

## Bussines proposal form

Single-phase electricity meter PHOBOS 1

Bidder name:	Energy Trading and Investment
Headquarters, street and number:	Dobropoljska 26-28, Beograd Tel. +381 62 815 19 45
Registration number:	21293628
Tax ID:	110080345
Activity Code:	3514
Person for contact:	Goran Đorđević, +381 62 8151945, goranenergy47@gmail.com
USD Bank Account:	285-2291209900592-79
EUR Bank Account:	285-2291209900591-82

Ordinal number	Name of the service	Unit of measure	Price without VAT per month in USD	Price without VAT per year in USD	VAT Price	Total price in USD with VAT per year
1.						

**\*\*Offer validity period - 30 (thirty) days from the date of opening the offer.**

Bidder

\_\_\_\_\_  
(signature of the authorized person)

## System payment options

Option 1	Option 2	Option 3	Option 4
Use Mobile_Application on android or iPhone or windows mobile. Scan the hidden QR code from the mobile and recharge his meter	Dial a phone number from his mobile or landline phone and enter his meter ID and pin Number then enter the hidden Scratch card digits to recharge his meter	Go to a website access his account and get list of his meters. Choose a meter and recharge it by entering the hidden scratch card digits	Go to a point of sale where the remote control Keypad is fixed enter his meter ID and PIN code and enter the hidden scratch card digits to recharge his meter. Note that the remote control unit does not require any internet connectivity as it is communicating with the system via the IoT network over the air.

\* All 4 options are included in our system. The end user is free to use any one of them any time anywhere. No need to access the basements or understair cases or the dangerous electricity rooms in the buildings to reach to his keypad in his meter to be able to load it.

You can do it even if he is far or outside or traveling... why to loose electricity and disconnect the fridge or other appliances or CCTV system or security systems if you forget to load his meter.

\*\* Meters are Smart to be simple, to really talk to you, to make your life easy

\*\*\* Option 2 including recharge by sending the hidden scratch card digits via SMS messages

## TECHNICAL SPECIFICATIONS

### Single-phase electricity meter PHOBOS 1

This single phase PHOBOS 1 NB-Fi Connected Smart Meter offers multi-tariff metering, load limiting and remote control features via NB-Fi by WAVIoT Wireless Protocol.



NB-Fi Protocol enables very-long-range wireless communications (up to 10 km in urban areas; up to 30 km in rural).

PHOBOS 1 NB-Fi Connected Smart Meter by WAVIoT and NB-Fi Wireless Network allowing you to deploy true low-cost Automatic Metering smart grid solution in any point of the world within days and even hours.

*ENERGY TRADING AND INVESTMENT doo, Beograd 11080, Dobropoljska 26-28*

Tel. +381 62 815 19 45, e-mail: [info@etidoo.com](mailto:info@etidoo.com)

Šifra delatnosti: 3514 | PIB: 110080345 | Matični broj: 21293628

Tekući račun: RSD 285-2291000001126-85 | EUR 285-2291209900591-82 | USD 285-2291209900592-79

## Key features

- 10+ km range in the urban environment
- Remote power off & power on feature
- Backup power to keep network connectivity during power outages
- No Mobile Network or Internet connection are require
- No additional wires required
- 30+ km range in rural area
- Load limiting feature
- All readings is automatically uploaded into WAVIoT Cloud
- NB-Fi Ultra Narrow Band technology provides very good signal penetration through walls and hard-to-reach areas

## Specifications

<b>Weight</b>	<b>900g</b>
<b>Dimensions</b>	<b>190 x 140 x 90 mm</b>
<b>Frequency band</b>	<b>Any part of ISM band</b>
<b>Multi-tariff feature</b>	<b>Yes (up to 4 rates)</b>
<b>Operating Temperature</b>	<b>-40 ... +85 °C</b>
<b>Operating Voltage</b>	<b>110 VAC; 220 VAC</b>
<b>Interfaces</b>	<b>RS-485 9600 8N1</b>
<b>Backup Battery</b>	<b>3.6 V Lithium AA-type Battery (up to 10 years battery life)</b>

## Detailed Technical Specifications

### Scope

Static single-phase electricity meter WAVIoT EM 1 (further referred as – meter) is intended for active and reactive electric energy measurements according to the requirements of IEC 62052-11:2016 (2003), IEC 62053-21:2016 (2003), IEC 62053-23:2016 (2003), power quality measurements according to the requirements of IEC 61000-4-30:2015 in AC single-phase two-wire electric networks of power frequency (50 Hz).

### Description and principle of operation

The principle of operation of the meters is based on the preliminary scaling of the input voltage and current with their further conversion into a digital code and processing, as well as subsequent display of measurement results and data on the monitor (display) of the reading device or remote display:

- the amount of electric active energy, not less than 4 tariffs, and the amount (consumption, generation), kWh;
- the amount of electric reactive energy, not less than 4 tariffs, and the amount (consumption, generation), kvar · h;
- network parameters (current, voltage, network frequency, power factor, current in neutral conductor, active, reactive and total output (electric power)
- power quality parameters of electric energy (optional, positive and negative voltage deviation, frequency deviation);
- current time and date.

