

PEWM-3C-1

Portable Single Phase Working Standard – Class 0.2

(used for quick tests of single-phase electricity meters)

APPLICATION AND BRIEF DESCRIPTION



The single-phase energy standard PEWM-3C-1 is used for on-site testing of all types single-phase electricity meters – for active, reactive or apparent energy, electromechanical and electronic. Voltage and current are measured at the same time. The current can be measured with a current **clamp to 120A or 150A**. The current clamp is electronically compensated.

Error of the electricity meter can be determined. The disc revolutions or the pulses from the electricity meter can be counted with a universal scanning head (type EH 11) or manually with the help of a hand switch. The scanning head is suitable for disk flag detection (red or black), or LED pulses from electronic meters (square, pulse, or modulated). The **registers** of the electricity meter can be tested too, a preliminary quantity of energy being set in this latter case.

Other functions of the device are indication of the numerical values of **current, voltage, phase shift, power, cos φ** and **harmonic** distortion measurement; drawing of two input signal waveforms in real time (two beam **oscilloscope**).

PEWM-3C-1 is indicating also the **Date and Time**. The information about the date and time of testing is saved together with the measurement results. The device has got a **unique wide-range power supply**, which is powered from the voltage measuring circuit, or from an auxiliary supply.

Instrument case is protected with a **rubber cover** against dropping or blow. 200 screen displays with Meter Error or General Circuit Measurement can be memorized in a non-volatile memory and transferred to a computer via **RS 232**. The **PEWM-3C-1 Software** is operating under Windows (XP, Vista, Windows7 or 8). The program transfers the readout data into a database, and is able to perform search with different criteria and print reports.

NEW: PEWM-3C-1 is offered now with 5" color display – 65 K colors

TECHNICAL DATA	
Power supply auxiliary	230 Vac +15%, -25%
Power supply from the measuring circuit	45 Vac ... 480 Vac
Power consumption	max 10 VA
Dimensions	220 x 130 x 75 mm
Weight	1.6 kg
Housing	Hard plastic with protection
Operation temperature	-15 °C ... +50 °C
Storage temperature	-20 °C ... +60 °C
Relative humidity	< 95% non-condensing
Pulse output (isolated, blinking LED)	Programmable value, max.100 000 imp/kWh (kVarh)
Graphic, monochrome 5" LCD display or Color 5" display, 65K colors	160 x 128 pixels 640 x 480 pixels
Degree of protection	IP 52
Temperature coefficient	0.01% / K
Jaw capacity of 120 A CC	12 mm diameter
Jaw capacity of 150 A CC	20 mm diameter

