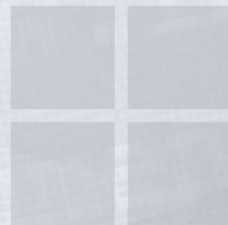


ADDRA Control Tool application

User manual



Contents

1	Purpose	4
2	System requirements and Installation	4
2.1	System requirements	4
2.2	Installation.....	4
3	Application User Interface.....	4
3.1	Devices window	4
3.2	Device Information.....	7
3.2.1	<i>SET VALVE STATE</i>	9
3.2.2	<i>SET TEST MODE</i>	12
3.2.3	<i>SET LORAWAN PARAMETERS</i>	12
3.2.4	<i>THRESHOLD</i>	15
3.3	Profiles.....	20
3.4	Device Update	24

Revision History

Version	Date	Author	Description
1.0	27.02.20	Valentin Acbiic	Original document.
1.1	07.02.23	Nadejda Sirbu	Section 1, 3.1, 3.2, 3.3 updated.
1.2	30.06.23	Nadejda Sirbu	Section 3.2 updated. Section 3.2.5 added.
1.3	25.07.23	Nadejda Sirbu	Section 3.2.6 added.
1.4	12.03.24	Nadejda Sirbu	Revised all screens, section 2, 3.2, added section 3.2.4 SET LORAWAN MODE, corected section 3.2.4 to 3.2.5, section 3.2.5 to 3.2.6, section 3.2.6 to 3.2.7
1.5	12.06.24	Nadejda Sirbu	Revised section 3.1, 3.2
1.6	11.09.24	Nadejda Sirbu	Revised document according to the new ADDRA Control Tool software versions (version 19, 20, 21, 22)
1.7	23.01.25	Nadejda Sirbu	Revised Section 3.2.1
1.8	24.04.25	Nadejda Sirbu	Revised Section 3.1
1.9	12.06.25	Nadejda Sirbu	Revised document according to the new ADDRA Control Tool software versions (version 29)
1.10	09.07.25	Nadejda Sirbu	Revised document according to the new ADDRA Control Tool software versions (version 30)

1 Purpose

The given user manual describes the managing of the ADDRA water meter (hereinafter referred to as meter) and associated flow control valve (valve) using the ADDRA Control Tool mobile application (application).

2 System requirements and Installation

2.1 System requirements

System requirements:

1. Mobile device with operating system Android v.5.1 and higher.
2. Bluetooth Low Energy (BLE) v.5.0 and higher.

2.2 Installation

Usually, for security reasons, Android blocks installation of third-party applications on your mobile device. Therefore, before application installation, make sure that third party applications are allowed on your mobile device. For most mobile devices perform the following: go to **Menu > Settings > Security > Unknown Sources** > allow your mobile device to install applications from sources other than the Google Play. Note that the steps can differ depending on your mobile device. If no such menu is found, then check your mobile device documentation.

To install or to update the application, do the following:

1. Start the file with *.apk* extension.
2. Tap the **Install** button and wait until the application is installed (updated) successfully.
3. Start the application by tapping its icon.
4. Allow the application to access the mobile device location, photos, media and files by clicking **Allow** button.
5. The main window of the application will be displayed.



3 Application User Interface

3.1 Devices window

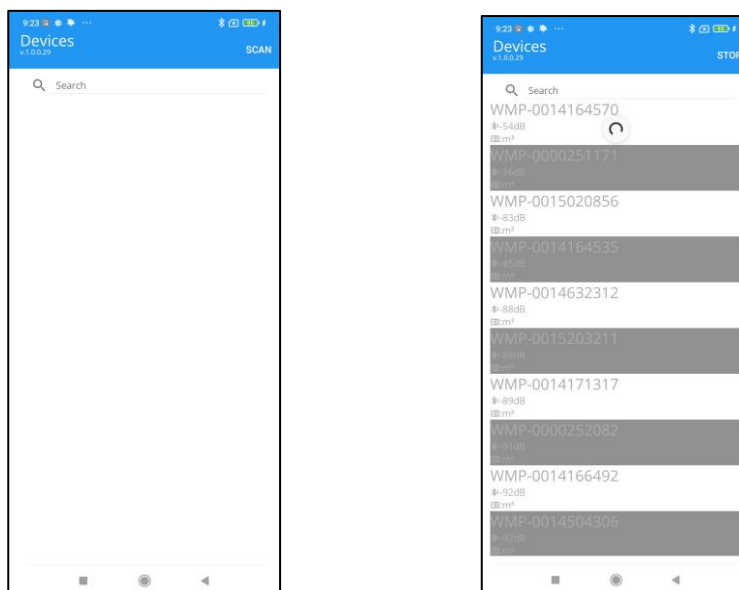
It begins with the list of devices.

NOTE: The list consists of the meters. For all these meters the GET INFO function is activated.

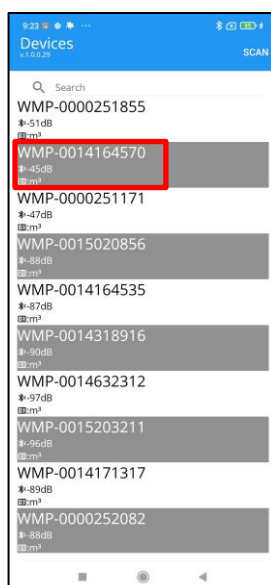
The meters are from the previous connection session. This applies for the meters, which are not forcibly removed.

Tap the **SCAN** button to add a meter to the application. The meters within the range will appear in the device list. Every time you start working with a new device or begin a new part of the configuration tap the **SCAN** button.

NOTE: Make sure that the meter and mobile device are in range of each other. Verify the BLE is turned on and the meter is not connected to another software.



To delete the meter, tap its name and pull it to the right, tap the **Delete** button. It is recommended to clear the list of devices. To improve the functionality - delete the unused meters. Tap the name of the meter you want to operate.



The application menu for the respective meter is presented.

