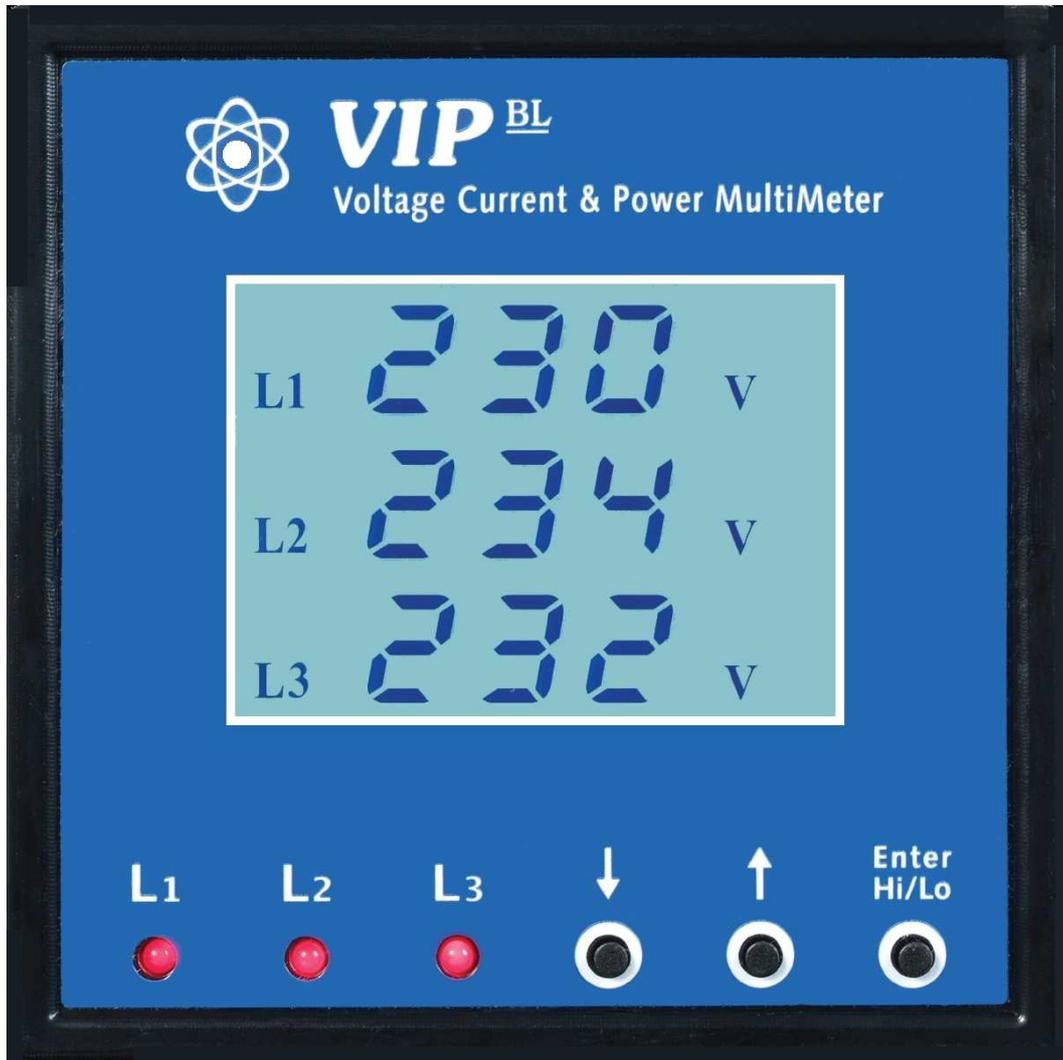


CONTROL APPLICATIONS Ltd.

Supervision & control system

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VIP

Current & Power MultiMeter

Rev 1.6

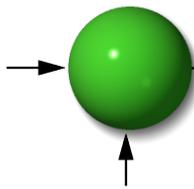
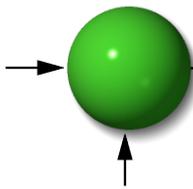


