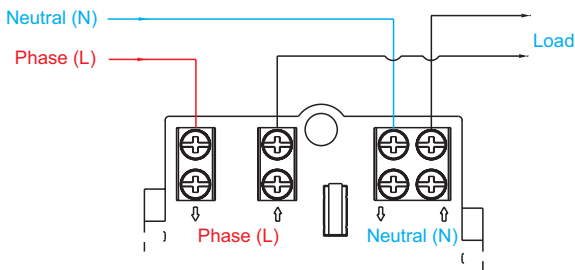


Mono-Phase Electronic Electricity Meter



1- INTRODUCTION

The VEES-1 is a multi-tariff, active, indoor electronic electricity meter. Its hardware and software were developed at the R&D department of VIKO and it's being produced at the VIKO facilities. The electronic electricity meters are being produced for single phase and double wire connection.

The VEES-1 meter has the capability to split the day into 8 different time segments with the precision range of a minute. A billing tariff can be assigned to each time segment. During the day maximum of 4 billing tariffs can be assigned for all time segments. The current software of VEES-1 electricity meter splits the day into 3 different time segments and allows the calculation of different tariffs for each time segment. If desired the other time segments and tariffs can be activated through the optical port. Our main goal for the design was to achieve a more distributed use of electrical energy during the day. As a result of this, the consumers will be able to consume the energy more effective and with cost consciousness.

2- OPERATING COMPONENTS

A) Warranty seal

This label is placed on the joint between the body and the cover of the meter in order to indicate unauthorized opening of the meter.

B) Technical information coding

Information about rated working voltage, rated and maximum currents, working frequency are displayed by the Technical Information Coding. In order to prevent possible hazards, note should be taken of this information by any means.

C) Menu button

This button is used to change between the menu items shown on the LCD display. Every push of this button lets the user step to the next item on the menu.

D) Active power consumption led

Every 10 blinks of this LED indicate an increase of 0,01 kWh of power. The calibration of the device is being made according to the frequency of this LED.

E) Liquid crystal display

This high resolution display unit has the function of indicating power usage, time and date, as well as warning informations regarding the device to the users.

F) Production year and serial number

This typographic coding indicates the production year and serial number of the product, required for warranty procedures and product traceability.

G) Optical port

The optical port is a communication interface that is used by authorized persons for obtaining information on power consumption in past months and reprogramming the unit when necessary.

H) Connector sealing screw

It prevents unauthorized people from interfering the power connections of the meter.

MOUNTING AND INSTALLATION

The mounting holes and points of the VEES-1 meter were designed to fit into existing electricity panels. The installation points on the top of the meter and underneath on both sides of the connector body enable easy installation of the meter to any electricity panel.

NOTICE!

- A wrong wiring or installation may result in permanent damage to your device. Therefore please conform with the above connection diagram when installing your meter.
- Only technically authorized people should make the installation.
- When making the wiring, the technical information coding on the glass of the meter should be taken note of.
- The cables to be inserted into the connectors should be peeled without being damaged and only the isolated part of the cables should be visible.
- The screws of the connectors must be tightened properly to ensure that the cable ends stay inside the connectors.
- When mounting the meter, the mounting screws should be tightened carefully since the meter could be damaged if the applied pressure is too high. Such damage would be assessed as user operational failure.

Users and technical staff making the installation must pay attention to the above mentioned points. Otherwise, all damage assessed will be interpreted to be made by the user, resulting in the warranty to be void.

Operation Of The Meter

Environmental conditions are very important, since the VEES-1 electronic electricity meter consists mostly of precision surface mounted components. Due to its use in electrical panels utmost care should be taken. After proper closure of the lid covering the phase and neutral connectors, there is no expected risk for damage. The meter should never be opened by the user for service or other purposes. The VEES-1 meters protection class is IP-51. For this reason, the meter should not be exposed to direct or indirect water splashes as well as submerged into water or kept in a dusty environment. It should also be protected against mechanical impacts and not be operated in very hot or humid environments or under direct sunlight. Solvents should never be used to clean the outer surface of the meter. In case of any defects regarding the "indoor use designed" VEES-1 meter, you should contact authorized service stations or the dealer from which you have purchased it.