The menu is divided to the several sections:

- Info;
- Profiles;
- Setup;
- Update.

The screenshot with the respective menu is presented below.



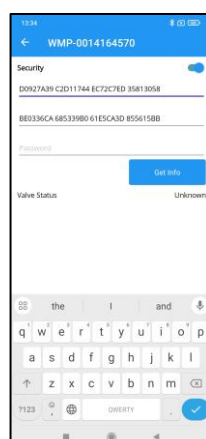
For the detailed information about each section, see the chapters 3.2, 3.3, 3.4.

For the water meters with the soft version v8143a and the next versions, the Security function is implemented optional, depending on firmware version. To activate this function, it is necessary to tap the button indicated as follow.



Encryption is used to provide confidentiality for data to be stored and transferred. AES-GCM-128 (Galois/Counter Mode of operation of AES-128 encryption algorithm). Security Suite ID: 0 is implemented for data encryption and authentication, and key transport methods.

The meter access is regulated by passwords and keys. The current implementation supports mutual authentication by key management. Below is presented the example where the Global Unicast Key and the Authentication Key Security is used. It means that each time you begin the functional manipulation with the application, you are obliged to input the Global Unicast Key and the Authentication Key in the



respective windows. These two keys are unique to each water meter and are supplied by the manufacturer in the special file.

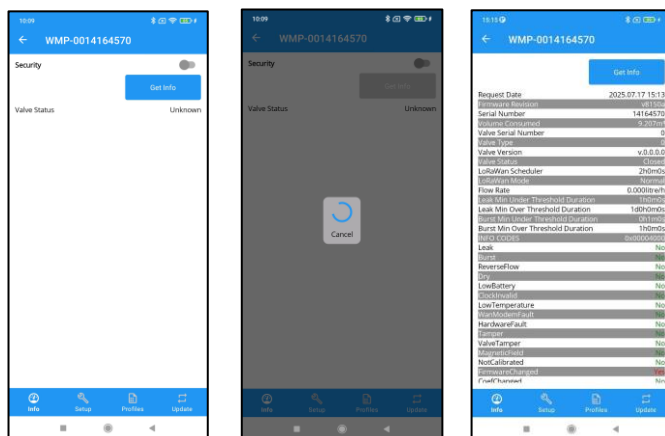
3.2 Device Information

Tap the meter.

NOTE: The connection with the meter is not an instant action. It takes a while to make the contact with the meter.

Tap the **GET INFO** button. The meter is connected or the relevant information is updated.

NOTE: The information on the LCD display can be different. It depends on the software version.



The following information is displayed for the meter:

Request Date	the date when the displayed information has been requested and received, e.g. 2025.06.12 15:05.
Firmware Revision	the meter firmware version, e.g. v8038a.
Serial Number	the meter serial number, e.g. 251855.
Volume Consumed	the consumed volume of water, in cubic meters with three decimal places, e.g. 4,555 m ³ .
Valve Serial Number*	the valve serial number, e.g. 253751.
Valve Type*	the valve type, e.g. 8500.
Valve Version*	the valve firmware version, e.g. v.2.0.0.8.
Valve Status*	the valve opening degree, Open, %/ Closed.
LORAWAN Scheduler	how often the meter communicates with the LORAWAN server, e.g. 2h0m0s (it is first recommended this parameter to be set as 1 hour, further during exploitation it is recommended to set it as 6 hours).
LORAWAN Mode	the mode of LORAWAN use.
Flow Rate	the meter flow rate, e.g. 0,000 liter/h.
Leak Min Under Threshold Duration	the value is selected from the list, see section 3.2.4 .
Leak Min Over Threshold Duration	the value is selected from the list, see section 3.2.4 .
Burst Min Under Threshold Duration	the value is selected from the list, see section 3.2.4 .

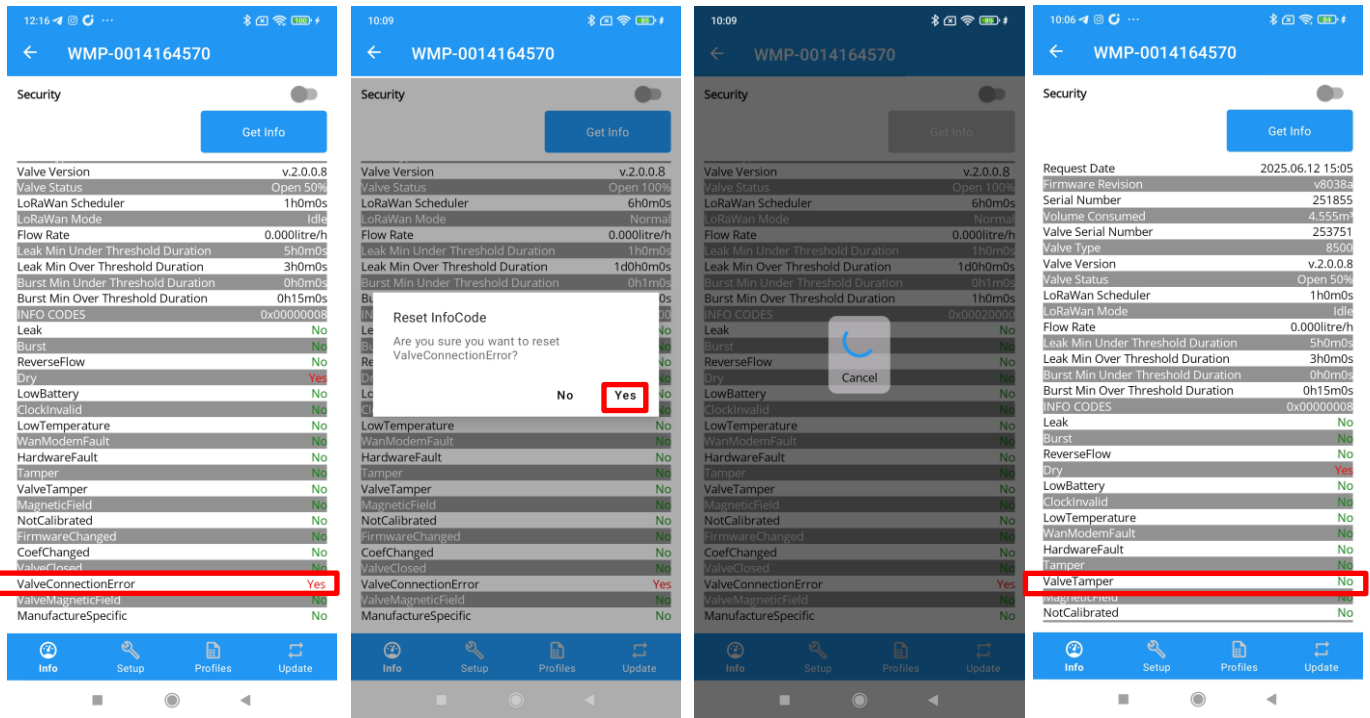
Burst Min Over Threshold Duration	the value is selected from the list, see section 3.2.4 .
--	--

