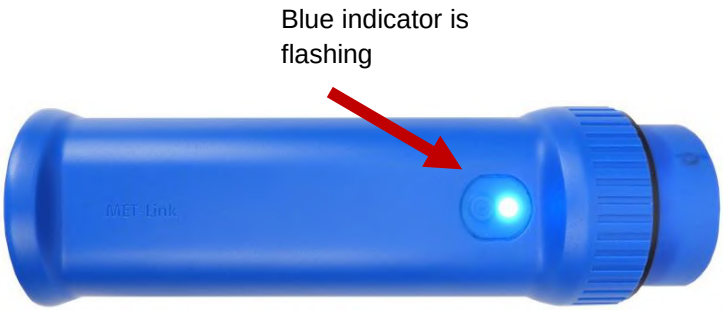
8 Android application interface

8.1 Activate the GPS location & Bluetooth



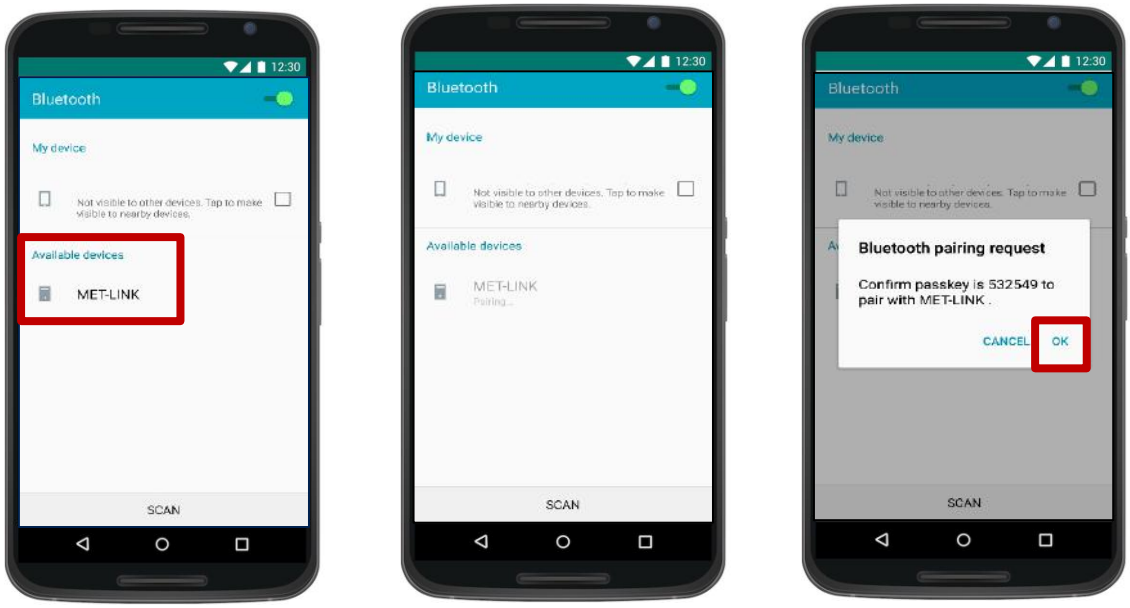
1. Go to your phone options
2. Activate the GPS location of your phone
3. Activate Bluetooth

8.2 Pair the sensor via Bluetooth

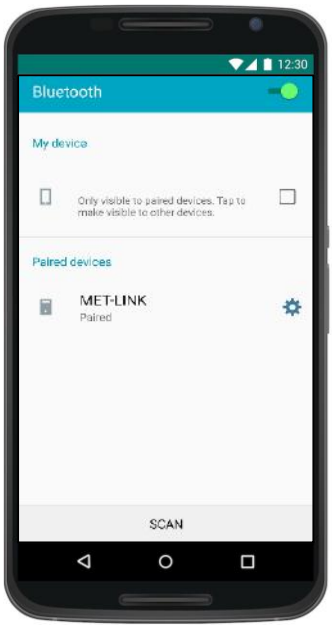


After having activated the Bluetooth on your phone:

1. Turn on the MET-LINK interface by pressing on the blue button. Make sure that the blue LED indicator turns on.

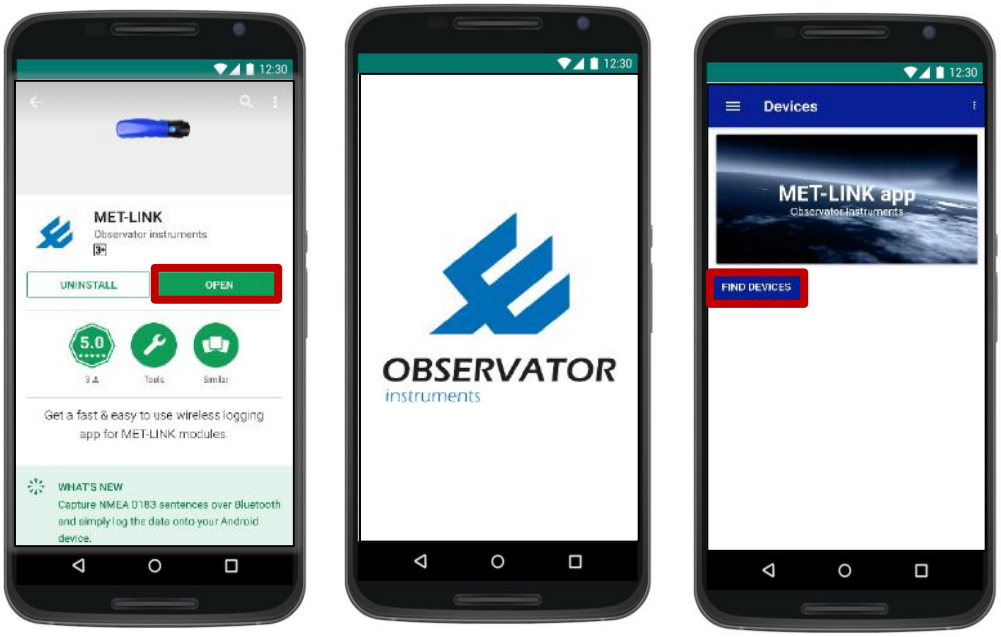


Note: Step 2 to 5 are to be completed only at the first time when you connect a new sensor.



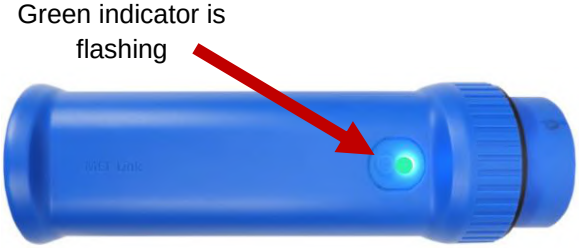
2. Go to the Bluetooth settings, scan to find the new device. Select the new sensor to pair and press pair.
3. Wait while pairing the sensor.
4. Allow pairing by pressing “OK”.
5. The sensor is now shown as paired. You can now run the MET-LINK application.

8.3 Launch the app & connect to sensor

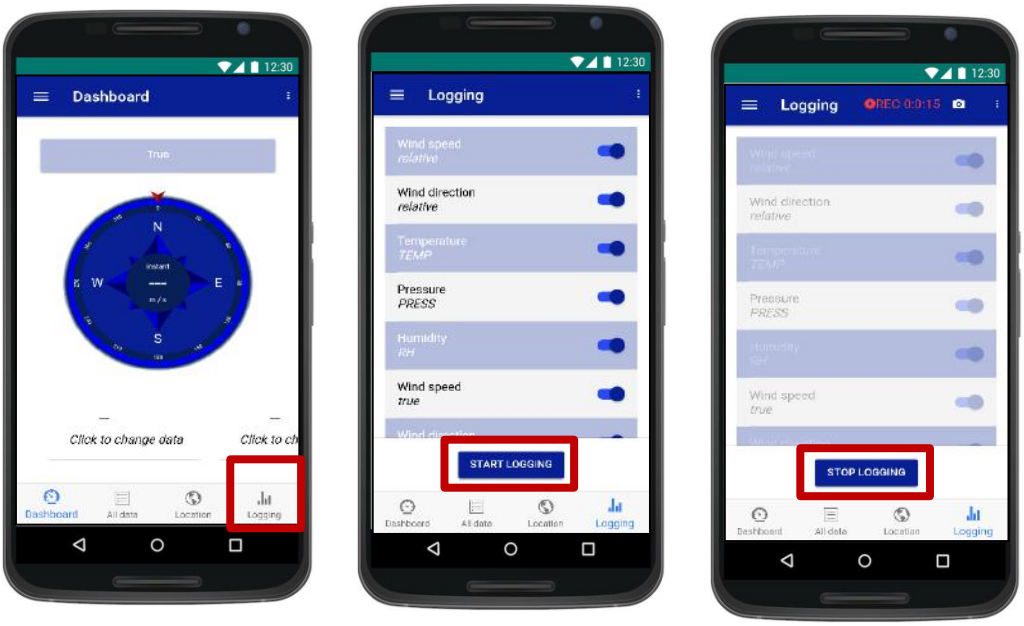


1. Search for “MET-LINK” application in Google Play store or alternatively scan the QR code below. Download and open the software.
2. Wait for the app to load.
3. Search for the device to connect to by pressing on “Find Device”. If you cannot see the device, make sure that the MET-LINK interface module is available and the blue LED is on.
4. Select device from the available list. You will notice the LED indicator turns green when the app is successfully connected to the module