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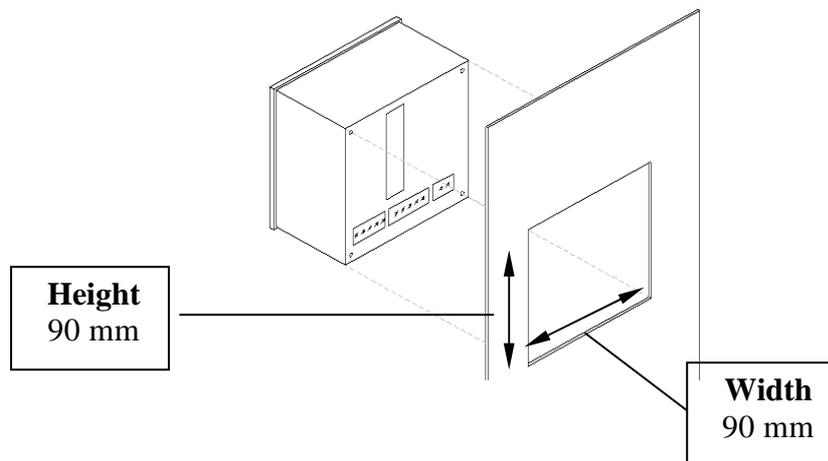


Dear customer, thank you for selecting the VIP Multimeter for measurements of voltage, current, power and power factor.

1. Mechanical Installation

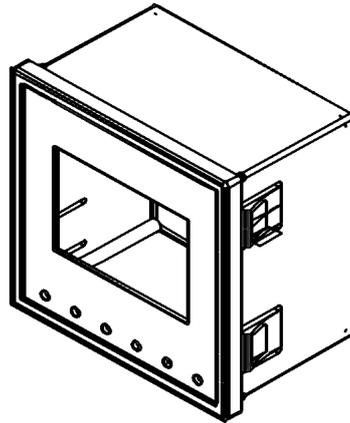
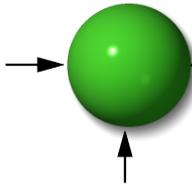
Comment: Please do not install the VIP Multimeter close to electrical bars.
Please leave enough space for approaching the device from its back side for providing technical support.