INFO CODES (ALARMS)

Leak	the water flows continuously for more than 24 hours configured by COSEM CLIENT, by default isn't activated: Yes/No.
Burst	the water flow is constantly high for more than 30 minutes configured by COSEM CLIENT, by default isn't activated: Yes/No.
ReverseFlow	the water flows in wrong (reverse) direction: Yes/No. A separate register for water volume flowed in reverse direction is updated.
Dry	the meter is not filled with water: Yes/No.
LowBattery	the low battery for the meter has been detected: Yes/No.
ClockInvalid	the system time not valid: Yes/No.
LowTemperature	the low ambient temperature detected: Yes/No.
WanModemFault	the meter WAN modem fault has been detected: Yes/No.
HardwareFault	the meter hardware error has been detected: Yes/No.
Tamper	the meter case has been opened: Yes/No.
ValveTamper*	the valve case has been opened: Yes/No.
MagneticField	the magnetic field has been detected: Yes/No.
NotCalibrated	the meter has not been calibrated: Yes/No
FirmwareChanged	the firmware changed: Yes/No.
CoefChanged	the calibration coefficient has been changed by COSEM CLIENT at production or service support: Yes/No.
ValveClosed*	the valve state is connected: Yes/No.
ValveConnectionError*	the connection with valve has been failed: Yes/No.
ValveMagneticField*	the magnetic field has been detected by valve: Yes/No.
ManufactureSpecific	the parameters reserved by manufacture: Yes/No.

INFO CODES with * refer to the meters assembled with the valve.

The green INFO CODE values are the default states. They cannot be changed. The red colour of the value means that this value is critical. This state signaled the problem. The corresponding alarm icon will also appear on the LCD display. Tap the **INFO CODE** to change it.



NOTE: The INFO CODE value can be changed only if the problem that activated it was solved. All alarms are recorded in the corresponding alarm register with the time stamp and remain active until the alarm register is cleared using the software application. To avoid missing the next trouble situation, the alarm should be cleared. Preliminary, the problem should be solved.

3.2.1 SET VALVE STATE

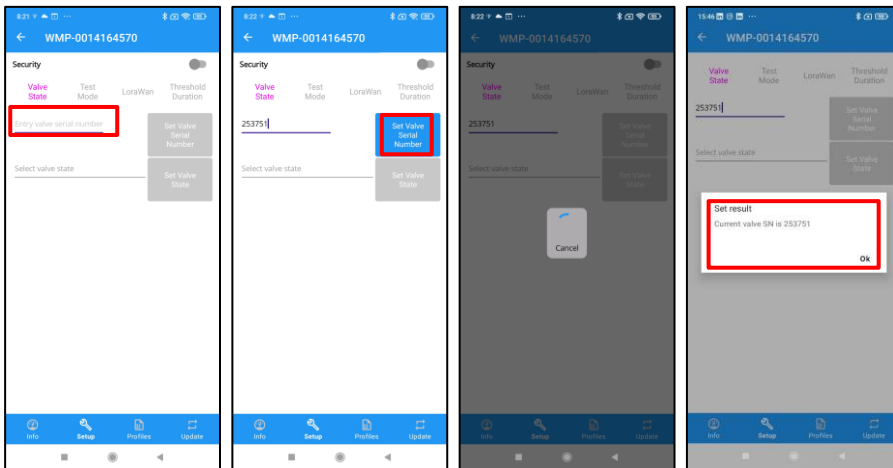
To manage the valve state, tap the **Setup** button, tap the button **Valve State**.

The valve serial number in the water meter memory and the water meter serial number in the valve memory are set in the production process as regular.

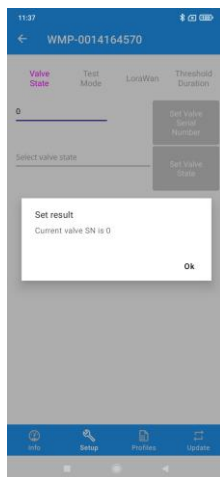
We can proceed as described below, but only if the numbers have not been set in the production process.

Otherwise, you should ask the **service center** for a more detailed consultation regarding your case.

