Enco Terminal radio data storage

Menu Description

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Enco Terminal key components

Enco Terminal is a device designed for the remote reading of meters and their binding with the permanent data reading antenna. Fig. 1 presents the device with its key components.
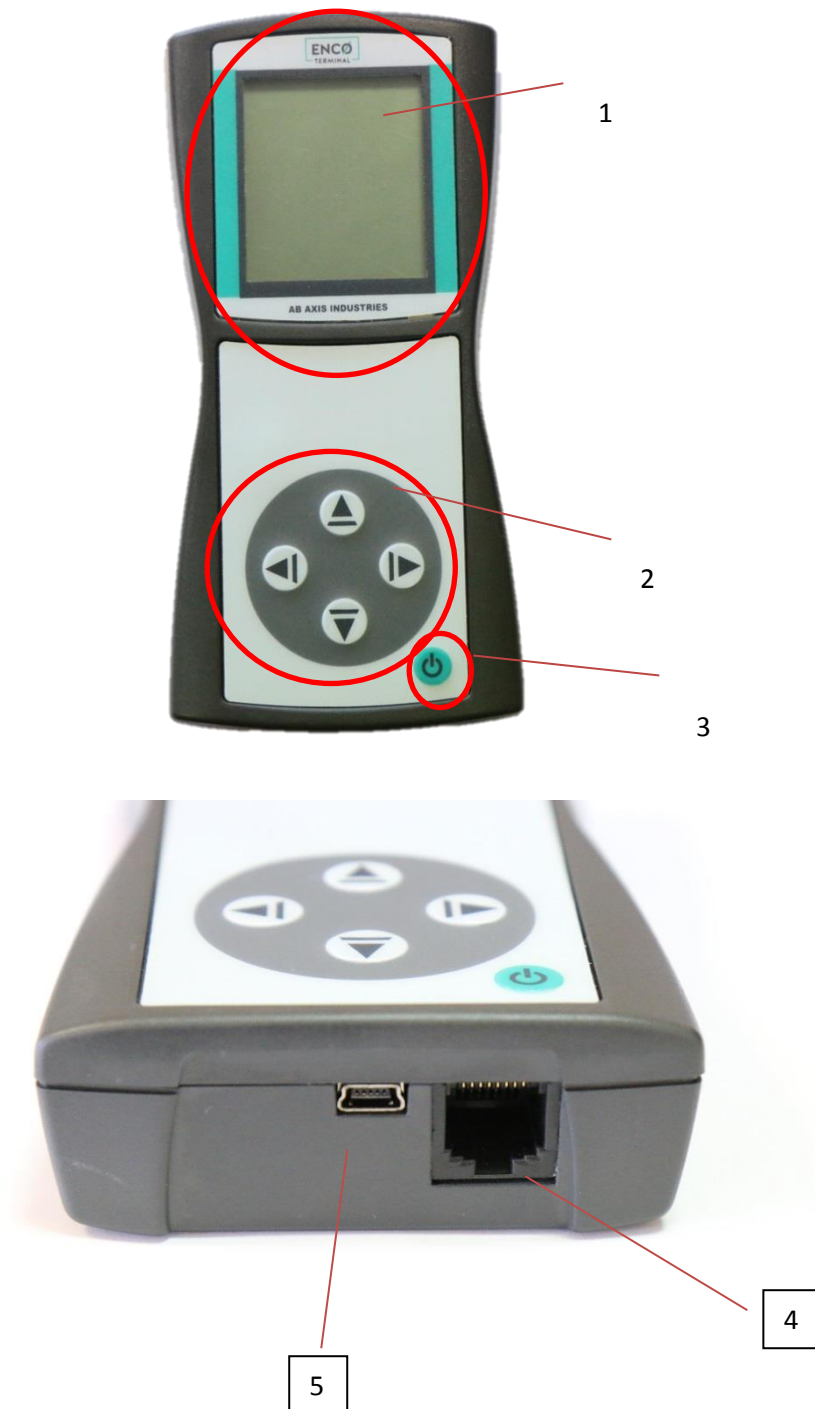