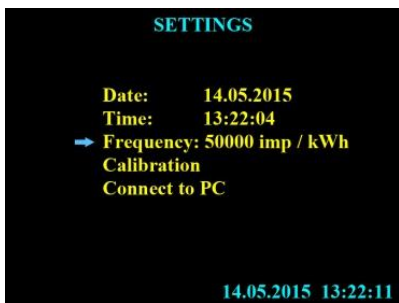
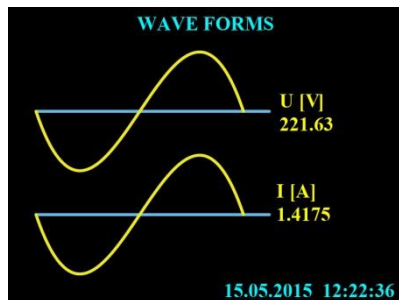
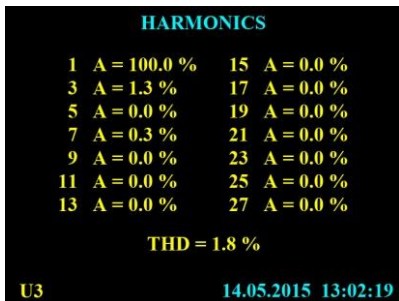
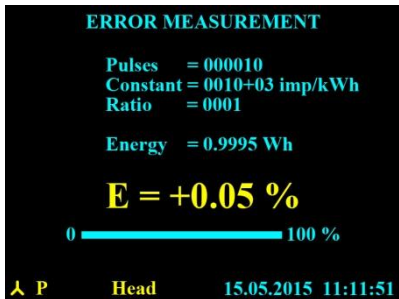
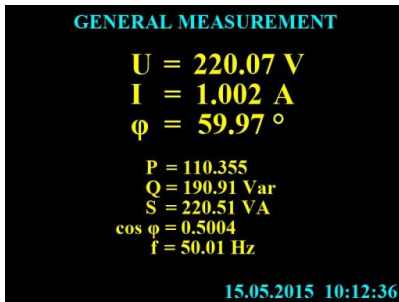
MEASUREMENT ERROR		
	ERROR	RANGE
Voltage	± 0.05 %	50.00 V ... 300.00 V
	± 0.2 %	5.00 V ... 49.99 V
Current (120 A CC)	± 0.2 %	0.100 A ... 120.0 A
	± 0.4 %	0.020 A ... 0.099 A
Current (150 A CC)	± 0.2 %	0.200 A ... 150.0 A
Power / energy (120 A CC)	± 0.2 %	0.100 A ... 120.0 A
Power / energy (150 A CC)	± 0.2 %	0.200 A ... 150.0 A
Phase angle	± 0.1° (CC)	0.0° ... 359.9°
Frequency	± 0.01 Hz	40.00 Hz ... 70.00 Hz
Power Factor	± 0.002	-1.000 ... +1.000

Note: The power / energy errors are related to apparent power
(To be divided to the Power Factor for active and reactive energy)

SAFETY TESTS: EN 61010-1, EN 61010-2-032, 300 V, Cat III

EMC TESTS: EN 61000-4-2, EN 61000-4-4; EN 61000-4-5, EN 61000-4-6

FUNCTIONALITY: EN 60736, EN 62053, EN 60044-1, EN 61000-4-32



General measurement

The true RMS values of voltage and current, the angle between them, active, reactive and apparent power, power factor and frequency are indicated in this mode.

Error measurement

The device indicates the electricity meter error in [%] and the true value of energy in this mode. The delivery of pulses is traced with a bar-graph. The pulses or revolutions number “P”, the constant of the electricity meter “C” and the ratio “R” are preset by the operator. The measurement can be changed for active, reactive or apparent energy. The operator is able to enter the pulses manually (using the Manual button or the Functional button on the panel) or read the pulses / rotations of the meter with the universal scanning head.

Register error measurement

The value of energy is preset in this mode. The measurement is started and stopped by the operator using the Manual or Functional button. The error of the register is indicated in [%].

Harmonics

The harmonic content of each input signal of voltage or current can be measured in this mode. The amplitude in [%] of the 1st harmonic and the initial phase of the odd harmonics up to the 27th are indicated. The value to expand into harmonics is determined by the operator among the 2 input signals. The measurement and the corresponding screen display are updated in every two seconds.

Oscilloscope

Two signals are drawn on-line on the display. The signals are selected by the operator. Near the waveforms, the true RMS values of the corresponding signal in [V] or [A] are also displayed.

Settings

The last screen is intended for performing settings of some parameters like date, time and frequency of the standard’s constant. From this screen the operator is able to go to Calibration mode or connect to a PC.

Memory

150 electricity meter measurements can be stored in a non-volatile memory, and transferred to a computer via RS 232. The following data are stored: number of electricity meter (alpha-numerically); the current, voltage and power factor values; error of the electricity meter; the transformation ratio, regime. The program in the computer operates under Windows 7 or 8, XP, 2000, Vista and has the following features: printing of report; archive file organization; data search from the archive.

Accessories:

- Voltage Cables – 2 m (2 units)
- PEWM-3C-1 Software
- Manual button
- Optical Scanning Head and Frame
- Instructions Manual
- Transport Case Peli® 1430
- Compensated current clamp 120 A
- Crocodile clips
- Power Supply Cable