The meters are available in two designs – for indoor (further referred as – indoor meters) and for outdoor installation (further referred as – outdoor meters). Outdoor meter consists of two separated parts – a measuring unit and a remote display, as well as two transparent clamp covers, which are used to cover the measuring unit.

The construction of the meters (measuring unit for outdoor installation) consists of an enclosure and a transparent terminal block cover.

Inside the enclosure there are a printed circuit board, terminal block (for indoor meters), the measuring elements with the current measurement circuit and voltage measurement circuit in AC single-phase network, and also a circuit for current strength control in neutral conductor (optional), auxiliary circuits, real-time clock (further referred to as – RTC), independent power supply (lithium battery), the relay for the load breakaway (optional), LCD display (for indoor meters).

The access seal of the terminal block cover (clamp covers for outdoor meters) prevents access to the terminal block. The housing cover with the access seal prevents from access to the interior arrangement of the meter. On the cover of the indoor meter and on the enclosure of outdoor meter the connection scheme of the meters is placed.

Under the cover of the indoor meter's terminal block there are contacts of impulse electric outputs and contacts of RS 485 interface of the meter (optional).

On the front panel of the indoor meter there are two buttons for the data display control.

Communication between the remote display for outdoor meter and the meter measuring block is carried out via the radio interface. On the front panel of the remote display there are also two buttons for the data display control and an additional keyboard for the input of digital information.

For the transmission of measurement results and information in measuring systems, communication with meters with the aim of their maintenance and settings in the operating process, the auxiliary circuits of the meter are used on the basis of which they may be implemented separately or together:

- radio module (optional);
- optical type interface (optical port, optional);
- RS-485 data interface (optional);
- impulse output optical device;
- impulse output electric device (only for indoor meters).

In the meter with the radio interface a function of initiative communication with the measuring systems is realized, including:

- at opening of the terminal cover;
- when exposed to an excessive magnetic field;
- when reprogramming;
- when other programmable events occur.

The meters have built-in non-volatile real-time clock with the current time (seconds, minutes, hours) and calendar (date, month, year) support. The meters support up to 4 tariffs in accordance to DLMS. The meters have non-volatile memory that stores data when power is turned off for more than 30 years.

The possible modifications for WAVIoT EM 1 meter is represented on Picture 1.

EM 1	x	x(x)	A	I	Q	O	R	L	S	N	W	-x
												Accuracy class C (according to Table 2)
												W: Modification without radio module no symbol: meter with radio module
												N: outdoor meter without remote display; no symbol: meter with display
												S: outdoor meter; no symbol: indoor meter
												Relay for the load breakaway is available
												Interface RS-485 is available
												Optical port is available
												Specified power quality parameters of electric energy measurements is available; no symbol: no power quality parameters of electric energy measurements
												Current control in neutral conductor is available
												Base (maximum current), A Variants: according to Table 2
												Rated phase voltage, V
												Type of the meter

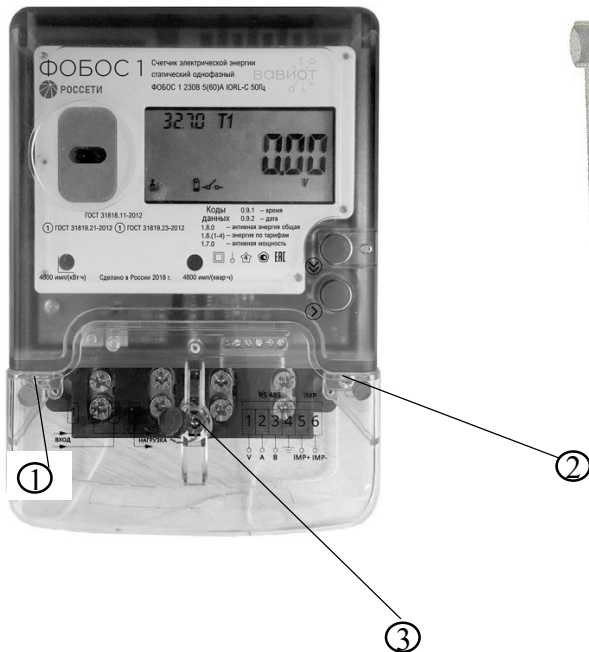
Picture 1. Modifications of WAVIoT EM 1 meter.

Note: if there is no option, there is no corresponding symbol in the modification.

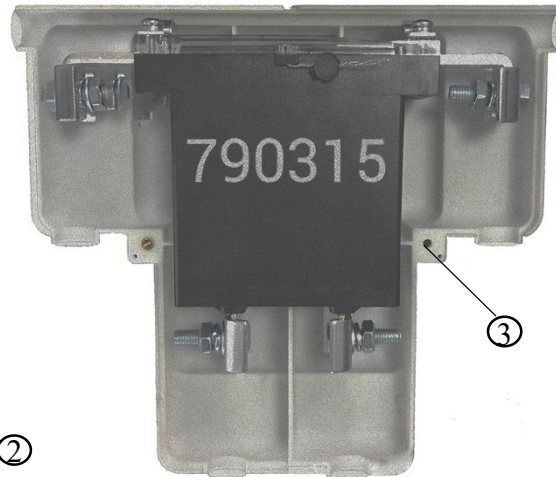


General view and the scheme of access seals of the meters are represented on Picture 2.