Fig. 1 – the device with its key components

The key components of Enco Terminal:

1. Screen
2. Direction and selection keys
3. On/off key
4. RS-232 interface
5. USB interface

Main Menu

- Fig. 2 – the Main Menu window

The options available in the Main Menu:

- Read Meters – read meters remotely.
- Service – option for changing the device parameters and deletion of the meter list.
- W-Mbus Service – Wireless Mbus parameter change window.
- Meter List – review of the list of read meters and review of the data of individual meters.
- Select Object – it is active only if a micro SD card is inserted in the device.

The device status line is seen at the bottom. This device shows that it has no read meters in its memory and is in the idle mode. The following other status values are possible:

- SENDING – a data request is being sent to the meters. It will be displayed for around 30 s after beginning of the meter reading activation.
- AXI LISTEN – waiting for data from the meters. The countdown displayed next to it will symbolise time remaining to reading completion.

Read Meters menu window

By selecting the Read Meters menu item (with the up – down keys, we put the marker at the Read Meters position and push the right direction key). The new menu window opens – see Fig. 3.
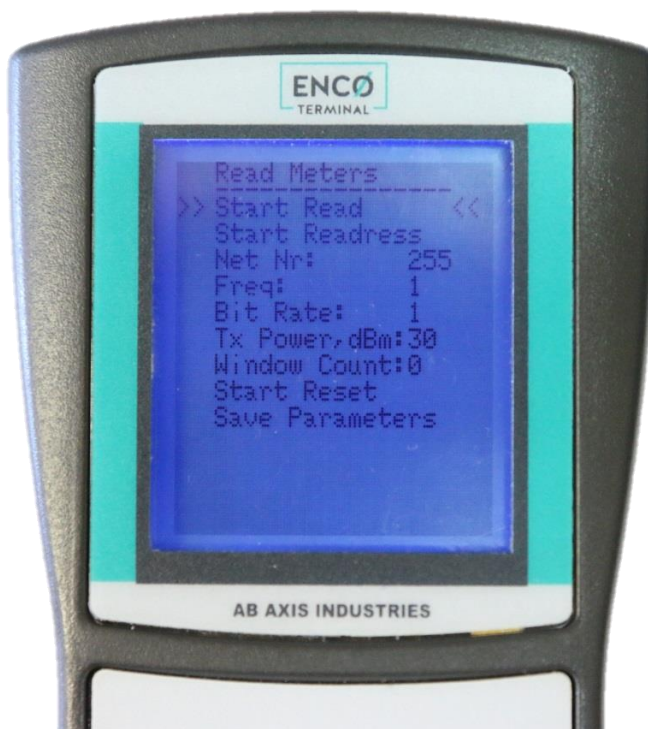

Fig. 3 – the Read Meters menu window

The following options available in the opened menu window:

- Start Read – start reading the meters.

- Start Readress – start the procedure for binding the meters with the network.

- Net Nr – it allows selecting the network where meters for reading will be searched. The selection range is 0 to 255.
- Freq – it allows selecting the frequency at which the reader will respond to the data request. The possible frequency options are displayed on the selection window. This window presents the frequency equivalent according to the sequence.
- BitRate – it allows selecting the bitrate at which the reader will respond to the data request. The possible bitrate options are displayed on the selection window. This window presents the bitrate equivalent according to the sequence.
- Tx Power – it allows adjusting the transmitter power. The selection range is 15 to 30 dB.
- Window Count – it allows selecting the window size, on which the meter response time will depend. The maximum readable number of meters is displayed on the selection window. This window presents the equivalent of the number of meters according to the sequence.
- Start Reset –
- Save Parameters – save the data of the previously changed parameters.

By means of the up and down keys, we select the item to be changed and then push the right direction key. We can change the parameter in the opened new menu window. The parameter is changed by means of the up and down keys. Having set the parameter, we push the left direction key in order to return to the previous menu window. Having made all necessary parameter changes, we select the *Save Parameters* menu item to prevent the loss of the parameters when the device is switched off. In order to return to the main menu, we push the left direction key; in order to start the reading of the meters, we select *Start Read*. After this item is selected, the programme will automatically return to the main menu window.