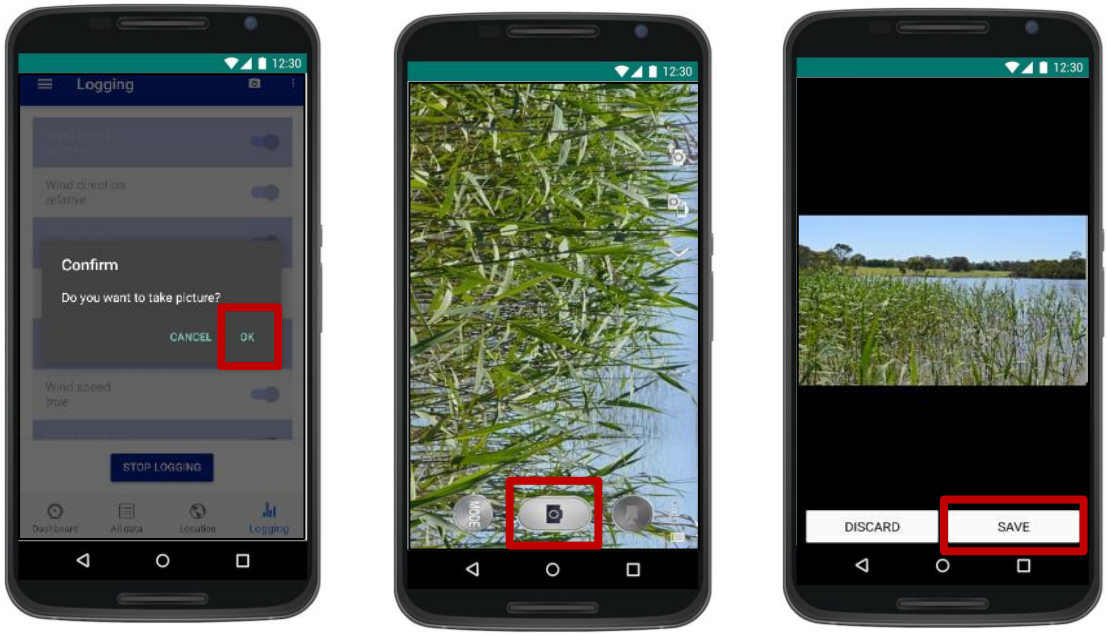
Note: If you want to turn off the module, make sure you disconnect the wireless module from the application.



8.4 Record data

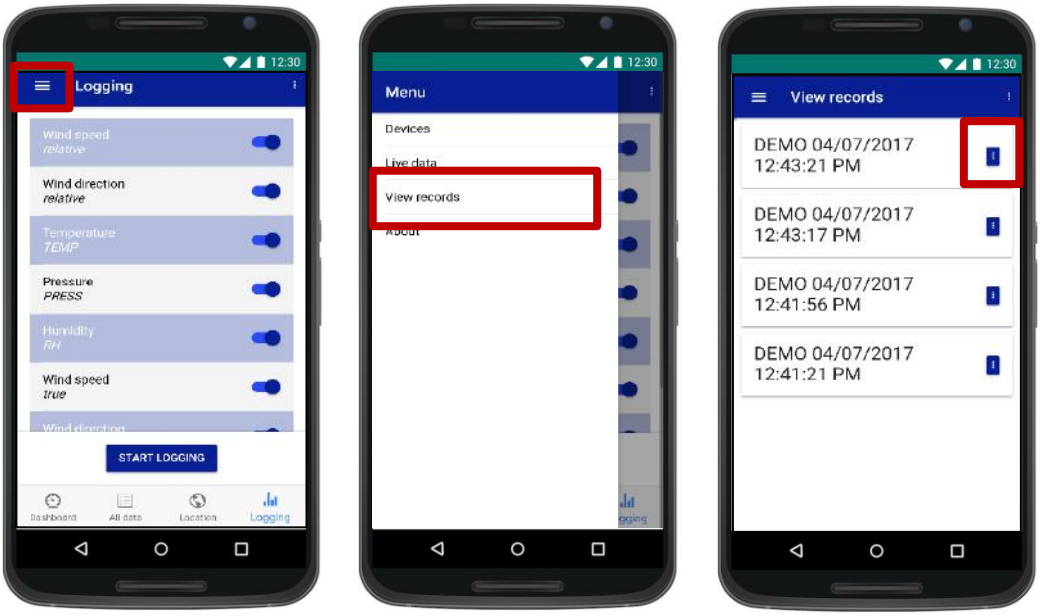


1. When connecting to the sensor for the first time, wait for few seconds in order to load the data and select “Logging” menu.
2. Press on “Start Logging” to start the record.
3. A record message will be displayed while recording. Press “Stop Logging” when required.

