



Mod. **ENERGY-400R PWR**
Mod. **ENERGY-400R PWRi**

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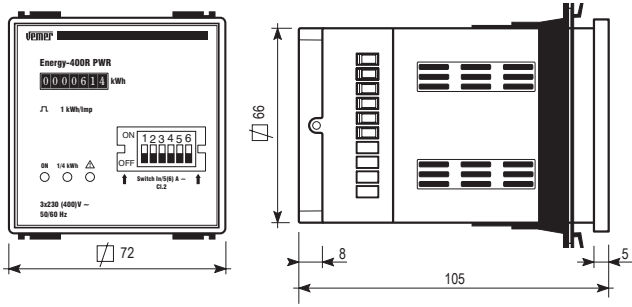
User Manual

ACTIVE ENERGY METER

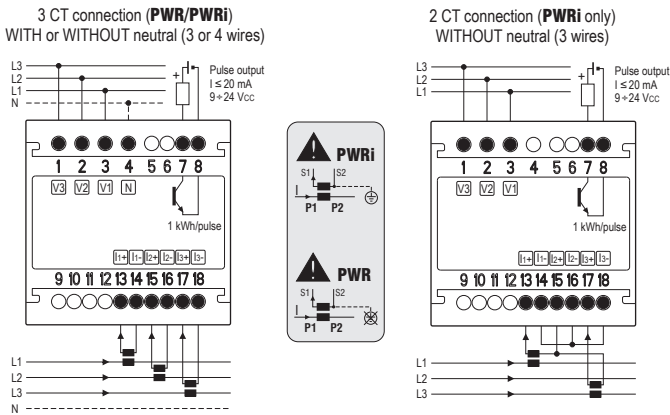
Read all the instructions carefully

- Static meter in standard dimensions 72x72 mm to read active energy consumption in three-phase 400V systems:
 - for ENERGY-400R PWR: current inputs by **shunt**;
 - for ENERGY-400R PWRi: current inputs by **coils** with galvanic insulation between primary and secondary.
- Amperometric connection by **CT x/5A**.

Dimensions

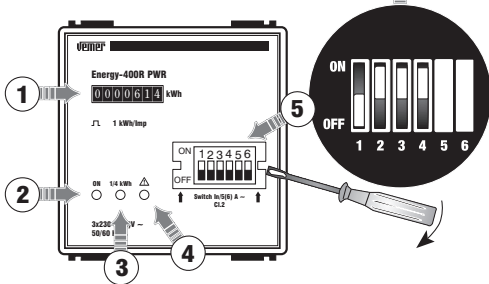


Connection diagrams

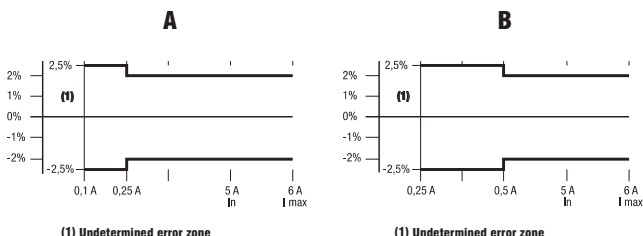


Description

OFF	1 2 3 4	TA	1 2 3 4	TA	1 2 3 4	TA	1 2 3 4	TA	ON
█	█	5/5A	█	75/5A	█	200/5A	█	500/5A	█
█	█	10/5A	█	100/5A	█	250/5A	█	600/5A	█
█	█	25/5A	█	125/5A	█	300/5A	█	800/5A	█
█	█	50/5A	█	150/5A	█	400/5A	█	1000/5A	█



Accuracy



SAFETY WARNINGS

- To guarantee correct installation, proceed as follows:**
- 1) The appliance should be installed by a competent operator
 - 2) The appliance should be installed in a panel in such a way as to guarantee that the terminals are inaccessible after fitting
 - 3) A protection device against over-currents should be installed in the electrical system, upstream of the energy meter
 - 4) Connect the instrument as shown in the alongside diagrams
 - 5) Before touching the connector terminals make sure that the wires to be connected or already connected to the instrument are not live
 - 6) Touch the dip-switches only when the instrument is not powered
 - 7) Do not power or connect the instrument if any part of it is damaged

Code	Model	Description
VE010500	ENERGY-400R PWR	Three-phase energy meter
VE011300	ENERGY-400R PWRi	Three-phase energy meter

TECHNICAL SPECIFICATIONS

- Power supply voltage: 3x230 phase-neutral (400 phase-phase) VCA (-15%/+10%) 50/60Hz
- Input current: $I_n = 5A$; $I_{MAX} = 6A$
- Minimum start-up current: 15mA
- Accuracy: class 2 to standards EN 62053-21
- Maximum power consumption: voltage circuits < 2,5VA
current circuits < 2,5VA
- Galvanically isolated amperometric input (**for PWRi model only**)
- Amperometric connection by CT x/5A
- Selectable transformation ratios (for CT x/5 A): 5-10-25-50-75-100-125-150-200-250-300-400-500-600-800-1000/5
- Operating temperature: $-10 \div +45 \text{ }^\circ\text{C}$
- Relative humidity: 10% \div 90% non condensing
- Storage temperature: $-20 \div +60 \text{ }^\circ\text{C}$
- Signaling leds: green = power on
red = flashing at 1/4 kWh
yellow = when lit the instrument detects 1/4 kWh negative (probable incorrect entry) and remains lit until 1/4 kWh positive is detected
- Optoinsulated pulse output for energy consumption remote-monitoring (1 kWh/pulse)
- Pulse specifications: duration = 100 ms \pm 15%
voltage = 9 \div 24V CC (\pm 10%)
switchable output current 20mA max
- Protection degree: IP20
- Enclosure: standard dimensions 72x72mm

INSTRUMENT DESCRIPTION

- ① 7-digit mechanical counter: resolution 1 kWh
- ② Green warning light: lights up to indicate power on
- ③ Red warning light: every flash corresponds to an energy count of 1/4 kWh
- ④ Yellow warning light: when lit the instrument detects 1/4 kWh negative (probable incorrect entry) and remains lit until 1/4 kWh positive is detected
- ⑤ Dip-switch 1-2-3-4 for CT setting, Dip-switch 5-6 not used

GUIDE TO INSTALLATION

- 1) Before installing the instrument, select the transformation ratio required. Use an x/5A outer CT with a transformation ratio from among those set out in the description box. **For model PWRi only**, the CT secondaries may be connected to earth.
- 2) The instrument should be connected as shown in the connection diagrams, in accordance with the CT energy directions.
- 3) If the error is to fall within the class limits of the instrument, it is necessary to use the current transformer in its linear operating field.
See the precision box:
 - Maximum measurement error in accordance with EN 62053-21 for class 2 meters with $\cos \varphi = 0,5$ inductive **(A)**;
 - Maximum measurement error in accordance with EN 62053-21 for class 2 meters with $\cos \varphi = 1$ and voltage and frequency reference conditions **(B)**.
- 4) If the instrument is active, the power should be switched off to change the CT ratio.

REFERENCE STANDARDS

Conformity to the EU directives:
73/23/ECC modified by **93/68/ECC** (Low Voltage)
89/336/ECC modified by **92/31/ECC** and **93/68/ECC** (E.M.C.)
 is declared with reference to the following harmonised standard:
 EN 61010-1, EN 61000-6-2, EN 61000-6-3, EN 62053-21 and EN 62052-11