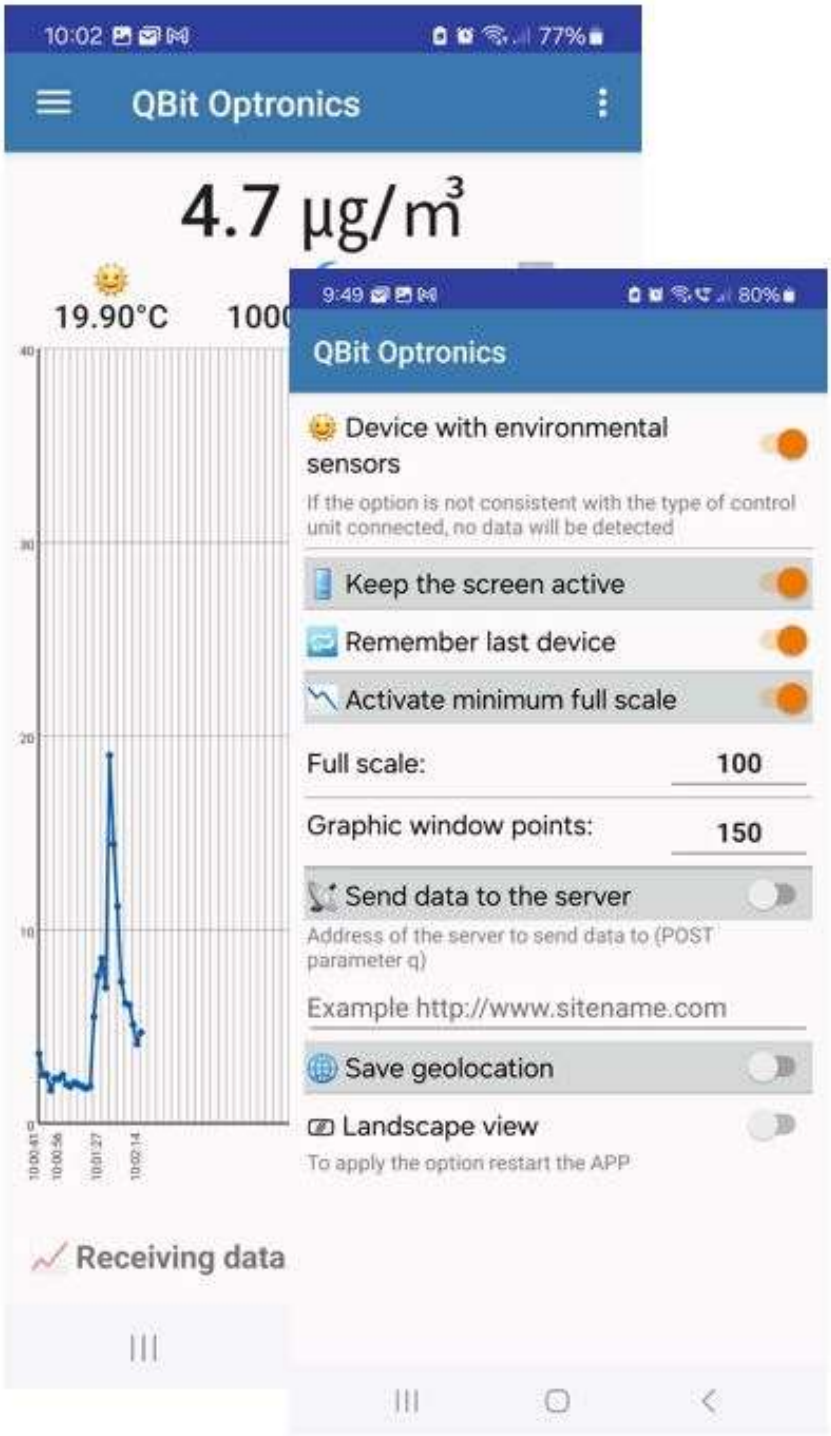
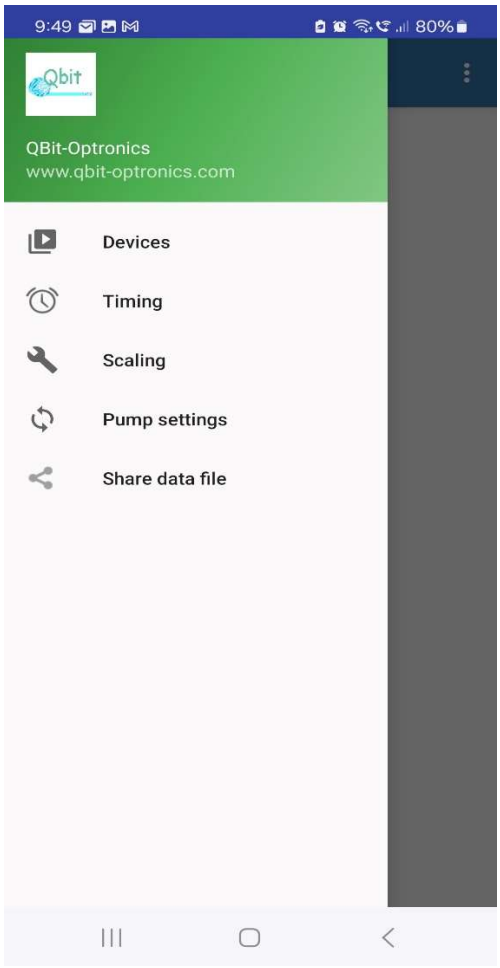
QBIT Android APP
to control PM measuring devices

