

PEWM-3C-*Arm*

Portable Three-phase Working Standard Class 0.05 / 0.1 / 0.2
(Electricity Meter Tester, Current Transformer Tester and Circuit Analyzer)



General Features

- **Current Probes:**
 - 120 A (100 A) Current Clamps (CC), Class 0.2
 - 12 A Direct, Class 0.05 or 0.1
 - 1000 A Current Clamps, Class 0.2
 - 3000 A Flexible Probes, Class 1
 - 2000 A High Voltage Current Probe, Class 2
- **Test Types:**
 - **Analysis of the Site** – on the Primary and the Secondary of the Current Transformer (CT);
 - **Meter Error Tests** – on Primary and Sec. Side;
 - **Current Transformer Test** – CT Ratio Error;
 - **Burden Test** – of CT or Voltage Transformer;
 - **Meter Register Test (Option – use IR Head)**
 - **Maximum Demand Test.**
- **Energy Types:** Wh, varh, VAh
- **Circuit Types:** 4W Wye, 3W Delta, 2W Single
- **Pulses Pickup:** Universal Scanning Head - 3D Holder; Manual Button; Pickup for LEDs; Box "SO / KYZ".
- **Memory: 500 (1000) Files saved in Flash Memory;**
A File contains all the Tests performed on one Site.
- **PEWM Software, MySQL Data Base, Excel Report.**

Advantages

- Large 7" LCD Display, visible at direct sun;
- **New Option: 7" Display with touch screen;**
- The Parameters for each Test are on the same screen and can easily be changed;
- Choose the Meter Type – a predefined List;
- Automatic calculation of Number of Pulses for Meter Error Tests, depending on the pre-set "Time" for the test duration;
- Statistical Measurements (Max. 5 repeats);
- **Ratio Ku and Ki** – view primary Volts/Amps;
- Calculation of Average Meter Error and Standard Deviation;
- Automatic Test of all three CTs, without moving the Primary & Secondary Probes;
- **Warning Messages** from On-Board Consultant;
- Easy Save of all performed Tests in one File, plus all Parameters, Date/Time, Meter ID;
- **View all Saved Files** on the Screen;
- Transfer Saved Files to a PC via **USB Type C;**
- Print on a **Thermal Printer via Bluetooth;**
- Broken Clamp - easily replaced & adjusted.

Technical Data

Power supply auxiliary	230 Vac +15%, -25%
Power supply L1 of the meas. circuit	45 ... 480 Vac, (45 ... 65 Hz)
Option - Battery Supply (Protected)	4 x 3.7 V, 4 Wh
Power consumption	max 20 VA
Dimensions	230 x 140 x 85 mm
Weight	1.7 kg (2.3 kg with Battery)
Housing	Hard plastic with protection
Operation temperature	-15 °C ... +50 °C
Relative humidity	< 95% non-condensing
Pulse output:(isolated BNC and LED)	50 000 imp/kWh(kVarh) – default
Programmable	Output: 5V, Pulses: > 10 μs.
Pulse inputs: Scanning Head,	Input level: 4 V ...12 V,
Manual Button, Functional Button	Max. Frequency: 200 kHz
Color 7" LCD for direct sunlight	1024 x 600 pixels, CR = 800
Degree of protection	IP 40 (IP65- Peli case closed)
Temperature coefficient (0 ... 40°C)	0.005 % / K
Drift / year for U & I (direct)	< 0.03 % / year
Measurement Stability	< 0.02 %
Dimensions of 120A CC (Jaw 16 mm)	131 x 46 x 34 mm / 250 g
Dimensions of 100 A CC (Jaw 10mm)	130 x 37 x 25 mm / 180 g
Dimensions 1000 A CC (Jaw 52mm)	205 x 100 x 30 mm / 550 g
Dimensions 3000 A Flexible Probes	Ø 190 mm, Length 600 mm
Current range of 12 A direct	0.001 A ... 12.0 A
Current range of 100 A (120 A) CC	0.01 A ... 100.0 (120.0) A
Current range of 1000 A CC	1.00 A ... 1000.0 A
Current range Flex 3000 / 800 / 200 A	3.00 A ... 3000.0 A

SAFETY TESTS: IEC 61010-1; IEC 61010-2-032; 300 V, Cat III
 EMC TESTS: IEC 61000-4-2, IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-6
 FUNCTIONALITY: IEC 60736, IEC 62052-11, IEC 62053-11, -21, -22, -23