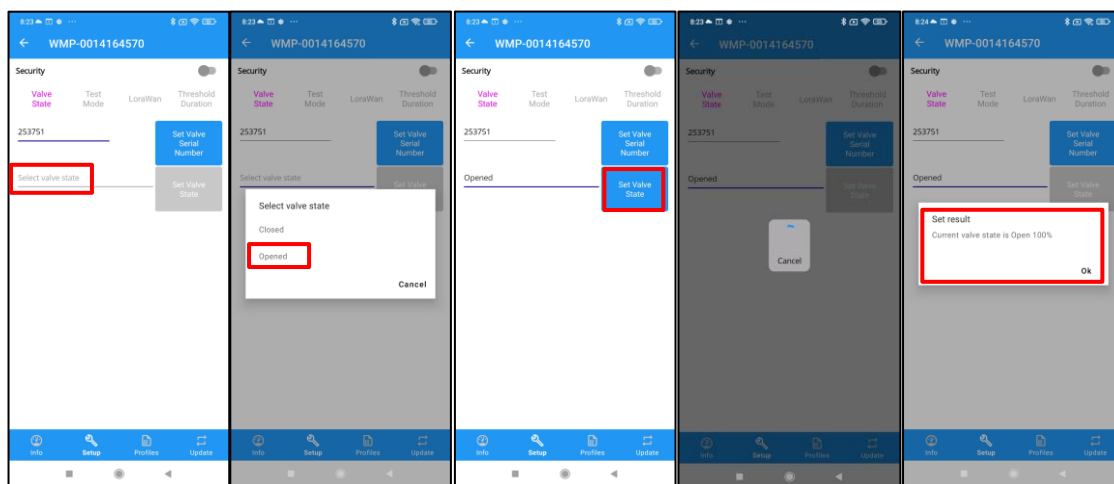
To set the valve serial number tap the window near the **SET VALVE SERIAL NUMBER** button, introduce the respective number and tap the **SET VALVE SERIAL NUMBER** button to realize it. The confirmative message will appear.



If your water meter isn't connected with a valve (contact the ADD support team to clarify this issue), you can set the value of the valve serial number equal to zero.



To select the respective valve state, tap the window near the **SET VALVE STATE** button, select the respective valve state from the list and tap the **SET VALVE STATE** button for finalizing the operation.





NOTE: The valve can only be managed via the meter by the ADDRA Control Tool application.

To connect the water meter to the valve, these two devices must be placed as close together as possible.

NOTE: It is not recommended to place the connected devices for a distance more than 1 meters.

Press the button and wait about 40 seconds. This time is required to complete the valve opening/closing process.

The indicator of the meter-valve connection is the icon  on the water meter DISPLAY. Reconnection take place automatically. As a result, the icon  appears on the meter display to indicate that it has been connected to the valve.

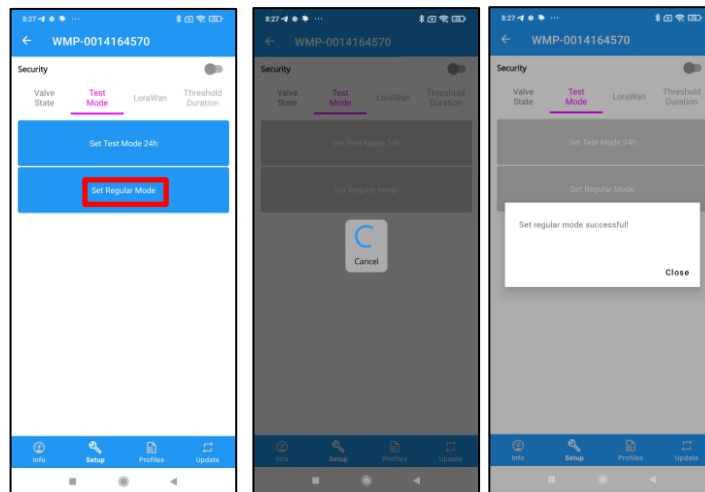
3.2.2 SET TEST MODE

There are some variations of the WATER METER FUNCTIONAL MODE.

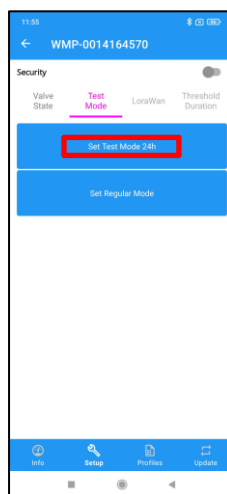
- Regular Mode – the normal operation mode for the water meter.
- Test Mode24 h – the special WATER METER FUNCTIONAL MODE for the certification tests (it is possible to change number of decimal places); it is available for the special firmware version from the v8143a and higher.

To manipulate the parameters for the WATER METER FUNCTIONAL MODE, tap the **Setup** button → the **Test Mode** button.

To set the Regular mode – tap the **Set Regular Mode** button.



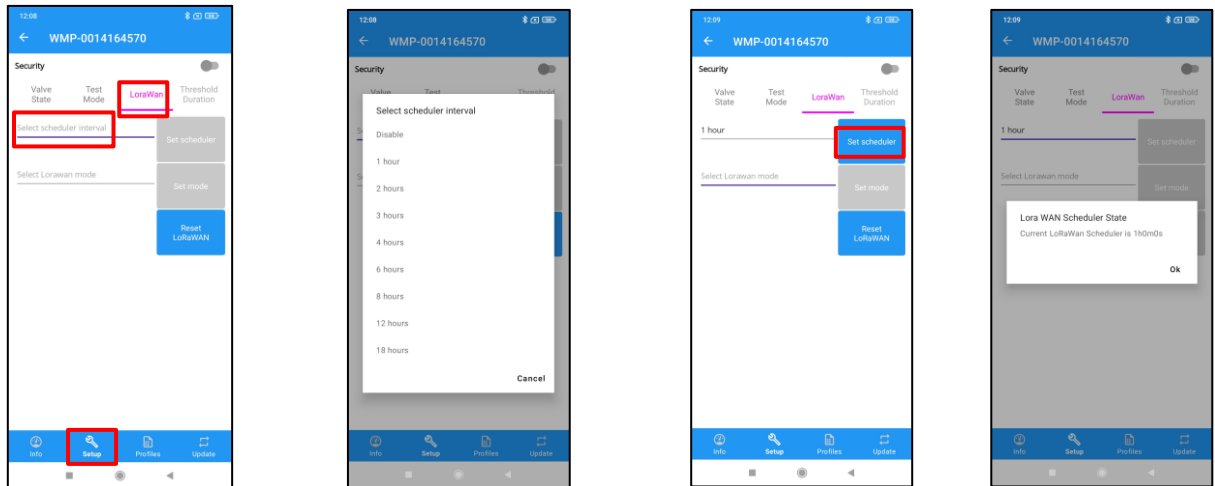
Tap the **Set Test Mode 24h** tab. Wait for the message "Success" to appear on the display. If the process fails, an error message appears.