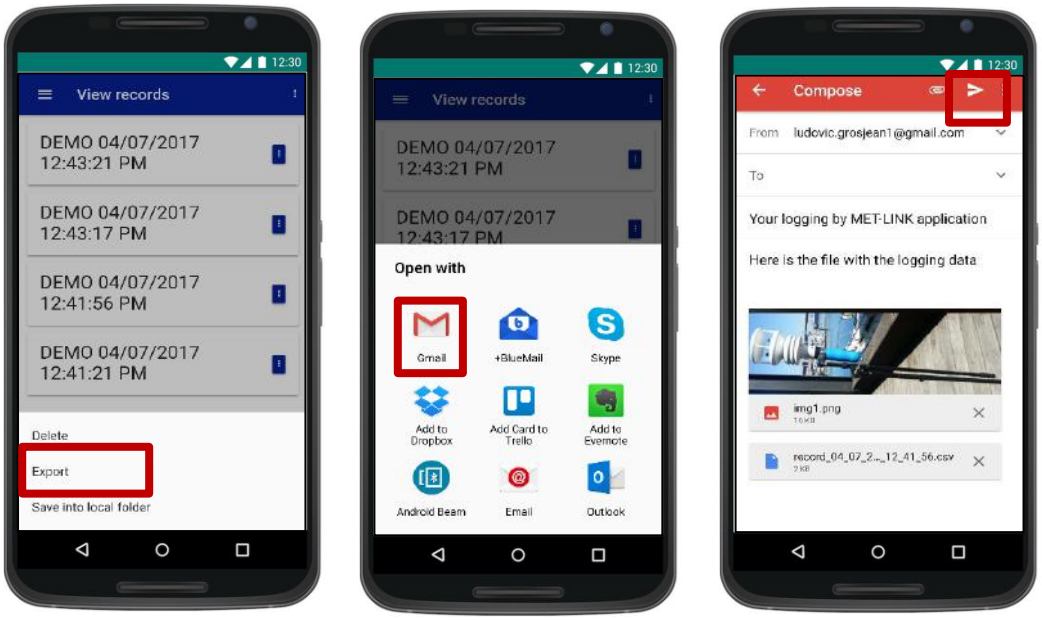


4. If the user did not take a picture, the application will offer the user to record a picture on the database, press “OK”.
5. Take a picture.
6. Press “SAVE” to save the picture in the database. Alternatively press “DISCARD” to take another picture.

8.5 Export data

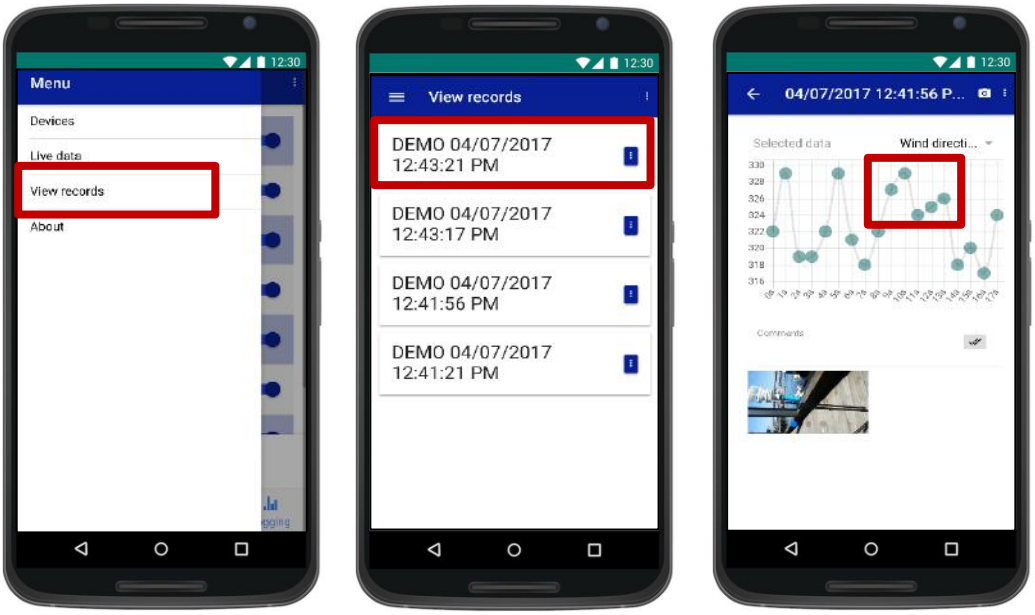


1. Go to the menu page by clicking on the left-hand side icon.
2. Select “View records” menu.
3. “View records” menu will display the records available from the most recent to the oldest. Click on the icon of the selected record to display options.