Indoor meter WAVIoT EM 1



Outdoor meter WAVIoT EM 1, with clamp covers



Remote display



Outdoor meter WAVIoT EM 1, without clamp covers



1. Place of the manufacturer's sealing
2. Place of the metrological service's sealing
3. Place of the maintaining company's sealing on the terminal block cover

Picture 2. General view and the scheme of sealing the meters.



The meters provide the following functions:

- control of opening the housing (enclosure) cover;
- control of opening the cover of the meter terminal block
- temperature control inside the meter;
- control of the impact of excessive magnetic field;
- control of AC voltage network and voltage dropout (failure);
- power control of the connected load;
- control of reverse power flow;

monitoring (control) of unbalance current in the phase and neutral conductors;

- remote switching control (disable/enable) of the connected load via the command from the measuring system (optional);
- automatic switching control (disable/enable) of the connected load according to the established criterion of the parameters controlled by the meter (optional);
- self-diagnosis of the meter.

The meters contain the event registration journal, which records events, time and date of their start/termination:

- terminal cover opening;
- opening of the case (enclosure) of the meter;
- reprogramming;
- impact of excessive magnetic field;
- the fact of communication with the meter by means of the interface, which led to the data change:
- voltage deviations from the specified limits in the measuring circuits;
- changes of the current time and date values during the time synchronization, as well as the results of self-diagnosis:
- measuring unit (block);
- computing unit (block);
- timer;
- power supply;
- display;
- memory block (calculation of check sum).

## Metrological and technical characteristics

The ranges of measured values and the limits of permissible measurement errors are represented in Table 2.

Table 2.

Parameters	Value
Accuracy class for active electric energy measurements according to IEC 62053-21 (modification C according to Picture 1):	1
Accuracy class for reactive electric energy measurements according to IEC 62053-23 (modification C according to Picture 1):	1
Meter constant, imp./ kWh(imp./kvar · h)	from 800 to 10000
Rated voltage $U_{nom}$ , V	230
Maximum operating voltage range, V	from $0,8 \cdot U_{nom}$ to $1,2 \cdot U_{nom}$
Base current $I_b$ , A	5, 10
Maximum current $I_{max}$ , A	60, 80, 100
Nominal value of network frequency, Hz	$50 \pm 0,5$
Voltage measurement range, V	from $0,8 \cdot U_{nom}$ to $1,2 \cdot U_{nom}$
Measuring range of active power P, W	from $0,8 \cdot U_{nom}$ to $1,2 \cdot U_{nom}$ , from $0,2 \cdot I_b \leq I \leq I_{max}$ , $0,5 \leq  K_P  \leq 1$
Limits of permissible relative error of active power measurement, % *	$\pm 1,0$
Measuring range of reactive power Q, var	from $0,8 \cdot U_{nom}$ to $1,2 \cdot U_{nom}$ , from $0,2 \cdot I_b \leq I \leq I_{max}$ , $0,5 \leq  K_P  \leq 1$
Limits of permissible relative error of reactive power measurement, % *	$\pm 1,0$
Measuring range of total output (electric power) S, V · A	from $0,8 \cdot U_{nom}$ to $1,2 \cdot U_{nom}$ , from $0,2 \cdot I_b \leq I \leq I_{max}$
Limits of permissible relative error of measurement of total output (electric power), % *	$\pm 1,0$
Limits of permissible relative error of voltage measurement, % *	$\pm 0,5$
Measuring range of positive and negative voltage deviation	from $0,8 \cdot U_{nom}$ to $1,2 \cdot U_{nom}$
Limits of permissible relative error of measurement of positive and negative voltage deviation, % *	$\pm 0,5$

Parameters	Value
Current measurement range, A	from $0,02 \cdot I_b$ to $I_{max}$
Limits of permissible relative error of current measurement, % *	$\pm 0,5$
Frequency measurement range, Hz	from 42,5 to 57,5
Limits of permissible absolute error of frequency measurement, Hz *	$\pm 0,03$
Measuring range of frequency deviation $\Delta f$ , Hz	from -7,5 to +7,5
Limits of permissible absolute error of measurement of frequency deviation, Hz *	$\pm 0,03$
Measurement range of the power factor $K_P$	from -1 to +1
Limits of permissible absolute error of power factor measurements *	$\pm 0,02$
Limits of permissible absolute error of measurement of the current time, s / day	$\pm 0,5$
Limits of permissible additional absolute temperature error of measurement of the current time, $^{\circ}\text{C}$ per day	$\pm 0,2$
Starting current for meters of accuracy class 1 according to IEC 62053-21 and IEC 62053-23, not less	$0,004 \cdot I_b$
Total output (electric power) consumed by the current circuit, at rated current, rated frequency and normal temperature, V·A, not more	0,1
Total (active) electric power (output) consumed by the voltage circuit at rated voltage, normal temperature and rated frequency not taking into account the consumption of the radio module, V A (W), not more	10,0 (2,0)
Number of tariffs, not less	4
Number of entries in the "Event Log" (registration journal), not less	100
Storage depth of increments (reception, recoil) of active and reactive electric energy for 60-minute time intervals, days, not less	123
Storage depth of increments (reception, recoil) of active and reactive electric energy per day, number of days not less	120
Storage depth of increments (reception, recoil) of active and reactive electric energy over the past month, years, not less	3
Protection degree according to IEC 60529:2013, for meters of models (modifications): - WAVIoT EM 1 for indoor installation, not less - WAVIoT EM 1 for outdoor installation, not less	IP51 IP54
Overall dimensions (height; length; width), mm, not more, for meters of models (modifications): - WAVIoT EM 1 for indoor installation, not less - WAVIoT EM 1 for outdoor installation, not less	172; 119; 59 210; 150; 65
Weight of meters, kg, not more - WAVIoT EM 1 for indoor installation - WAVIoT EM 1 for outdoor installation	0,7 1,3