When any of the modes related to the binding of the meters with the antennas or others is selected, the programme automatically returns to the Main Menu window.

Service Menu window
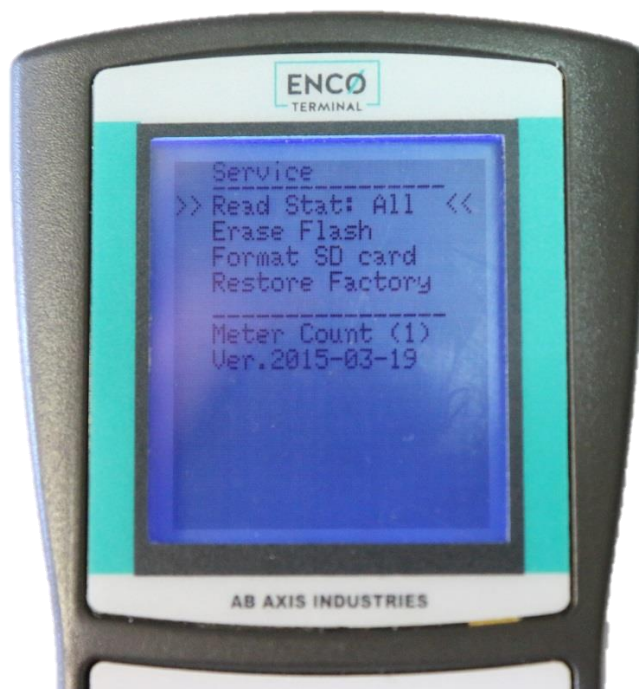
The Service Menu window is presented in Fig. 4.

Fig. 4 – the Service Menu window

The possible options of the Service Menu window:

- Read Stat – it allows selecting the option for saving the data of the meters: if *All* is selected, the data of all read meters will be saved; if *From List* is selected, only the data of those meters which are presented in the pre-saved list will be saved.

- Erase Flash – delete the meter list from the flash memory.

- Format SD card – if a micro SD card is inserted, it will be formatted and all data saved on it will be deleted.

- Check SD card – the SD card functioning test is performed. In this case, all the data available on the card will be lost.

- Restore Factory – when this item is selected, the factory parameters will be restored.

In order to select the required menu option, change the marker position with the up and down keys to set it against the required menu item. Then, by pushing the right

direction key, depending on the option, either the parameter change window will be entered, where, having changed the parameter by pushing the up and down keys, we push the left direction key, or the operation depending on the selection will be performed. In order to return to the Main Menu, push the left direction key.

W-Mbus Service menu window

The W-Mbus Service menu window is presented in Fig. 5.

Fig. 5 – the WMBUS Service window

The possible options of the WMBUS Service menu window:

- Start Installing – switch the meters into the installation mode. In this mode, the meters will be bound with the permanent data reading antenna.
- W-Mbus: (PASSIVE or ACTIVE) – in this menu item, it is possible to select whether M-Bus mode will be active or passive. When active, it is possible to receive meter telegrams sent in the W-Mbus protocol.

In order to select the appropriate menu option, change the marker position using the up and down keys to set it against the menu item to be selected and push the right direction key. Depending on the option, either the parameter change window will be

entered, where, having changed the parameter by pushing the up and down keys, we push the left direction key, or the operation depending on the selection will be performed. In order to return to the Main Menu, push the left direction key.