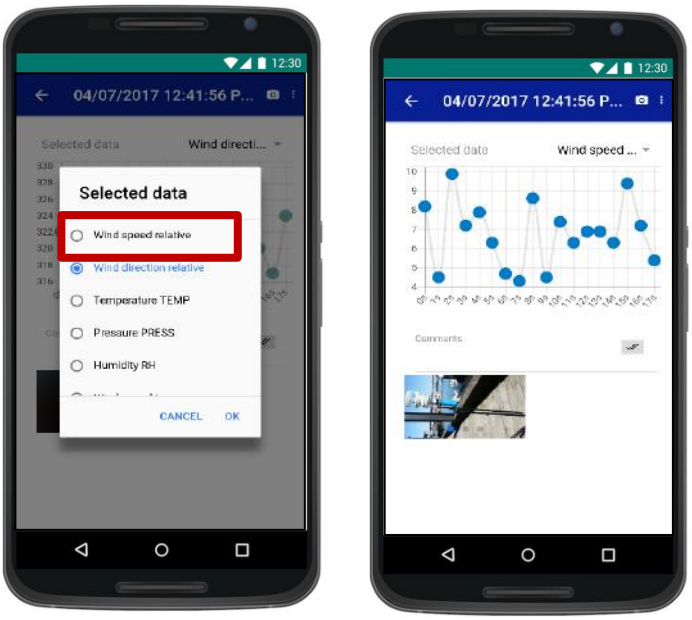


4. Select “Export” option.
5. Select your export method.
6. Compose your email including the recipient and click on the send button to send the log file and the pictures attached.

8.6 View a record

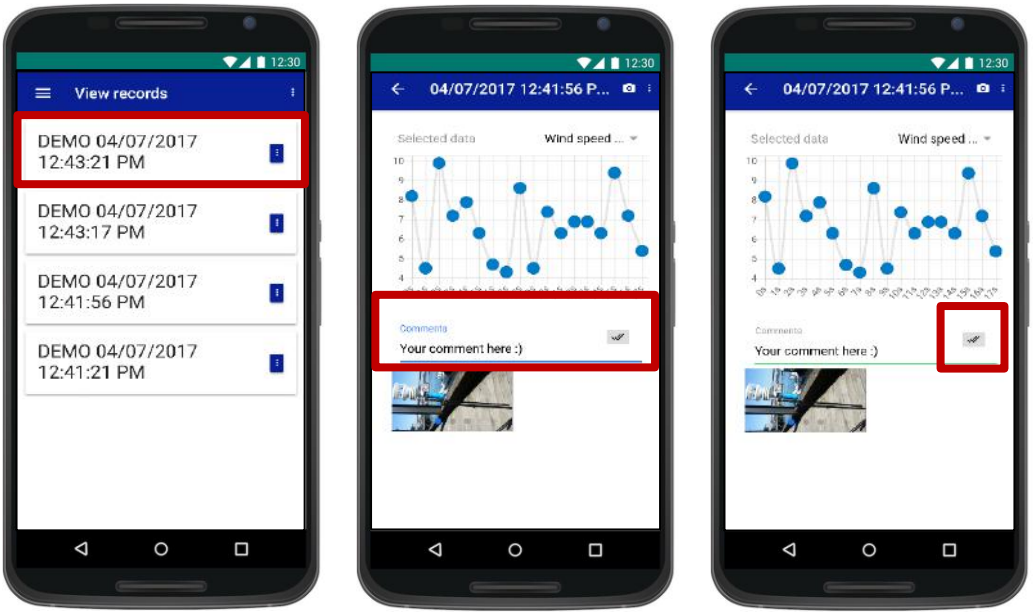


1. In the menu select “View records” menu.
2. “View records” menu will display the records available from the most recent to the oldest. Click on any record to display the logged data.
3. The reading displays a record of all wind measurements. Click on the graph to access individual measurements. Alternatively, click on the drop-down menu to select which graph you want to visualize.



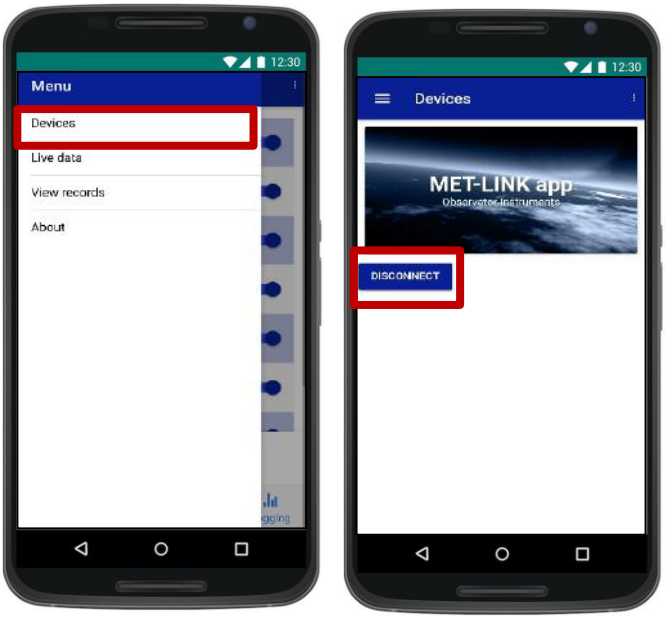
4. Select which graph you want to display from the available choices.
5. Scroll down to see attachments (pictures), GPS map or comments.