Parameters	Value
Lifetime of the built-in DC power supply, years, not less	16
Period of data storage during power failure (blackout), years, not less	30
Mean time between failures, h, not less	280000
Average lifetime, years, not less	30
Normal conditions: ambient temperature, °C relative humidity, %	from +15 to +25 from 30 to 80
Operating conditions: ambient temperature, °C relative humidity at ambient temperature +25 °C, %, not more	from -40 to +70 95
Note: * - limits of permissible additional error due to the change of ambient temperature $\pm 10$ °C make up $\frac{1}{2}$ of the maximum permissible basic error.	

## Packing List

Packing list for WAVIoT EM 1 is represented in Table 3.

Table 3

Item	QTY
Single-phase electricity meter WAVIoT EM 1 in package*	1
Terminal cover****	2
Passport for the meter	1
User guide for the meter**	1
Remote display in package***	1
Remote display secondary power adapter with mini USB cable***	1
Battery AAA type***	4
User guide for the remote display***	1
Software «DLMS_client_waviot»**	-
Notes: *Modification of the meter, availability of a set of mounting parts and accessories is determined by the supply contract. **In case of agreement with the customer it may be placed on the website of the manufacturer or supplier. ***Only for outdoor meters ****On customer request	

## Characteristics of NB-Fi communication module

WAVIoT is an innovator in a Low Power Wide Area Network (LPWAN) technologies that power the M2M telemetry and Internet of Things. WAVIoT uses the NB-Fi standard that is based on Ultra Narrow Band (UNB) radio technology and operates in the license-free Sub-1 GHz frequency bands.

WAVIoT devices connected by the NB-Fi protocol use significantly less power and operate over large distances compared to Wi-Fi and Bluetooth connection protocols which require more power and work best in short range. Numerous devices send data through the WAVIoT bi-directional gateways. The gateways then detect, demodulate, and report the messages to the WAVIoT Cloud. The WAVIoT Cloud then exchanges these messages with the required customer servers and IoT applications platforms.

Table 4. Characteristics of NB-Fi communication module, modification for Europe

Parameter	Value
Wireless protocol	Bi-directional NB-Fi communications standard by WAVIoT
Distance ranging	Up to 10 km (urban), up to 30 km (rural)
Network topology	Star
Uplink frequency (for sending the NB-Fi messages to gateway)	868.1 MHz DC 1%, TX power 25 mW
Downlink (for receiving the NB-Fi messages from gateway)	869.6 MHz














## Normative documentation, containing requirements to WAVIoT EM 1

1. IEC 62052-11: 2016 / 2003 Electricity metering equipment (a.c.) - General requirements - Tests and test conditions - Part 11: Meters for electric energy (metering equipment)
2. IEC 62053-21: 2016 / 2003 Electricity metering equipment (a. c.) - Particular requirements - Part 21: Static meters for active energy (classes 1 and 2)
3. IEC 62053-23: 2016 / 2003 Electricity metering equipment (a. c.) - Particular requirements - Part 23: Static meters for reactive energy (classes 2 and 3)
4. IEC 61000-4-30:2015 Electromagnetic compatibility (EMC) - Part 4-30: Testing and measurement techniques - Power quality measurement methods

# WAVIoT Cloud

Utility meters consumption data

Reports  Electricity meters settings 

-  Poresko
-  Test vodomer
-  Test dubina 3m
-  Biblioteka
-  Opstina
-  Electricity
-  modem
-  Security House 1
-  Security House
-  Electricity
-  Heat
-  Lapovo central - kalolimetar
- 






























(\*) Modem: **795A8E** 

Last NB-Fi message: **16.07.2019 11:32 CEST**  NSNR: 86  
Very good signal

 Settings

Serial: **7953038**   
Phobos single phase direct power  
(hardware: 1.1.2.0; software: 1.1.5.3)