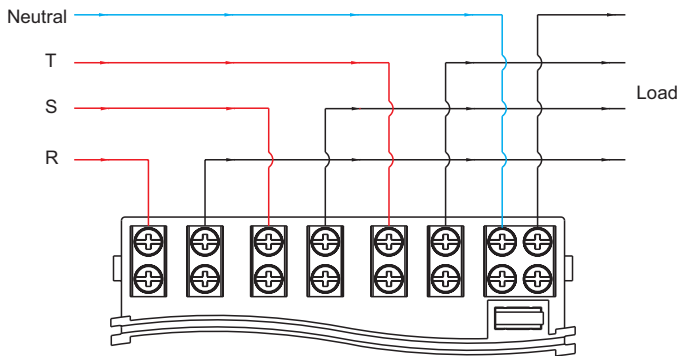
Menus

After properly connecting the power to the meter, a list that indicates the "TOTAL CONSUMPTION" in kWh will appear on the LCD screen. After a brief time, T1, T2, T3, T4, DEMAND, TIME, DATE and SERIAL NUMBER indications will appear respectively in periods of 5 seconds on the LCD screen.

List of Technical Features of the Meter

No	Features	Explanation
1	Brand	VIKO
2	Model	VEES-1
3	Serial Number	
4	Installation Type	1 Phase, 2 Wires
5	Class	Class 1
6	Voltage	220 V
7	Current	10 (60) A
8	Measuring Method	Primary Direct Connected Active Meter
9	Tariff Type	Multi-Tariff, Active
10	Battery Life	10 Years Working Life, 4 Years Stock Life
11	Tariff Hours	The below (12, 13, 14) tariffs apply all year long
12	Daytime Tariff	T1 (06:00 - 17:00)
13	Evening Tariff	T2 (17:00 - 22:00)
14	Night Tariff	T3 (22:00 - 06:00)
15	Summer and Winter Time	On Sunday in the last week of March, the clock switches from 01:00 to 02:00 On Sunday in the last week of October, the clock switches from 02:00 to 01:00

Three-Phase Electronic Electricity Meter



1- INTRODUCTION

The VEES-3 multi-tariff, active, indoor electronic electricity meter and its software were developed at the R&D department of VIKO and its production continues at the VIKO facilities. The electronic electricity meters are being produced with single phase and double wire connection.

The VEES-3 meter has the capability to split the day into 8 different segments with the precision range of a minute, but currently only 4 tariffs are activated for use. If desired the other tariffs can be activated through the optical port. Our main goal during the production was to achieve a more effective use of electrical energy. The software of VEES-3 electricity meter splits the day into 3 different time segments and allows the calculation of different tariffs for each time segment. As a result of this, the consumers will be able to consume the energy more effective and with cost consciousness.

2- OPERATING COMPONENTS

A) Warranty Seal

This label is placed on the joint between the body and the cover of the meter in order to prevent it to be opened by others than the authorized people or institutions.

B) Technical Information Coding

Information about rated working voltage, rated and maximum currents working frequency are being displayed in the Technical Information Coding. It should be taken note of this information by any means, in order to prevent possible hazards.

C) Menu Button

This button is used to switch between the menus shown on the LCD display. Every push of this button lets the user step to the next menu.

D) Active Power Consumption Led

Every 10 blinks of this LED indicate an increase of 0,01 kWh of power. The sensitivity calibration of the device is being made according to the frequency of this LED.

E) Liquid Crystal Display

This high resolution visual unit has the function of displaying all information and explanation from inside the device to the outer environment.



F) Production Year And Serial Number

This typographic coding indicates the production year and serial number of the product, which are necessary for warranty procedures and product watching.

G) Optical Port

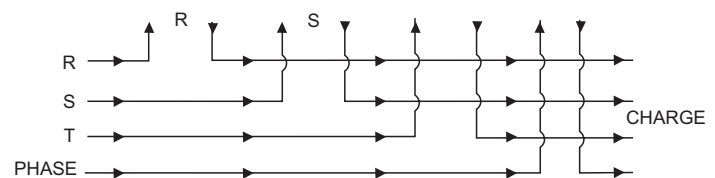
The optical port is a communication interface that is used by authorized persons for obtaining information on index and consumption in past months and reprogramming the unit when necessary.

H) Connector Sealing Screw

It prevents unauthorized people from tampering the connections of the meter.