Ver 2.x.x for Android 8 or higher





Device Menu

Devices

Gives a list of instruments paired with the Android device

Timing

Allows setting of measuring time and zero-calibration interval.

Scaling

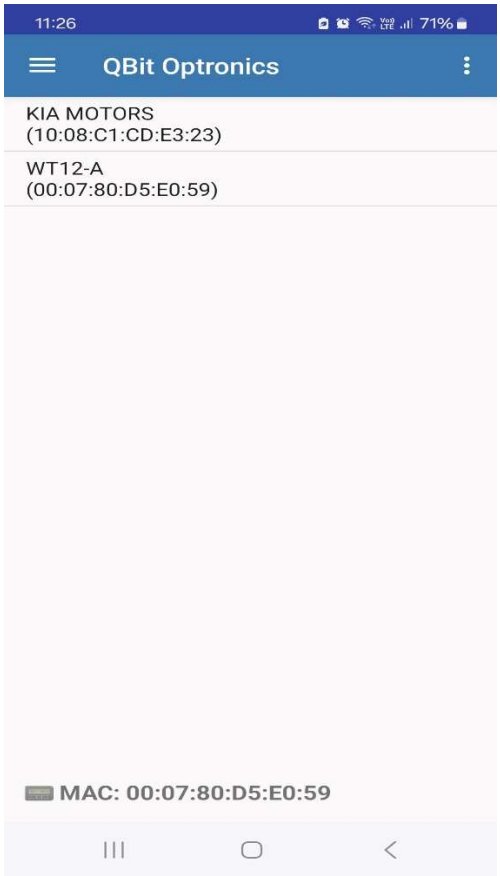
Allows setting of scaling the output values (span calibration).

Pump settings

Allows setting of the pump power (in %) in order to select the correct air flow.

Share data file

Gives a list of data-files that can be sent via the available APPs in the Android device (such as: Google drive, WhatsApp, Gmail and so on)



Connection

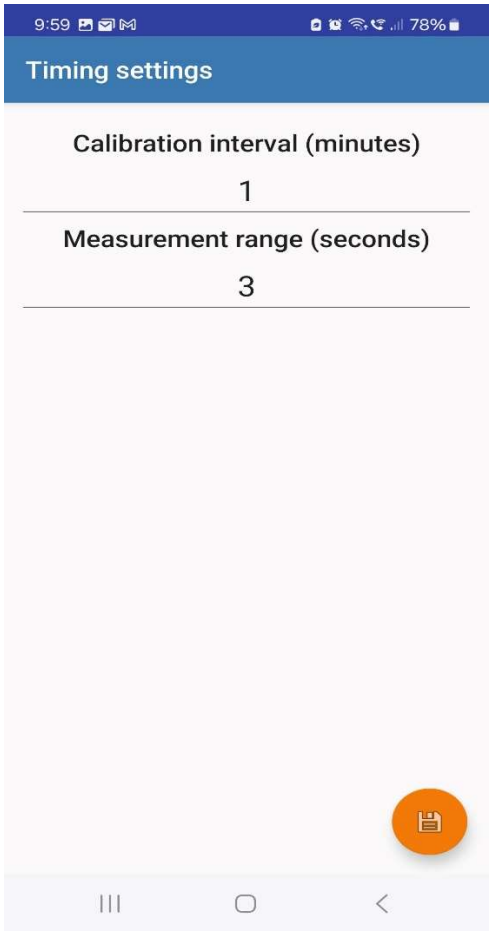
Select the PM measuring instrument in the list of paired devices of the Android system.