 Base station: **8555**   Offline

7953038  A- T1  0,115 kWh ⌚ 00:00 - 24:00	7953038  A- T2  0,000 kWh	7953038  A- T3  0,000 kWh	7953038  A- T4  0,000 kWh	7953038  A- ΣT  0,115 kWh	7953038 S- L1  0,029 kV-A	7953038 S- L2  0,028 kV-A	7953038 S- ΣL  0,029 kV-A	
7953038 A- ΣT  0,026 kWh	7953038 A- L1  0,000 kWh	7953038 A- L2  0,000 kWh	7953038 A- ΣL  0,000 kWh	7953038 cos(φ) L1  0,000 kWh	7953038 cos(φ) L2  0,000 kWh	7953038 cos(φ) ΣL  0,000 kWh	7953038 I ΣL  0,000 A	
7953038 I L1  0,000 A	7953038 I L2  0,000 A	7953038 f  50,000 Hz	7953038 L <sub>s</sub>  0,000 A	7953038 Q- ΣT  0,048 kWh	7953038 Q- L1  -0,029 kWh	7953038 Q- L2  -0,028 kWh	7953038 Q- ΣL  -0,029 kWh	
7953038 Q- ΣT 	7953038 V L1 	 Event log						

Picture 1. Phobos info and serial number with active phases

08.2019

By hours **By days** By months Period

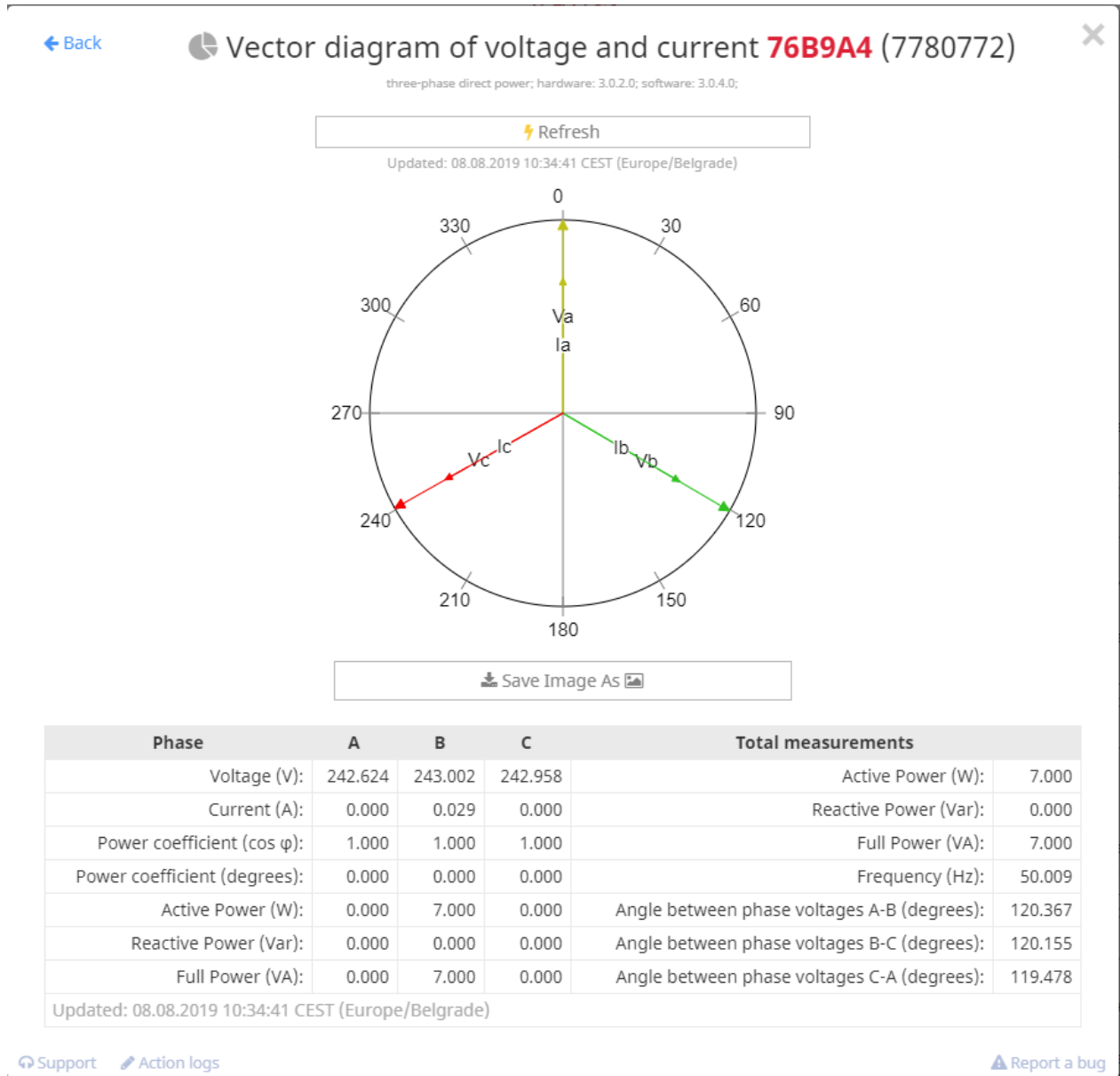
Interpolation

A<sup>-</sup> T1 Positive active energy in tariff T1  
OBIS code: 1.0.1.8.1.255 (0100010801FF)