Meter List menu window

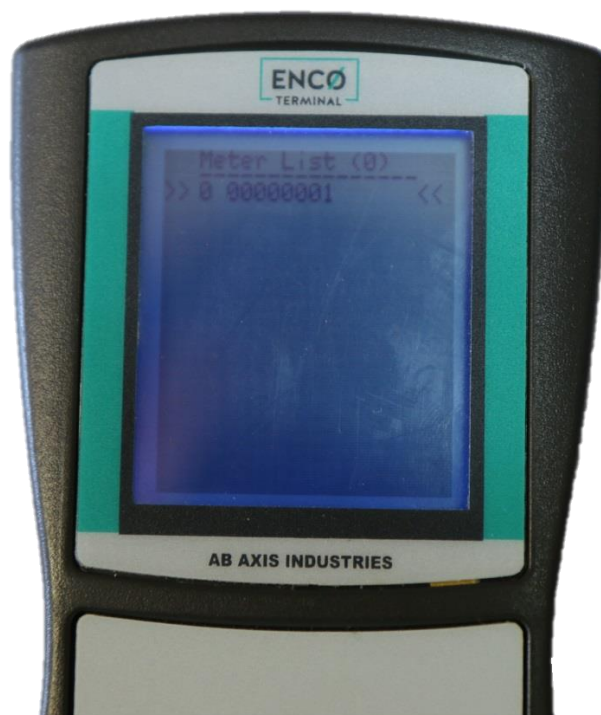The Meter List menu window is presented in Fig. 6.

Fig. 6 – the Meter List menu window

Meter List can display the list of the read meters. If the meter list is empty, then only the number of the device we are using will be displayed. When the meter list is not empty, the desired meter can be selected for review. The data transmitted by the meter will be displayed in the opened new window.

Select Object menu window

       If a micro SD card is inserted, the Select Object option will appear in the Main Menu window. If this menu item is selected, no lists will be available on a new device and it will be possible only to add a new list by pushing the *Add New List* key. If several lists were entered using the Axis RadioBox Configurator application, the menu can appear similarly to that presented in Fig. 7.

Fig. 7 – the Select Object menu window

       By changing the marker position, we select the desired meter list and push the right direction key. On the new menu window that appears, two options are possible:
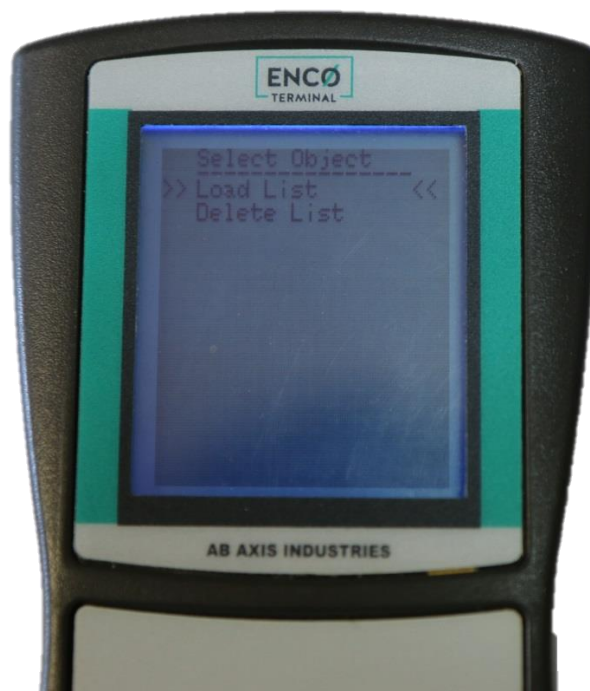
Fig. 8 – the menu window when the meter list is selected

Possible menu options:

- Load List – load the selected meter list.
- Delete List – delete the selected meter list.

There are 2 options to add a list:

1. Having the Select Object of the Main Menu window, go to the Object Management Menu window. In order to add a new object, select Add New List and push the right direction key. The object titled *New Object1* will appear in the object list if it is the first object in the list. Place the marker on that object, push the right direction key, select the *Load List* menu option in the new menu window, and wait until the object meter list is uploaded. Since the loaded object will be empty and contain no meters, when reading meter data, the data from all meters located within the communication zone will be stored. In this way, it is possible to read meters of several buildings and to arrange meter lists after transferring the data to a computer. Thus the number of readable meters will have only the following limitations: 1. The maximum number of the meters of a single reading operation is not greater than 950. 2. The total number of meters is limited by the capacity of the SD card.