1.1 Please choose the proper place for installation in panel and prepare a square hole according to exhibit below.

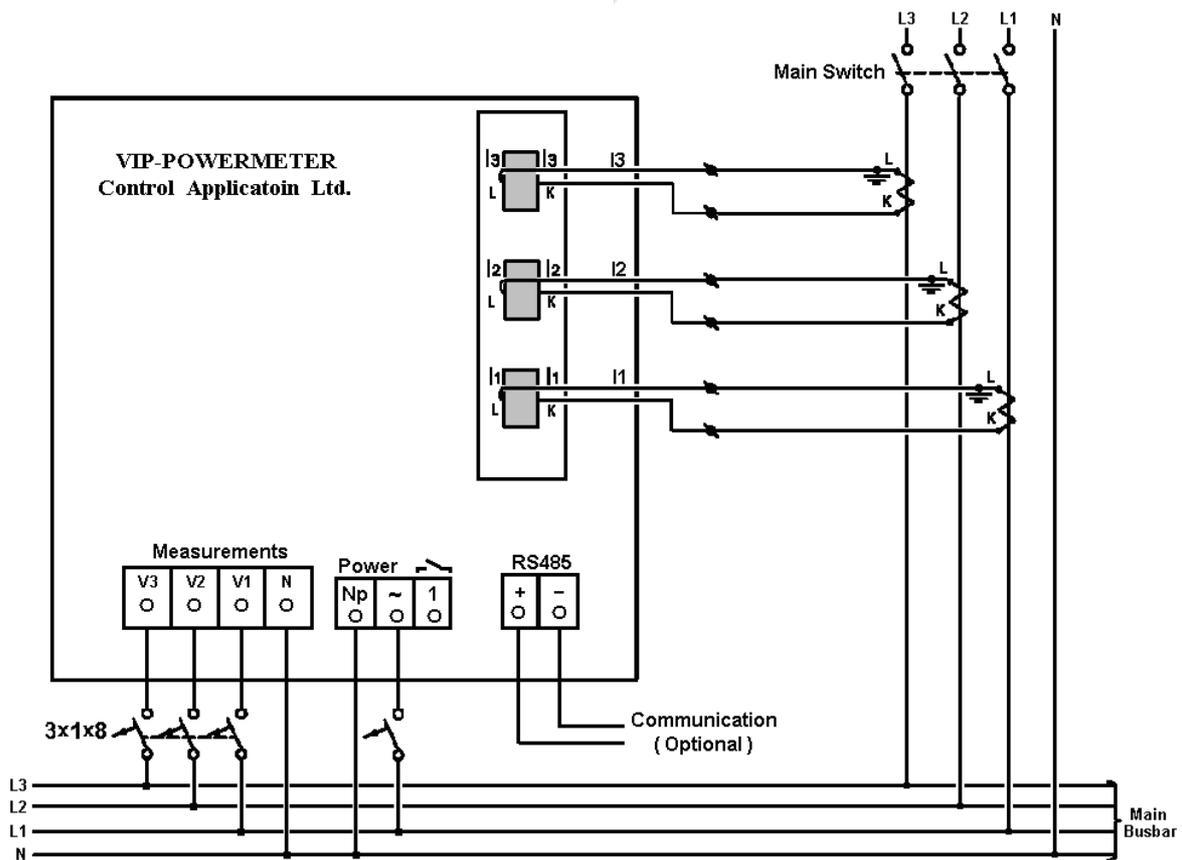


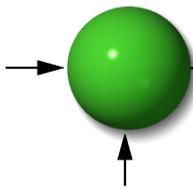
Space in the electrical panel

1.2 Please insert the VIP Multimeter into the suitable space which is to be prepared in advance. Make sure that the device is inserted in the right direction. The device has a plastic knob which adjusts itself for installation in electrical panels. The thickness of the panel door should be less than 4 mm.



2. Wiring diagram





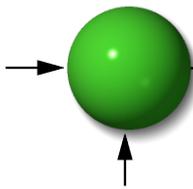
3. Specifications

3.1 Technical Specifications

Item	Description
Power requirements	110 or 220 VAC \pm 10%, 60/50 Hz, 20VA
Dimensions	(HxWxD) 96x96x80 mm
Shipping Weight	514 gr.
Voltage limits	1000VAC
Current limits	50A
Enclosure material	ABS + Antiflame
Operating temperature	-20 - + 70 C
Storage temperature	-20 - + 80 C
Humidity	0- 90 RH%
Voltage input terminals	VL – E10 1708
Mounting	Front panel mounting
Digital Output (optional)	Dry contact

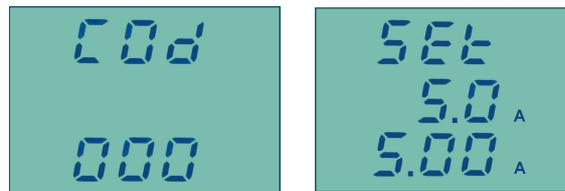
3.2 Measuring Specifications

Measurement Parameter	Display Range in direct connection (scaling factor 1)	Measuring in direct connection (scaling factor 1)	Display Range
Current	0.01 – 6A	0.01 – 6A	0.01 – 999KA
Neutral Current (calculated)	0.01 – 6A	0.01 – 6A	0.01 – 999KA
Voltage L-N	0.00 – 650 V	0.00 – 650 V	0.01 – 999KV
Voltage L-L	0.00 – 650 V	0.00 – 650 V	0.01 – 999KV
Frequency (Hz)	45.1-65.1 Hz	45.1-65.1 Hz	45.1-65.1 Hz
Active power total\phase			0.00W – 999KW
Reactive power total\phase			0.00VAR - 999KVAR
Apparent power total\phase			0.00VA - 999KVA
Power Factor (cap.\ind.)	-1.00 \div 1.00	-1.00 \div 1.00	-1.00 \div 1.00



4. Current transformer ratio settings

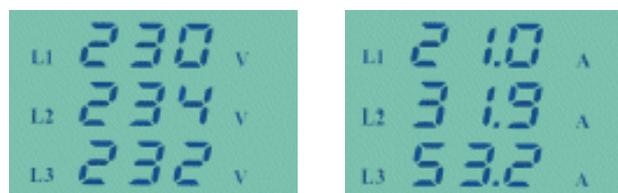
- 4.1 Press the "Enter" button for about 6 seconds.
- 4.2 The enter password screen will appear: "COD".
- 4.3 Use "↑" button to change the code to "1" and press Enter.
- 4.4 The current transformer set screen will appear.

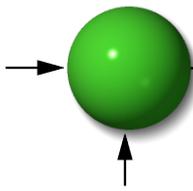


- 4.5 The headline "SET" will be displayed on the screen, on the second line the secondary value of current transformer (5A), the third line allows to define the value of the primary current transformers with the "↑ ↓" buttons. At the end press Enter.

5. Measured values display

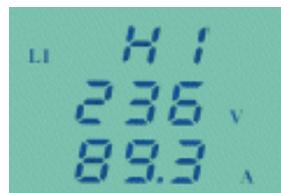
- 5.1 Use the "↑ ↓" buttons to browse among all the display screens including three-phase display of voltage, current, power, frequency, power factor and integrated screens of voltage, current and power factor for each phase.