Period	Readings for period		
	Begins, kW-h	Consumption, kW-h	Ends, kW-h
01.08.2019 Thursday	1 299,170	0,709	1 299,879
02.08.2019 Friday	1 299,879	0,700	1 300,579
03.08.2019 Saturday	1 300,579	0,633	1 301,212
04.08.2019 Sunday	1 301,212	0,775	1 301,987
05.08.2019 Monday	1 301,987	0,228	1 302,215
06.08.2019 Tuesday	1 302,215	0,752	1 302,967
07.08.2019 Wednesday	1 302,967	0,477	1 303,444
08.08.2019 Thursday	1 303,444	0,354	1 303,798
09.08.2019 Friday	1 303,798	0,581	1 304,379
10.08.2019 Saturday	1 304,379	0,983	1 305,362
11.08.2019 Sunday	1 305,362	0,834	1 306,196
12.08.2019 Monday	1 306,196	0,319	1 306,515
13.08.2019 Tuesday	1 306,515	0,859	1 307,374
14.08.2019 Wednesday	1 307,374	0,563	1 307,937
15.08.2019 Thursday	1 307,937	0,284	1 308,221
16.08.2019 Friday	1 308,221	0,339	1 308,560
17.08.2019	1 308,560	0,296	1 308,856

Picture 2. Readings for period





Picture 3. Vector diagram of voltage (when click on refresh it updates diagram instantly)

← Back Tariff Schedule Management **76B9A4** (7780772) ✕  
three-phase direct power; hardware: 3.0.2.0; software: 3.0.4.0;

[Get the tariff schedule from the electricity meter](#) ⚠ [What does all of this mean?](#)

⚡ Number of tariffs: 1 tariff 2 tariffs 3 tariffs 4 tariffs

T1 — daily rate      T2 — night rate  
T3 — semi-peak tariff      T4 — second semi-peak tariff

Day ⚡🕒 Hours:

MO	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
TU	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
WE	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
TH	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
FR	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
SA	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
SU	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23


Make different tariff schedules on different days of the week Save ↕

Support 📄 Logs 💾 Save to 📂 Open from ✎ Edit manually 🚩 Report a bug

Picture 4. Tariff Schedule Management

[← Back](#)  Power control and limitation **76B9A4** (7780772) ×

three-phase direct power; hardware: 3.0.2.0; software: 3.0.4.0;

 Sync data



















### Power supply

Off  Enabled  On


You can turn on or off the electricity supply for the subscriber

### Load relay state transition mode 0 1 2 3 4 5 6 **7**

Description of load relay state transition modes ↓

- 0 — Auto/manual/remote  power off /  power on disabled
- 1 — Auto/manual/remote  power off & manual  power on enabled
- 2 — Auto/manual/remote  power off & manual/remote  power on enabled
- 3 — Auto/remote  power off & manual  power on enabled
- 4 — Auto/remote  power off & manual/remote  power on enabled
- 5 — Auto/manual/remote  power off & auto  power on enabled, remote access to  power on is available
- 6 — Auto/remote  power off & local  power on enabled, remote access to  power on is available
- 7 — Auto/manual/remote  power off & manual/auto/remote  power on enabled (this is recommended load relay state transition mode!)


### Max power, W

 Change

If the average power will exceed the "Max power" parameter during the Measurement period of power consumption, the electricity will be turned off automatically.

For example, if a "Max power" parameter was set to 100 W, and a "Measurement period of power consumption" parameter was set to 10 seconds, and the subscriber turns on the electric kettle, then after 10 seconds of switching on the kettle, electricity will be turned off.

### Measurement period of power consumption, seconds


 Change

The period during which average power is measured in the network.

If the average power will exceed the "Max power" parameter, electricity will be turned off. The greater the specified period, the lower the probability that electricity will be turned off in case of with a significant accidental voltage surge in the network.

The greater the specified period, the lower the probability that with a significant accidental voltage surge in the network, the subscriber will turn off the electricity.

### Time to switch on, seconds

 Change

Time before the meter is turned on after its automatic shutdown.

For example, if you set the "Time to switch on" parameter to 60 seconds and electricity was turned off because of power limitation, the electricity will be turned on automatically after 60 seconds. If the electric kettle remains switched on, the cycle will be repeated.

[Support](#)  Action logs

 Report a bug

Picture 5. Power control (Turn of, turn on, set max power..)