3.2.3 SET LORAWAN PARAMETERS

3.2.3.1 RESET LORAWAN SCHEDULER

To change or to set the LORAWAN Scheduler, tap the **Setup** button, the **LoraWan** button and the **SELECT SCHEDULER INTERVAL** button. Choose the required value in the opened window.



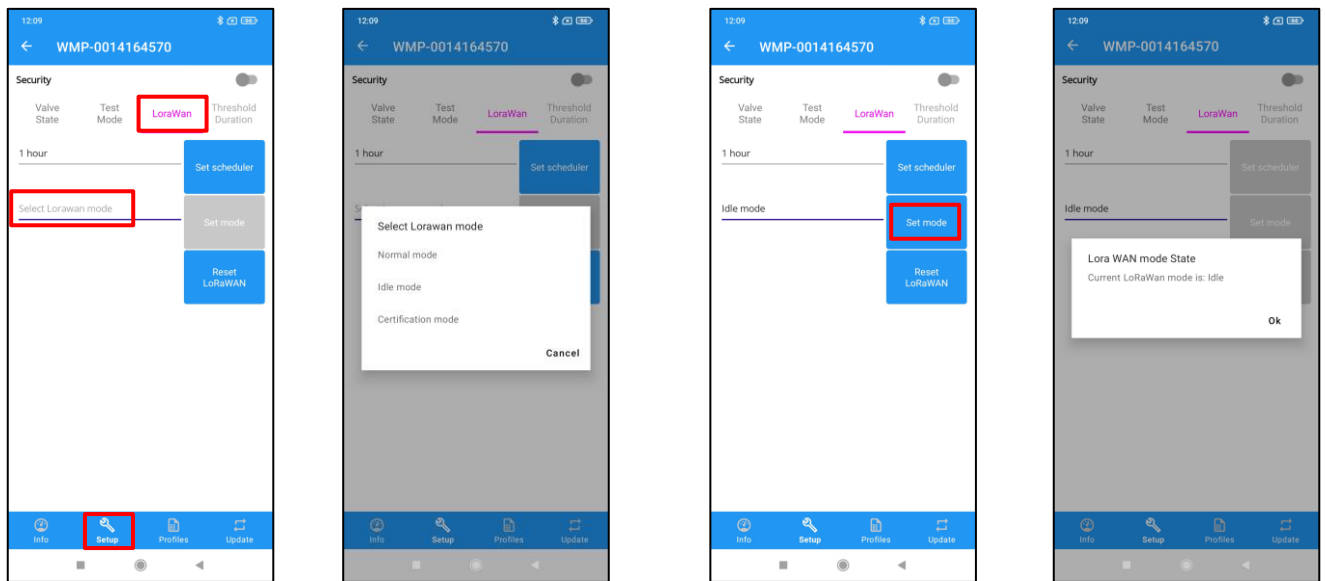
Tap the **Set scheduler** button. Tap the **GET INFO** button for actualization of the parameters for the LORAWAN Scheduler.

3.2.3.2 SET LORAWAN MODE

There are some variations of the LORAWAN MODE.

- Normal mode – the normal operation mode for the LORAWAN communication channel (defined by the software).
- Idle mode – this mode is defined as the default mode and for this case the LORAWAN operation mode is not active, (e.g., for the transportation).
- Certification mode – the special LORAWAN operation mode for the certification tests (available for the special firmware version).

For the LORAWAN MODE access - tap the **Setup** button → the **LoraWan** button → the **Select LoraWan mode** button. Select the required value in the opened window. To confirm the selection, tap the **Set mode** button.



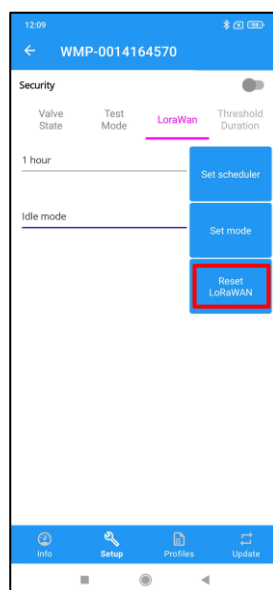
Tap **GET INFO** button for actualization of the LORAWAN Mode at the Info menu.

3.2.3.3 RESET LORAWAN OBJECTS

Tap the **Setup** button → the **LoraWan** button → the **Reset LoRaWAN** button to reset the objects responsible for the communication with the LORAWAN to their default settings.

NOTE: Don't forget to delete all the information about the meter from the LORAWAN server.

The problems with the LORAWAN server don't disappear by restarting the meter. All the parameters and the settings are stored in the meter non-volatile memory and will not disappear when the meter is restarted.



It is recommended temporary to reset the LORAWAN communication module to verify the connection with the water meter.

Use the steps described earlier to repeat for each water meter.

3.2.4 THRESHOLD

3.2.4.1 BURST and LEAK

For the Burst/Leak alarm setting there are three parameters: Threshold (Liters/hour), Duration over Threshold (seconds) (DOT), Duration under Threshold (seconds) (DUT).

Burst/Leak:

- Threshold – represents a water flowrate above which the water meter triggers an alarm.
- DOT – is the admissible time interval during which the actual flowrate can exceed the Threshold value, without generating any alarm. This is considered to be normal water consumption. The corresponding Burst/Leak alarm appears when the flowrate exceeds the Threshold value and the time exceeds the DOT.
- In this case the special symbol displays on the LCD.
- DUT – represents the minimum time interval during which the actual flowrate does not exceed the Threshold value (mentioned above), and the water consumption has already been normalized after the earlier generated Burst/Leak alarm. The software should clear these earlier generated alarms before first enabling a new alarm.