8.7 Comment on a record



1. Follow steps 1, 2 of the previous section “View a Record”.
2. Type your comments in the “comments box”.
3. Press the green icon to save your comment.

8.8 Turn off MET-LINK interface



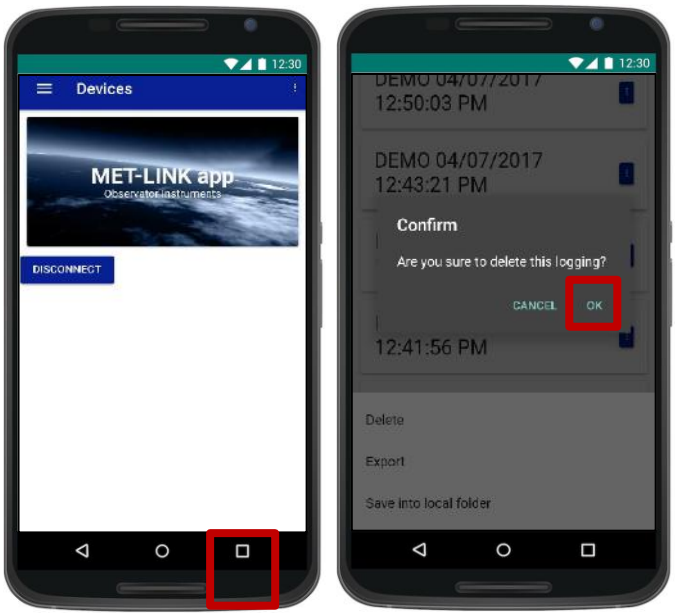
We highly recommend to disconnect the wireless when not taking measurements.

1. In the menu select “Devices” menu.

2. Click on “DISCONNECT” button to disconnect the sensor. This will immediately turn off the MET-LINK interface module and turn off the Bluetooth LED indicator.

Note: Unplugging the sensor from the wireless device will not turn off the module.

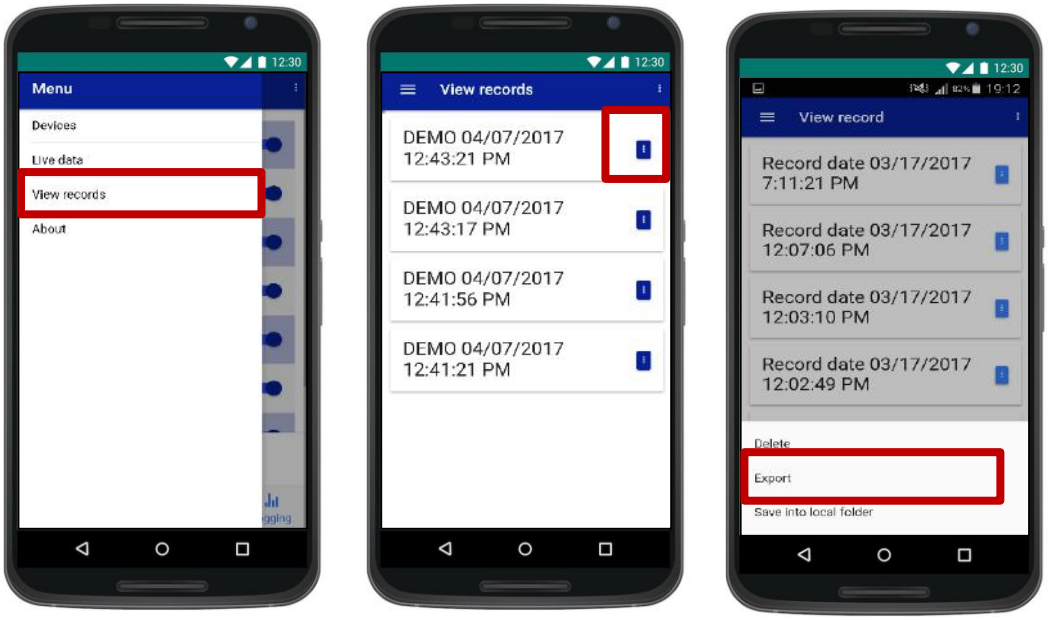
8.9 Quit the application

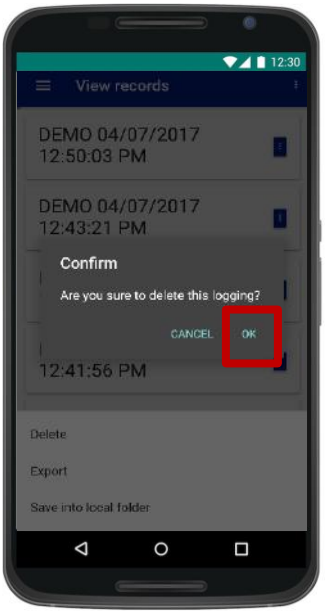


1. You can quit the application at any time by pressing on the return button of your phone.

2. Click on “OK” to confirm that you are ready to shut down the application. This action will immediately turn off the MET-LINK interface module.