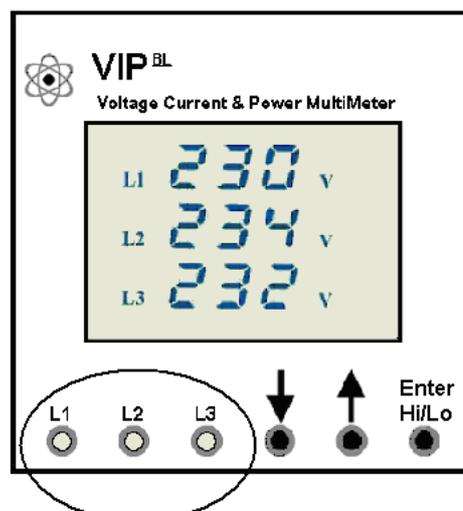
6. Peaks display

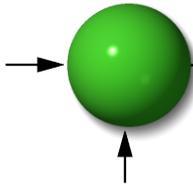
6.1 Pressing the Hi/Lo button (each press replaces screens circularly), enables you to browse among the screens specifying the peak of voltage and current that were ever measured for each phase. The first screens display the highest values measured of voltage and current (Hi); the next screens display the lowest values measured of voltage and current (Lo) and then respectively high and low frequency and power factor for each phase.



7. Indication led

7.1 The indication led easily enables to identify whether there is voltage in phases L1, L2, L3. In case there is voltage in phases connections the led will be turned on (50 VAC at least).





8. Communication Settings:

In order to connect the *EINet VIP* Power Multimeter to a PC or other device, for successful communications, both Communication Setup parameters must match; i.e. the PC port and the configuration settings of the Power meter, Address, Baud Rate, Parity must match.

8.1 Communication Address:

Each Power meter in a communication system must have its own unique address. *EINet VIP* works on MODBUS protocol, so the available addresses are - from '1' to '247'.

8.2 Baud Rate:

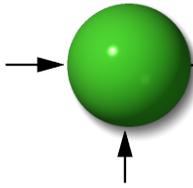
The Baud Rate is the communication speed in Bits per second (BPS) for communication between *EINet VIP* with the PC or other device. The better the communication line quality, the faster the communications may be (higher Baud Rate value). If the communication line is routed through a "noisy" environment, it may be necessary to decrease the Baud Rate.

8.3 Available Baud Rates for the EINet VIP

Are: 300; 600; 1200; 2400; 9600; 19200 bps.

8.4 Parity:

The parity can be defined as **ODD**, **NONE** or **EVEN**.



8.5 Set up Communication

8.5.1 Press the "Enter" button for about 6 seconds until the insert password screen will appear.

8.5.2 Use the "↑" to change the password (COD) to "2" and press "Enter".

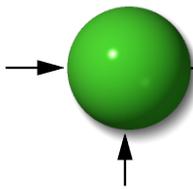
8.5.3 The message "SET" will blink on the screen. On the second line, you will find the functions that require setting.



Figure 6.1 – **Communications settings**

8.5.4 Use the "↑ ↓" buttons to chose the required communication feature and press "Enter":

- Address "**Adr**" – can be changed by using "↑ ↓" buttons from 1 to 255, when finished press "Enter".
- Baud "**bud**" – use the "↑ ↓" buttons to choose 300,600,1200,2400,4800,9600,19200.
- Parity "**PAr**" - use the "↑ ↓" buttons to choose from:
 - O81 - ODD, 8 data bit, 1 Stop bit.
 - E81 - EVEN, 8 data bit, 1 Stop bit.
 - n81 - NONE, 8 data bit, 1 Stop bit.



9. No volt relay

9.1 General:

When the voltage is proper (above 50VAC, adjustable) and the phases' order is proper the indication relay is closed, as appears at the wiring diagram. The maximum current that is possible to transfer through this relay is 150ma which is enough to operate a regular control relay.

9.2 No volt alarm setting:

9.2.1 In order to set the minimum voltage value for the no volt relay press the "Enter" button for about 6 seconds.

9.2.2 Use the "↑ ↓" buttons to change the password to "code 21" and press "Enter".

9.2.3 "SET AL" will appear and it would be possible to set the min. voltage ratio by using the "↑ ↓". After setting this value save it by pressing the "Enter" button.



9.3 Phase order alarm:

9.3.1 In order to turn ON/OFF the phase order relay, press the "Enter" button for about 6 seconds.

9.3.2 Use the "↑ ↓" buttons to "code 31" and press Enter.

9.3.3 The phase order screen will appear and it would enable you to select YES/NO (equivalent to ON/OFF). After setting the desirable option save it by pressing the "Enter" button.