ENERGY TRADING AND INVESTMENT doo, Beograd 11080, Dobropoljska 26-28

Tel. +381 62 815 19 45, e-mail: info@etidoo.com

Šifra delatnosti: 3514 | PIB: 110080345 | Matični broj: 21293628

Tekući račun: RSD 285-229100001126-85 | EUR 285-2291209900591-82 | USD 285-2291209900592-79

[← Back](#) ⚡ Instant readings and profile capture period **76B9A4** (7780772) ×

three-phase direct power; hardware: 3.0.2.0; software: 3.0.4.0;

⚡ Get momentary readings

Channel	Value
⌚ Meter time	23.08.2019 12:15:40 CEST
∠ A-B, Angle between phases L1 and L2	-
∠ B-C, Angle between phases L2 and L3	-
∠ A-C, Angle between phases L1 and L3	-
f, Frequency, Hz	-
I <sub>n</sub> , Neutral current, A	-
⚡ P <sub>max</sub> , Positive active maximum demand, W	40.000

Phase	L1	L2	L3	ΣL
⚡ Voltage, V	-	-	-	-
I, Current, A	-	-	-	-
A <sup>+</sup> , Active Power, kWt	-	-	-	-
Q <sup>+</sup> , Reactive Power, kVar	-	-	-	-
S <sup>+</sup> , Full Power, kV·A	-	-	-	-
cos φ, Power coefficient	-	-	-	-

Tariffs	T1	T2	T3	T4	ΣT
A <sup>+</sup> , Positive active energy, kW·h	-	-	-	-	1310.575
A <sup>-</sup> , Negative active energy, kW·h	-	-	-	-	0.000
Q <sup>+</sup> , Positive reactive energy, kVar·h	-	-	-	-	0.000
Q <sup>-</sup> , Negative reactive energy, kVar·h	-	-	-	-	13.568

⌚ Profile capture period

Minute!

✎ Change

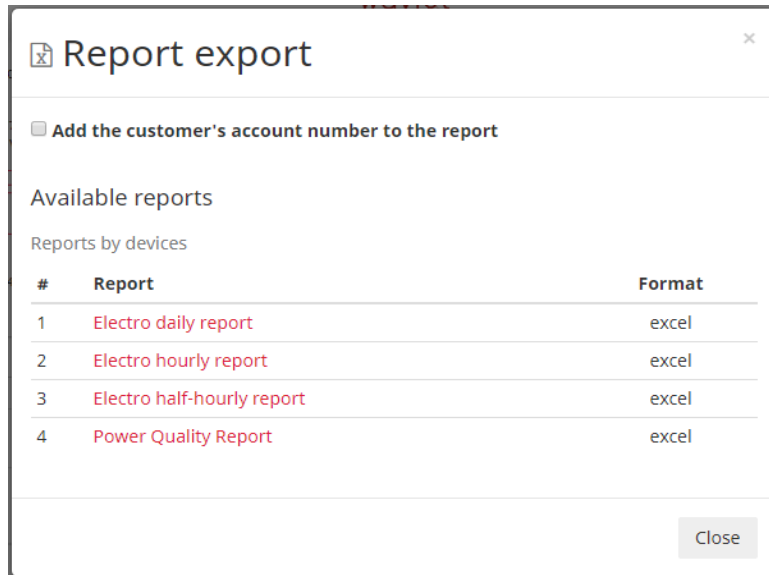
Minutes

0  60

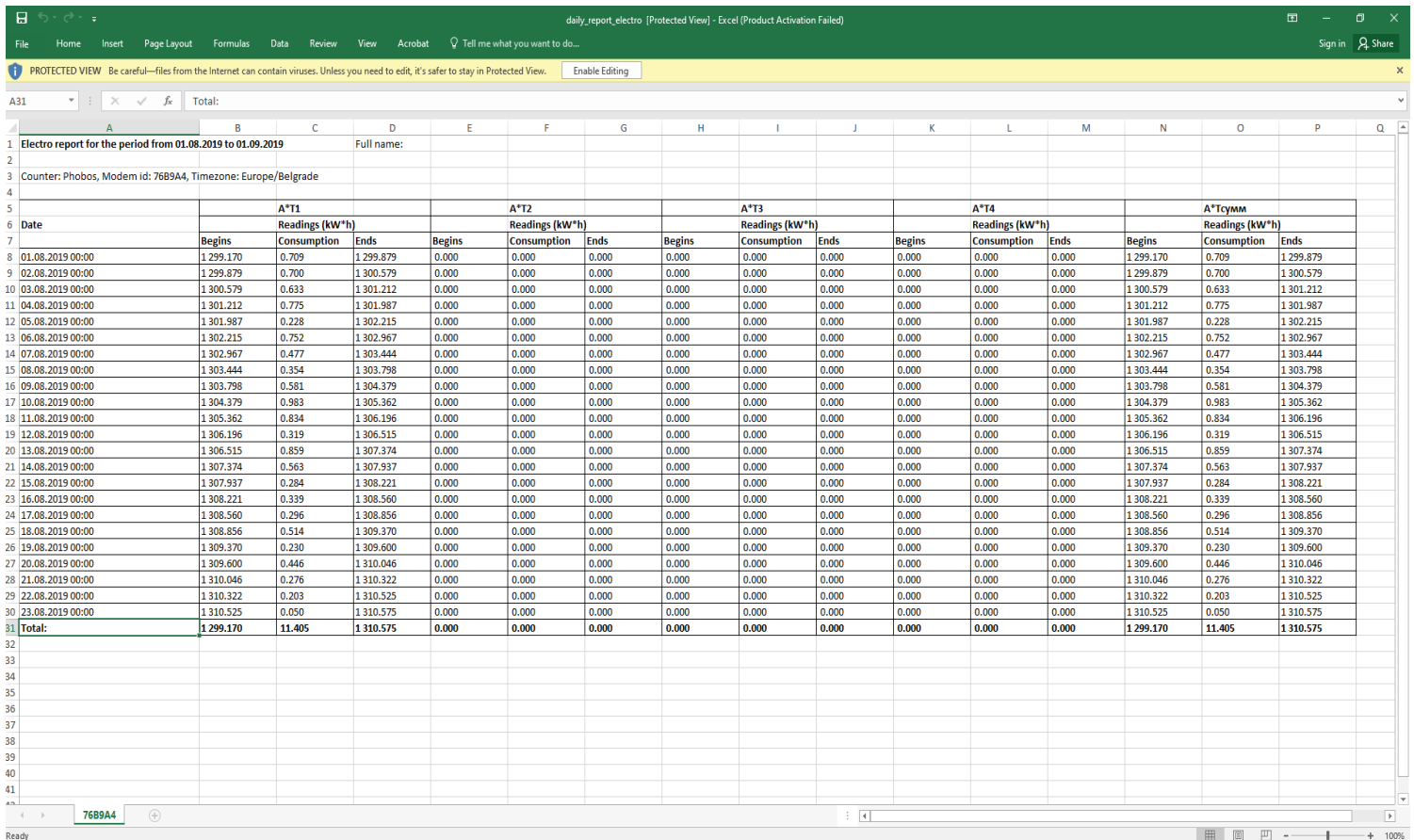
[Support](#) [Action logs](#)