8.10 Delete a record





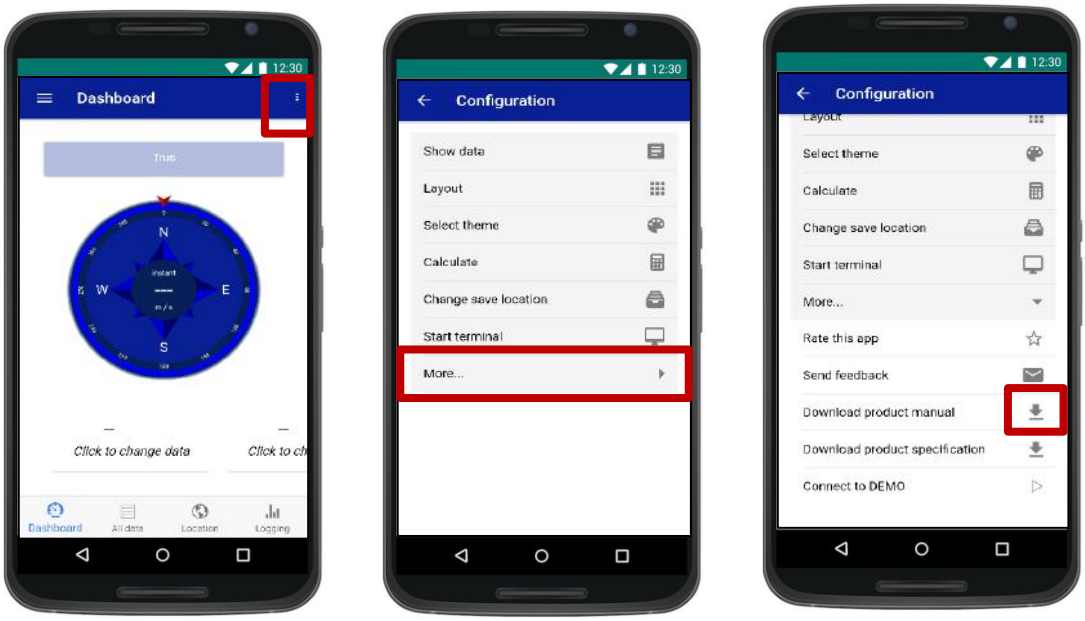
1. On the menu, select “View records” menu.

2. “View records” menu will display the records available from the most recent to the oldest. Click on the icon of the selected record to display options.

3. Select “Delete”.

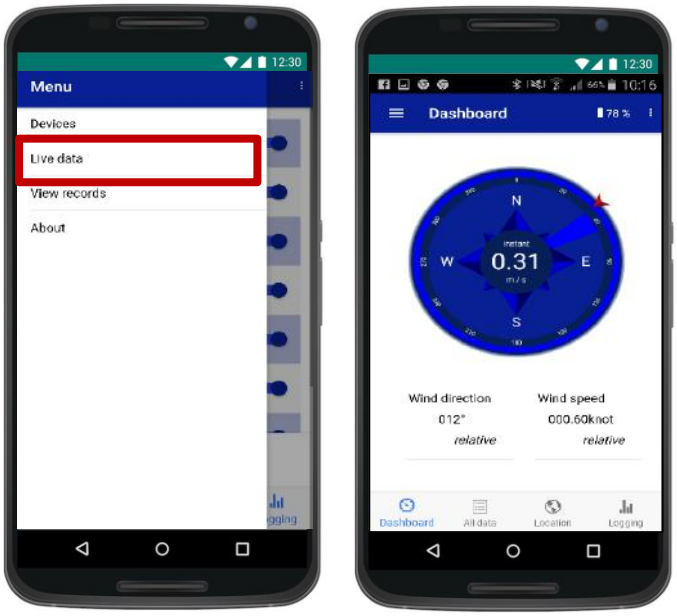
4. Select “OK” to confirm and delete data.

8.11 Access additional information



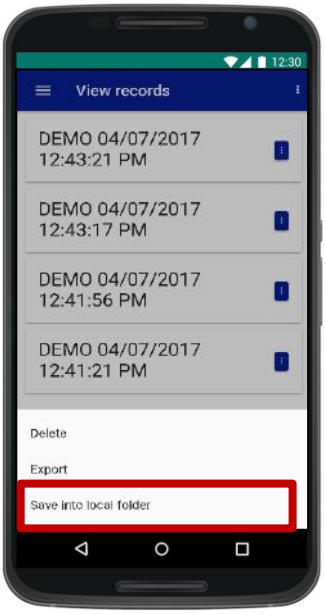
1. On the dashboard page, click on the top-right corner.
2. Select “More” to access the drop-down menu.
3. Documentation links are available on the “Download” buttons.