3- MOUNTING AND INSTALLATION

The installation points of the VEES-3 meter were designed to fit into existing panels. The installation part on the top of the meter and the ones on both sides of the connector body on its underside enable easy installation of the meter to any panel.



NOTICE!

- A wrong wiring or installation may result in permanent damage to your device. Therefore please conform with the above connection diagram when installing your meter.
- Only technically authorized people should make the installation.
- When making the wiring, the technical information coding on the glass of the meter should be taken note of.
- The cables to be inserted into the connectors should be peeled without being damaged and only the isolated part of the cables should be visible.
- The screws of the connectors must be tightened properly to ensure that the cable ends stay inside the connectors.
- When mounting the meter, the mounting screws should be tightened carefully since the meter could be damaged if the applied pressure is too high. Such damage would be assessed as user operational failure.

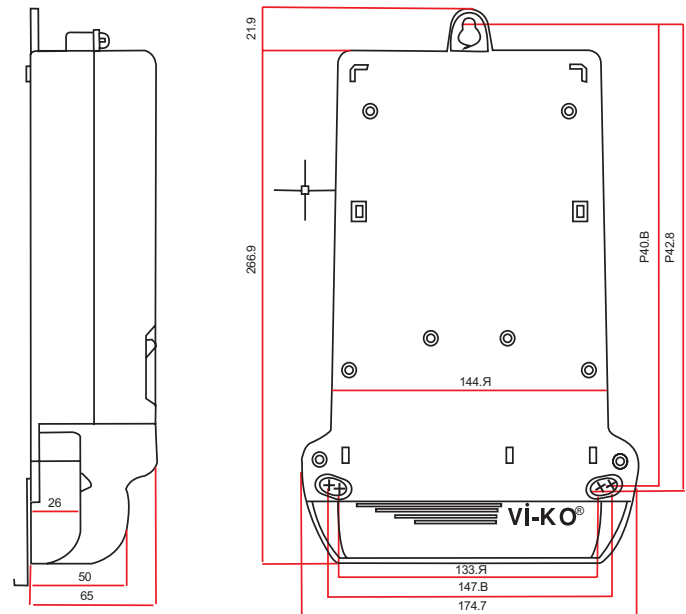
Users and technical staff making the installation must pay attention to the above mentioned points. Otherwise, all damage assessed will be interpreted to be made by the user, resulting in the warranty to be void.

Operation Of The Meter

Environmental conditions are very important, since the VEES-3 electronic electricity meter consists fully of surface mounted components. One should be very careful because it is used on electrical panels. There is no risk whatsoever, after the lid covering the phase and neutral connectors has been closed and sealed. The meter should never be opened by the user for service or other purposes. The VEES-3 meters protection class is IP-51. For this reason, there should never be flushed water towards the meter and the meter should never be inserted into water or kept in an environment with much dust. It should also be protected against mechanical shocks and not be operated in very hot or humid environments or under direct sunlight. Solvents should never be used to clean the outer surface of the meter. In case of any defects on this for indoor use designed VEES-3 meter, you should contact authorized service stations or the dealer from which you have purchased it.

Menus

After connecting the meter with energy, a list that indicates the "TOTAL CONSUMPTION" in kWh will appear on the LCD screen. After the time period determined according to standards has passed, T1, T2, T3, T4, DEMAND, TIME, DATE and SERIAL NUMBER will appear respectively in periods of 5 seconds on the LCD screen.



List of Technical Features of the Meter

No	Features	Explanation
1	Brand	VIKO
2	Model	VEES-3
3	Serial Number	
4	Installation Type	3 Phase, 4 Wires
5	Class	Class 1
6	Voltage	3 X 220 V / 380 V
7	Current	3 X 10 (60) A
8	Measuring Method	Primary Direct Connected Active Meter
9	Tariff Type	Multi-Tariff, Active
10	Battery Life	10 Years Working Life, 4 Years Stock Life
11	Tariff Hours	The below (12, 13, 14) tariffs apply all year long
12	Daytime Tariff	T1 (06:00 - 17:00)
13	Evening Tariff	T2 (17:00 - 22:00)
14	Night Tariff	T3 (22:00 - 06:00)
15	Summer and Winter Time	On Sunday in the last week of March, the clock switches from 01:00 to 02:00 On Sunday in the last week of October, the clock switches from 02:00 to 01:00