[Report a bug](#)

Picture 6. Instant readings and profile capture period (Collect momentary readings and set profile capture period by your wish)



Picture 7. Report export



Date	A*T1			A*T2			A*T3			A*T4			A*Tcymm		
	Begins	Readings (kW*h)		Begins	Readings (kW*h)		Begins	Readings (kW*h)		Begins	Readings (kW*h)		Begins	Readings (kW*h)	
		Consumption	Ends		Consumption	Ends		Consumption	Ends		Consumption	Ends		Consumption	Ends
01.08.2019 00:00	1 299.170	0.709	1 299.879	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1 299.170	0.709	1 299.879
02.08.2019 00:00	1 299.879	0.700	1 300.579	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1 299.879	0.700	1 300.579
03.08.2019 00:00	1 300.579	0.633	1 301.212	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1 300.579	0.633	1 301.212
04.08.2019 00:00	1 301.212	0.775	1 301.987	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1 301.212	0.775	1 301.987
05.08.2019 00:00	1 301.987	0.728	1 302.215	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1 301.987	0.728	1 302.215
06.08.2019 00:00	1 302.215	0.752	1 302.967	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1 302.215	0.752	1 302.967
07.08.2019 00:00	1 302.967	0.477	1 303.444	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1 302.967	0.477	1 303.444
08.08.2019 00:00	1 303.444	0.354	1 303.798	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1 303.444	0.354	1 303.798
09.08.2019 00:00	1 303.798	0.581	1 304.379	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1 303.798	0.581	1 304.379
10.08.2019 00:00	1 304.379	0.983	1 305.362	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1 304.379	0.983	1 305.362
11.08.2019 00:00	1 305.362	0.834	1 306.196	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1 305.362	0.834	1 306.196
12.08.2019 00:00	1 306.196	0.319	1 306.515	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1 306.196	0.319	1 306.515
13.08.2019 00:00	1 306.515	0.859	1 307.374	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1 306.515	0.859	1 307.374
14.08.2019 00:00	1 307.374	0.563	1 307.937	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1 307.374	0.563	1 307.937
15.08.2019 00:00	1 307.937	0.284	1 308.221	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1 307.937	0.284	1 308.221
16.08.2019 00:00	1 308.221	0.339	1 308.560	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1 308.221	0.339	1 308.560
17.08.2019 00:00	1 308.560	0.296	1 308.856	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1 308.560	0.296	1 308.856
18.08.2019 00:00	1 308.856	0.514	1 309.370	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1 308.856	0.514	1 309.370
19.08.2019 00:00	1 309.370	0.230	1 309.600	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1 309.370	0.230	1 309.600
20.08.2019 00:00	1 309.600	0.446	1 310.046	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1 309.600	0.446	1 310.046
21.08.2019 00:00	1 310.046	0.276	1 310.322	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1 310.046	0.276	1 310.322
22.08.2019 00:00	1 310.322	0.203	1 310.525	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1 310.322	0.203	1 310.525
23.08.2019 00:00	1 310.525	0.050	1 310.575	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1 310.525	0.050	1 310.575
<b>Total:</b>	<b>1 299.170</b>	<b>11.405</b>	<b>1 310.575</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>1 299.170</b>	<b>11.405</b>	<b>1 310.575</b>

Picture 8. Example of report export

ENERGY TRADING AND INVESTMENT doo, Beograd 11080, Dobropoljska 26-28

Tel. +381 62 815 19 45, e-mail: info@etidoo.com

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