8.12 Read the Bluetooth battery level



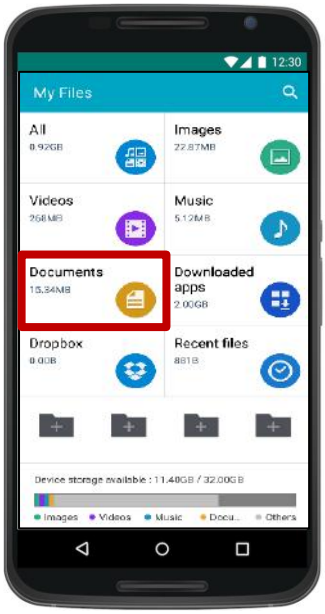
1. On the menu page select “Live data” menu.
2. The battery level is displayed in the top right-hand corner.
3. When Bluetooth Interface module is charging, sensor real-time data is no-longer available.

8.13 Export in local folder



1. Follow steps 1, 2, 3 of the section “Export data”. Press on “Save into local folder”.

2. The exported record will be automatically saved into your local folder.



3. To open the file, search on your local folder.
4. Select and open the “.csv” file using Excel or equivalent.

5. Open the “.csv” file to view the logged data.
The file name includes the date and timestamp of the recording. Comments and picture names are displayed in the header. Wind speed, wind direction, temperature, pressure, humidity, longitude and latitude data are displayed in columns according to the timestamp.

9 Deployment

9.1 How to deploy sensors

1. Start by considering the environment of operation: always wear appropriate safety equipment in safe operating conditions.

2. Install the module on the tripod and make sure the sensor is securely attached and steady.

NB: In a simple application, the sensor can be held while performing the measurement.

3. At any time, you can use the Smartphone application to connect to the sensor (refer to chapter 8 “Android application interface" of this document). In the case you cannot see live data, disconnect and reconnect the sensor to the MET-LINK interface module and start the application again.

Note: We highly recommend to verify the reading by doing the measurement twice for data redundancy purposes.

9.2 Retrieve the sensor

Carefully remove the sensor from the tripod. Make sure the sensor is dry and store the sensor in appropriate conditions. After each use, do not disconnect the sensor from the Bluetooth interface module.

10 Maintenance & calibration

10.1 Battery replacement

1. Please unscrew the cover of the Bluetooth interface module.

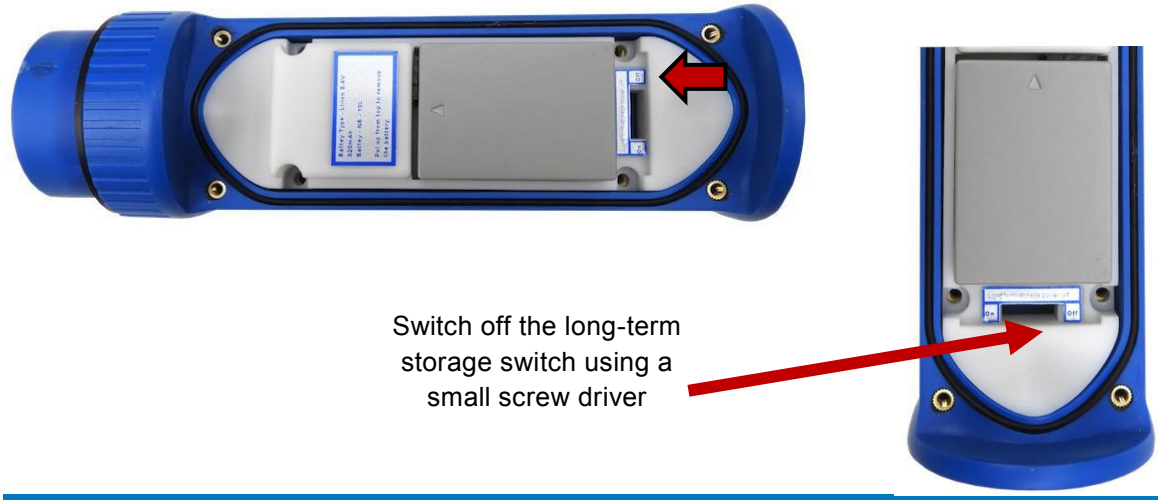
2. Disconnect the Lithium-Ion battery pack by pulling the battery up.

Warning: remove the battery gently in order not to bend the charging pins.

3. Connect the new battery in the holder. Finally, screw the cover.

10.2 Long term storage

In order to increase the life-expectancy of MET-LINK products, we highly recommend to switch off the long-term storage internal switch of the Bluetooth interface module.



Note: The internal switch should be only used to turn off the unit if the device is in storage more than 6 months or when transporting by air. Normally it is best to leave it on the “ON” position with the cover closed at all times.

Since 1924 Observator has evolved to be a trend-setting developer and supplier in a wide variety of industries. Originating from the Netherlands, Observator has grown into an internationally oriented company with a worldwide distribution network and offices in Australia, Germany, the Netherlands, Singapore and the United Kingdom.