2. A meter list can be created with the use of a configurator. The procedure for uploading a meter list is described in the document "Axis RadioBox Help

EN". It should be noted that the name of the meter list will be displayed in the *Select Object* menu window as the name of the meter list but it cannot be longer than 16 characters.. Otherwise, the incomplete name will be displayed. When sending a meter list from the configurator application, the meter list is automatically created, recorded, and uploaded.

In order to read data from the desired object list, first this list should be uploaded (Load List) and only then, using the configurator or other means (e.g. Axis Reader), the meter data should be read.

Data values of read meters

When meters are read, whether reading was performed by the list or for all meters, the meter list will be presented in the Meter List menu item. By changing the marker position, select the meter to be analysed and push the right direction key. The data displayed in the opened new window can appear similarly to those presented in Fig. 9. The exact view will depend on the specific meters and data transmitted by them.
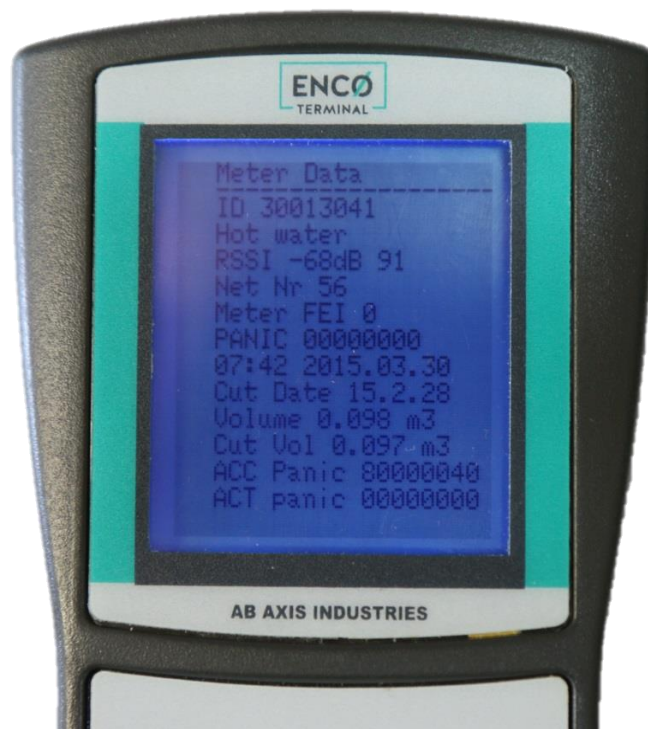

Fig. 9 – the meter data analysis window

Existing and possible transmittable data:

- ID – the identification number of the device being read.

- Hot water – the device type is indicated. In this case, it is a hot water meter. Other types of readable devices are also possible: Cold water – cold water meter; HCA – heat cost allocator; Heat – heat meter; Electricity" – electricity meter.
- RSSI – the received signal strength of the read meter is indicated. The smaller the number, the stronger received signal is. The weakest signal level when a meter still can be read is 100 dB. The meter reading number is displayed next to the signal strength value. The meter reading number can range from 0 to 255.
- Net Nr – the number of the network to which the meter is assigned.
- Meter FEI – the parameter showing the mismatch of the antenna and meter central frequency. 1 unit equals to 61 Hz.
- PANIC – error code.
- The date of the meter when data reading was performed.
- Cut Date – the date of the reporting period.
- Volume – the current meter readings (volume).
- Cut Vol – the meter readings of the reporting period (volume).
- ACC Panic – error code.
- ACT panic – error code.
- Leakage – water leakage indication. If the water flow runs through the meter for an excessively long time, this parameter indicates the abnormal operation of the meter.
- Work T – the error-free working time of the heat meter.
- Energy – the current reading of heat energy.
- Cut Ener – the reading of heat energy for the reporting period.
- Cool – the current value of cooling energy.
- Cut Cool – the reading of cooling energy for the reporting period.