Bluetooth must be active on the Android system, and the PM measuring instrument must be on and in the range of the Bluetooth connection.

The default name of a new instrument is (WT12-A). One can change the name by a long tapping on the item to modify.

Successful Connection

When a successful connection is obtained, the Start button appears along with the serial number of the connected instrument.



Timing Settings

Here the measuring time (Measurement Range) and zero-calibration interval can be selected.

Tap on the save button located in the bottom right corner of the screen in order to confirm the selected timing values. In this way the selected values are transmitted to the instrument from the Android device.

Scale settings

g1 represents a scale factor for the PM measure
g2 represents a scale factor for the T measure
g3 represents a scale factor for the P measure
g4 represents a scale factor for the rH measure

The offsets are defined analogously.

Tap on the save button located in the bottom right corner of the screen in order to confirm the selected timing values. In this way the selected values are transmitted to the instrument from the Android device.

Preferences Menu

Device with environmental sensors: please select this button if the connected instruments has the optional environmental data (T, P and rH).

Keep the screen active: please select this button to keep the screen on during the entire measuring operations.

Remember last device: allows a fast connection to the last instrument used by tapping on the central button of the starting screen (please read the following screen description).

Activate minimum full scale: sets a minimum full scale (default 30). Scale is changed if data overcome this value.

Graphic window points: sets the number of measurements displayed on the screen (default 15)

Send data to the server: activate real time sending of measurements to a server. The server URL is to be written on the dedicated row. ▶ **Data are sent with a POST method with a "q" variable. The Android system must have an active Internet connection.**

Save geolocation: enables to append the longitude and latitude data to the measurement data string (▶ **The android system must have an active geolocation**)

Landscape View: The APP will apply a landscape view independent from the Android setting. (▶ **To apply this option the App must be closed and started again).**

Starting the APP with the “Remember last device” option

In this case the connection to the PM measuring instrument is easily obtained simply tapping on the button that appears at the center of the starting screen.

The Android system must have an active Bluetooth connection. The PM measuring instrument must be on and in the Bluetooth range.

Data Format

Column order and heading

date and time; PM; temperature; pressure; humidity; serial number; Latitude, Longitude
For example:
20/08/2018 10:49;10.5;28.39;1001.24;560.68;1D-053;46.0997875,13.102892

Latitude and longitude may not be present if the option is not active. If there are null values (null,null), check that the Android device has geolocation activated.

The file extension is .txt but the file is formatted according to csv file specifications (separator ;)

Sending data to a server, specifications

To send data in real time to a server, in addition to the availability of an internet connection, it is necessary to specify the address to which to send the data as specified above.

The data is sent with variable POST q method. In the event that the connection is interrupted, the data is queued and retransmitted at the first available opportunity. The server must respond with OK to confirm receipt of the data.

A basic example of a php script that receives data is the following

Example of URL address entered in the appropriate space in the preferences (complete with protocol):
http://www.sitename.com/qbit/dati.php?token=1234567

Php file data.php that receives and saves the data in a file (but it could also be a DB):

```
<?php

  //   q contains data separated by ; ending with a carriage return \r
  $q = htmlentities($_POST['q']);

  // Optional parameter, such as a GET method identification token
  $token = htmlentities($_GET[token]);

  // n data ending with \n are appended to a file named datafile.txt
  $file = fopen("datafile.txt", "a");
  fwrite($file, $q."\n");

  // the file is closed
  fclose($file);

  // The server must respond with OK to confirm receipt of the data
  echo "OK";

?>
```