Fig.1 is the illustration of the parameters mentioned above.

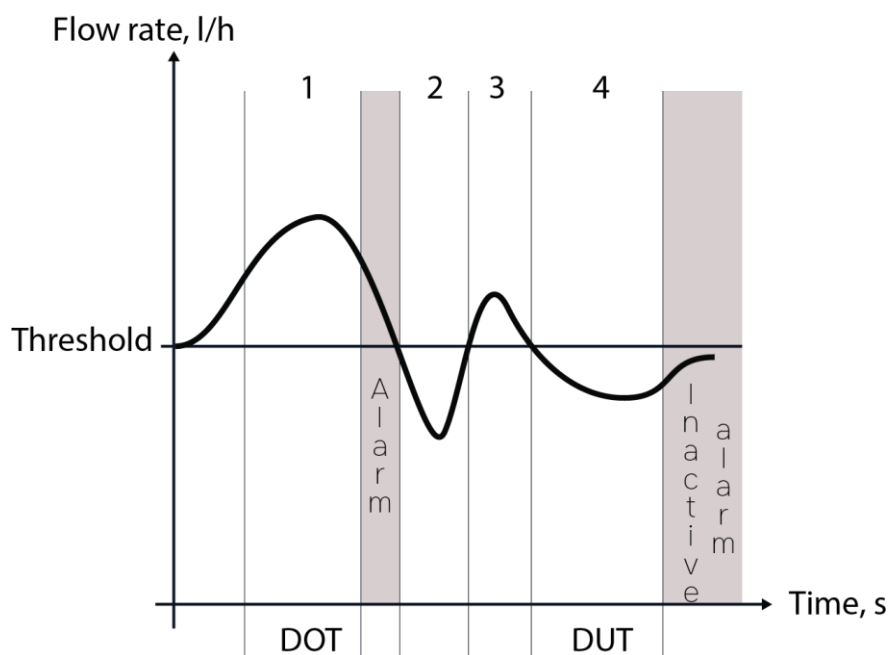


Fig.1 The illustration of the parameters Threshold, DOT, DUT.

When the flow rate moves out of the threshold value within the set time interval, the defined actions are possible depending on this interval.

Below, the possible actions are described if the flow rate is more than the Threshold for more than DOT value (duration over threshold):

1. Event 5 Leak on or Event 7 Burst on is generated along with the appearance of relevant symbol on the meter LCD.
2. Event 5 Leak on or Event 7 Burst on is generated along with and appearance of relevant symbol on the meter LCD. At the same time, the water supply is stopped.
3. No actions occur.

If the flow rate is lower than the Threshold during the time interval more than DUT (duration under threshold), the actions are as follows:

1. Event 6 Leak Off or Event 8 Burst Off is generated along with the appearance of the relevant symbol on the meter LCD.
2. Event 6 Leak Off or Event 8 Burst off is generated, at the same time the relevant symbol is automatically removed from the meter LCD and water supply is restored. This action is only possible if there has been an alarm generated before.
3. No actions occur.

PARAMETERS SETTING RECOMMENDATIONS.

Threshold values for the Burst and the Leak should be set separately. The Burst alarm needs a higher threshold value and a less DOT to avoid the alarm situations.

The threshold values are recommended to be around Q3 or higher. The time interval should be at least 5 minutes (the consumer can really consume such a volume of water, not associated with a pipe break), but no more than 40 minutes (to avoid a lot of water to waste: for the flow equal to Q3, about 1000 liters of water will flow out during this time). These parameters should be configured depending on the consumption profile of a consumer. In case of an apartment, the time can be reduced to 20 minutes; if, for example, consumption is measured for a house with an irrigation system, then the time should be increased, as well as the threshold value.

Similar principles should be applied for the Leak alarm, except that the time interval should be greater. A lower flow threshold and a longer DUT duration should be set to avoid "false" Leak alarms. The threshold value is to be more than Q1, the time interval should be at least several hours.

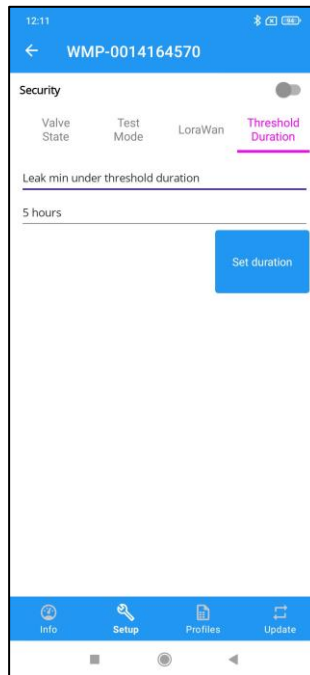
3.2.4.2 SET THRESHOLD DURATION

To track the burst and leak INFO CODES, relevant threshold values should be specified:

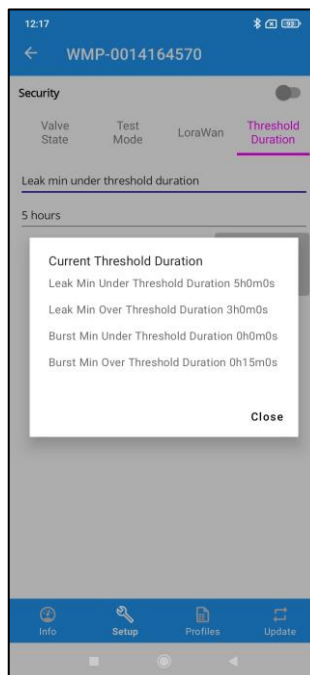
- Leak min under threshold duration;
- Leak min over threshold duration;
- Burst min under threshold duration;
- Burst min over threshold duration.