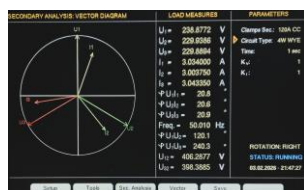
Measurement Errors

	ERROR	RANGE
Voltage Phase-Neutral	± 0.05 %	40.00 V ... 300.00 V
	± 0.20 %	5.00 V ... 40.00 V
Current (Direct)	± 0.05 %	0.020 A ... 12.00 A
	± 0.10 %	0.010 A ... 0.020 A
	± 0.10 % **	0.001 A ... 0.010 A
Current 120 A CC (Jaw 16)	± 0.20 %	0.100 A ... 120.0 A
Current 100 A CC (Jaw 10)	± 0.20 %	0.050 A ... 100.0 A
Current 1000 A CC	± 0.20 %	5.000 A ... 1000.0 A
Current 2000 A HV Probe	± 0.10 % + E _s	20.00 A ... 2000.0 A
Current 3000 A Flex Probe	± 1.00 %	10.00 A ... 3000.0 A
Power / Energy (Direct Class 0.05)	± 0.05 %	0.020 A ... 12.00 A
	± 0.05 % **	0.001 A ... 0.020 A
Power/Energy (Direct Class 0.1)	± 0.10 %	0.050 A ... 12.00 A
	± 0.10 % **	0.005 A ... 0.050 A
Power/Energy (CC Jaw 16)	± 0.20 %	0.100 A ... 120.0 A
	± 0.20 % **	0.010 A ... 0.100 A
Power/Energy (CC Jaw 10)	± 0.20 %	0.100 A ... 100.00 A
Power/Energy (1000 A CC)	± 0.20 %	5.000 A ... 1000.0 A
Power/Energy (Flex)	± 1.00 %	20.000 A...3000.0 A
Phase Angle (Dir. & CC)	± 0.10 °	0.00° ... 359.99°
Frequency	± 0.01 Hz	40.00 Hz ... 70.00 Hz
Power Factor	± 0.002	-1.000 ... +1.000
CT Burden - Usec	± 0.50 %	0.100 V ... 10.00 V

Notes: 1. The power / energy errors are related to apparent power (to be divided by the power factor for active and reactive energy).
 2. E_s is the error of the sensor, specified by the manufacturer.
 3. ** Error related to the maximum value of the Range.

Analysis Screens

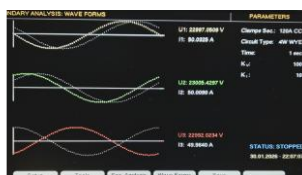
Vector Diagram



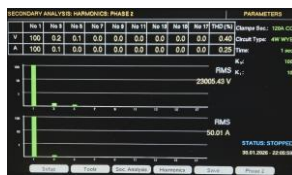
Table

Ph. 1	Ph. 2	Ph. 3	Σ
Volts	238.8801	238.8452	238.8887
Amperes	1.044000	1.044000	1.044000
PF	0.9991	0.9991	0.9991
Watt	0.2379	0.2379	0.2379
kVar	0.2387	0.2387	0.2387
kVA	0.2388	0.2388	0.2388
Hz	50.00	50.00	50.00
THD	0.00	0.00	0.00
THD	0.00	0.00	0.00

Wave Forms



Harmonic Analysis



NEW: Key-pad on the 7" Touch Screen Display

Meter Error Test

METER ERROR SECONDARY	LOAD MEASURES	PARAMETERS
STATUS: FINISHED	U ₁ = 9997.5957 V	Clamps Sec: 120A CC
PROGRESS: 0%	U ₂ = 9997.4629 V	Pulses
	U ₃ = 9997.2881 V	Constant
ERR AVG: -0.007 %	I ₁ = 30.0055 A	Pulses/kWh
	I ₂ = 30.0285 A	CT Ratio
	I ₃ = 30.0235 A	Circuit
	Φ U ₁ I ₁ = 20.1	Trigger
	Φ U ₂ I ₂ = 20.2	Wh
	Φ U ₃ I ₃ = 20.2	Pick-up
	Freq. 49.980 Hz	Meter
ERR 1: -0.008 %	Φ U ₁ U ₂ = 119.9	Statistics
ERR 2: -0.006 %	Φ U ₁ U ₃ = 240.1	Time
ERR 3: -0.006 %	U ₁₂ = 173.1299 V	K _v
ERR 4:	U ₁₃ = 173.2590 V	K _i
ERR 5:		
ST. DEV.: 0.001 %		

CT Ratio Test

CT RATIO TEST	Ph. 1	Ph. 2	Ph. 3	PARAMETERS
Amperes Prim.[A]	50.033	50.086	49.785	Clamps P: 800A Flex
Amperes Sec.[A]	5.0036	5.0118	4.9837	Clamps Sec: 120A CC
Meas. Ratio	49.99 : 5	49.97 : 5	49.92 : 5	Circuit Type: 4W WYE
Angle [°]	359.72	180.03	0.47	CT Ratio: 80:5
Ratio Error [%]	0.00	0.06	0.14	