To set the *Threshold duration* select:

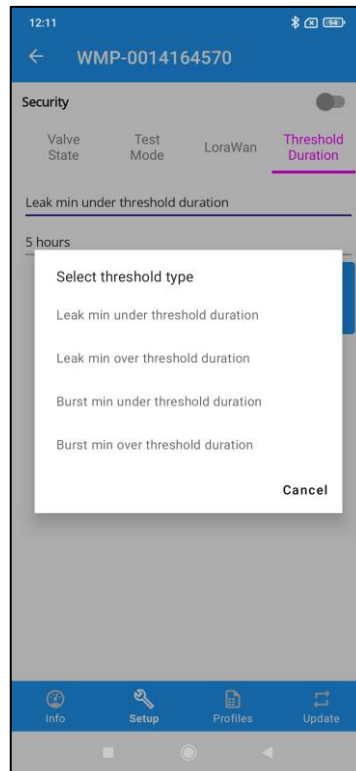
1. Tap the **Setup** button → the **Threshold Duration** button → the **Select threshold type** button. Select the respective value.
2. Tap the **Select threshold duration** button, also select the respective value for the selected threshold type.
3. Tap the **Set duration** button.



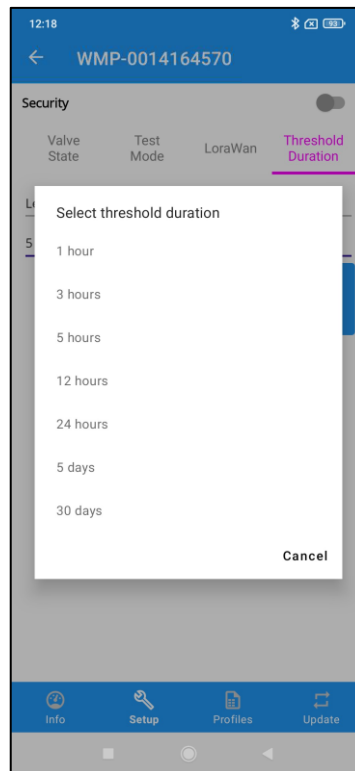
For the final of the threshold's parametrization, you will get the informative message on the application display with the saved values for every parameter.



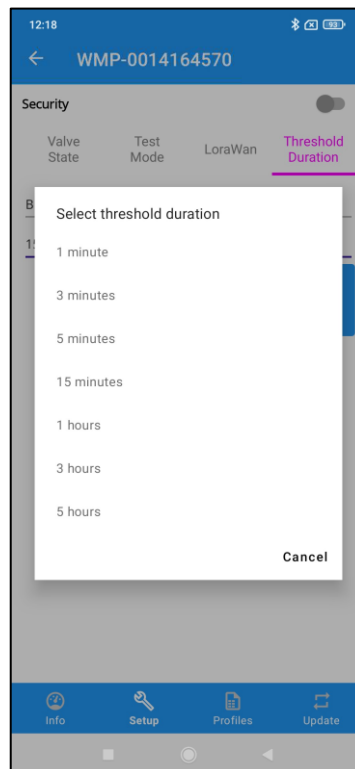
The list for the threshold types is presented below:



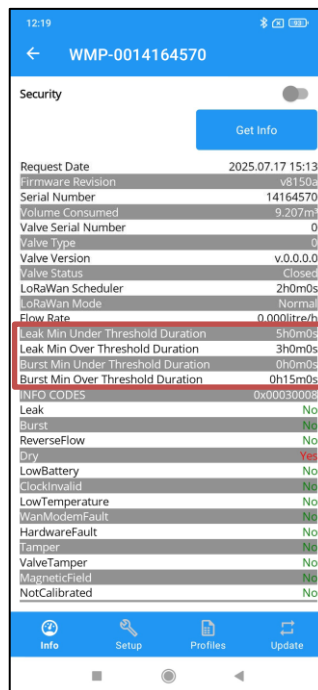
The duration for the Leak threshold type is chosen from the list:



The duration for the Burst threshold type is chosen from the list:

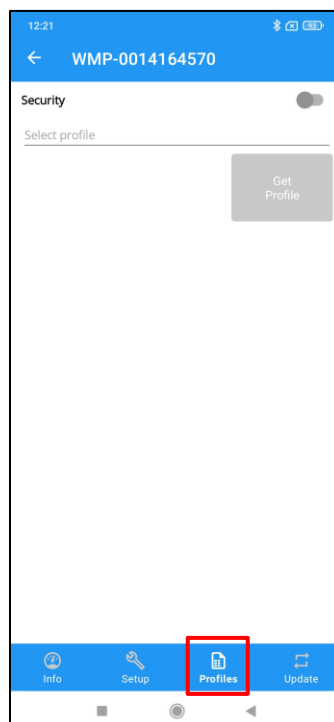


Tap the **GET INFO** button and the selected values will appear in the INFO panel. An example is shown below.

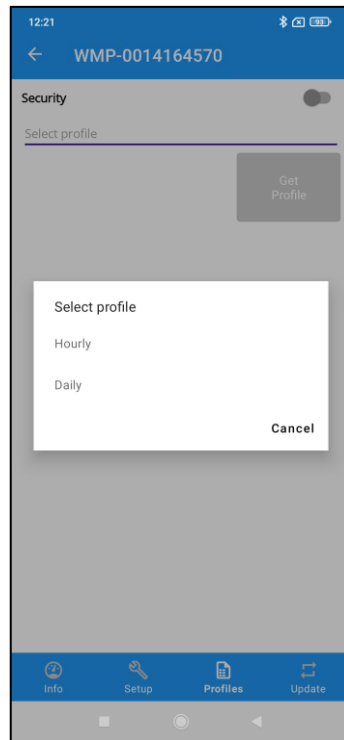


3.3 Profiles

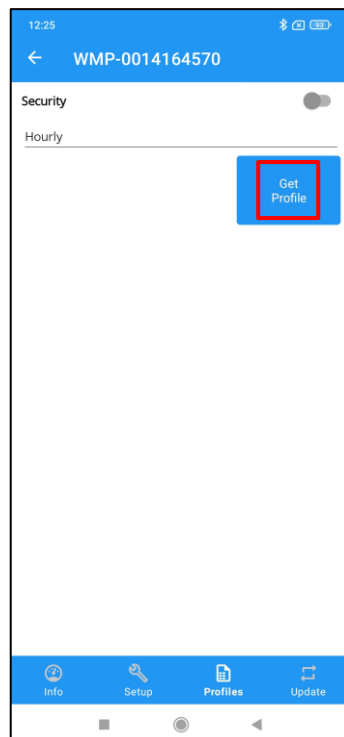
To export the profiles intervals, tap the *Profiles* button.



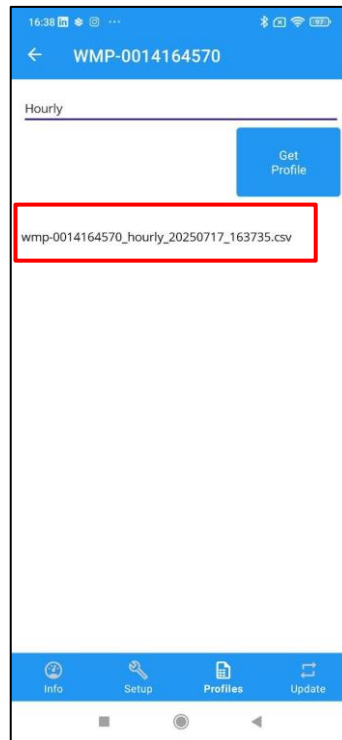
To choose the day or hourly profiles, tap the *Select profile* button, the list will appear:



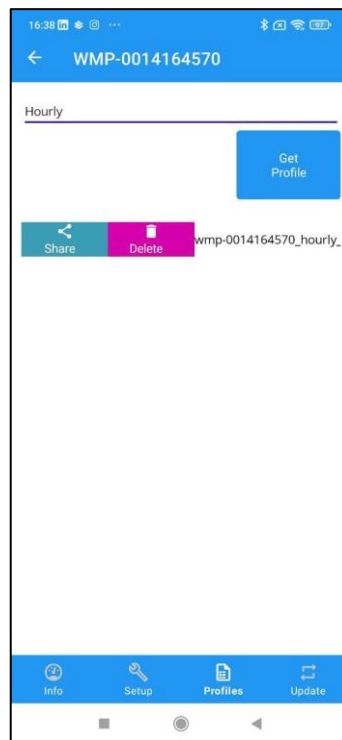
Choose the respective profile and tap the *Get Profile* button.



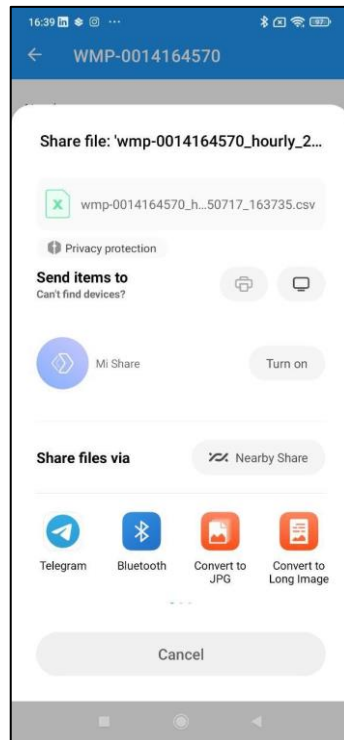
The file with the requested profile will appear on the display.



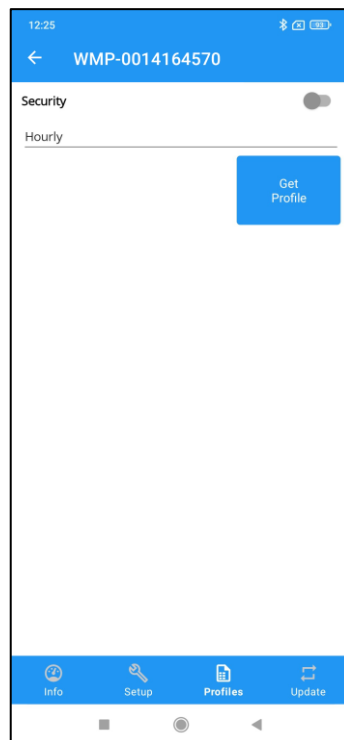
Scroll it to the right, the possibility to share and to delete will appear. Tap the **Share** button or the **Delete** button. See the image presented below.



Tap the **Share** button and the file will be shared using one of the various methods supported by your gadget.



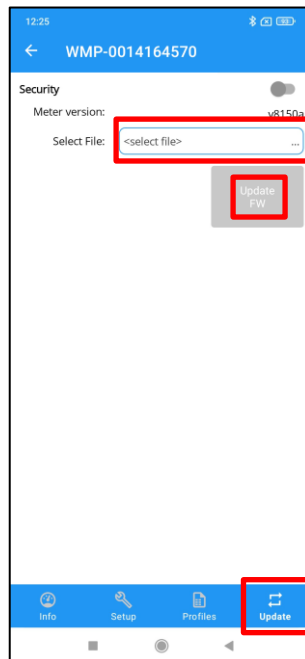
Tap the *Delete* button to delete the file. The absence of the file on the screen is a confirmation of this action.



3.4 Device Update

To update the meter, tap the **Update** button, select the update file in the <select file> window and tap the **Update FW** button.

NOTE: The application permits to select files with .imgx extension (the file must be already downloaded on your android device).



The application rejects the files with other extensions and displays the Firmware update Error window.

Tap the **UPDATE** button. Updating the meter involves the several steps:

1. The image file is transferred to the meter.
2. The image integrity is verified.
3. The image is activated and the **Firmware update Success** window is displayed.

NOTE: No action is permitted for the LORAWAN server during device update process.