

Huazheng®

HZ-1011P
3 Phase Electrical Energy Meter
Calibration Kit



Huazheng Electric Manufacturing (Baoding) Co., Ltd

Dear user:

Thank you for choosing HZ-1011P Three-phase Electric Energy Meter Field Calibrator.

We hope that this instrument can make your work easier and more enjoyable, so that you can get the feeling of office automation in the test and analysis work.

Before using the instrument, please read this manual, and operate and maintain the instrument according to the manual to prolong its service life.

"Just a light press, the test will be completed automatically" is the operating characteristics of this instrument.

If you are satisfied with this instrument, please tell your colleagues; if you are not satisfied with this instrument, please call (0312) 6775656 to tell you to serve you at all times-Baoding Huazheng Electric Manufacturing Co., Ltd., our company will definitely make you satisfied !

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I.Overview

Multi-function electric energy meter on-site testing instrument is a high precision testing instrument that can measure electrical parameter and verify electric energy meter and judge on-site wiring. The instrument is equipped with the high precision and high linearity PT and CT ,so it has the high measuring accuracy when testing various electrical parameters. And it is equipped with the clamp-type current transformers . Users don't need to disconnect the current circuit to wire easily with them on site .The instrument uses high-end embedded control panel and dedicated real-time multitasking operating system and 10-inch large-screen color LCD monitor . It uses English graphical operation interface with English prompt information. The man-machine dialogue interface is friendly .It has the functions of vector diagram display and wiring judgment ,which can provide the reliable basis for checking the correctness of the circuit. It uses the capacitive screen touch operation which is good handing feel and easy to learn. It has built-in large-capacity data memory, which can store a maximum of 60,000 groups of data and can be extended indefinitely. Users can upload the history-records to the computer with the U disk and can also use the background management software of the instrument to achieve the computerized management.

The instrument is made of engineering plastic shell designed and moulded independently by our company. The instrument is beautiful in appearance and practical. It is easy to operate while testing on site. When the instrument is operated, its back bracket can be opened. So it can be operated by hand or on the desktop. The instrument is equipped with high strength self-stretching handle. It is convenient for the operator to hold the instrument with one hand.

II.Functions and Features

- 1.The instrument uses high-end embedded control panel and dedicated real-time multitasking operating system and quasi Windows style interface.
2. The instrument is a high-precision testing instrument which can verify Electric

energy meter and measure electrical parameters and test power quality problems such as waveform distortion, voltage fluctuation and three-phase unbalance in power grid.

3. When measuring the comprehensive error of the metering device during real load in-circuit, users don't need the power outages and also don't need to change the metering circuit and to open metering device .

4. It can precisely measure a variety of electrical parameters , such as voltage, current, active power, reactive power, phase angle, power factor, frequency, etc. And then it can calculate the measurement error of the metering device loop.

5. It has a hexagonal diagram display function, which can perform vector analysis of the metering circuit, and check the wrong wiring of the metering device; in the three-phase three-wire connection mode, it can automatically judge 48 wiring methods; the automatic calculation function of the supplementary power is convenient to use. The personnel calculate the supplementary power for users with wiring problems.

6. The instrument is equipped with the clamp-type current transformers . Users don't need to disconnect the current circuit to measure conveniently and safely.

7. It can test various indicating instruments such as voltmeter, ammeter, power meter, phase meter etc. and all kinds of the 1A or 5A active or reactive power electric energy meters of three-phase three-wire or three-phase four-wire or single-phase connection mode.

8. Users can use the photoelectric or manual or pulse mode to test the electricity meters.

9. It can precisely measure the 2-64th voltage harmonic and current harmonic content .

10. It can measure and analyze the quality of the AC power supply via the utility grid to the user, such as frequency deviation ,voltage deviation, voltage fluctuation ,allowable unbalance of three-phase voltage and power grid harmonics.

11. It can display single-phase voltage and current waveform and can display

three-phase voltage and current waveform at the same time.

12. Load fluctuation monitoring: measure and analyze the fluctuation of power quality of public grid caused by various electrical equipment under different operating states. Record and store voltage, current, active power, reactive power, apparent power, frequency, phase and other power parameters.

13. Bar code scanner can be selected to automatically input the bar code of electrical energy meter.

14. The 485 communication interface of the electric energy meter can be detected, and can complete the work of on-site verification of multi-functional (intelligent) electric energy meter. The error of demand can be verified according to the set demand cycle and slip time in the electric energy meter.

15. It has the function of perpetual calendar clock to display the date and time.

16. 60000 test data and results can be saved at the same time of on-site verification (single deletion or all deletion can be selected), and uploaded to the computer with the U disk. Computerized management can be achieved through the background management software (optional).

17. The instrument uses the large-screen and touch-screen color LCD monitor, the English graphical operation interface with English prompt information and multi parameter display interface. The man-machine dialogue interface is friendly.

18. Capacitive touch screen, high touch sensitivity and easy operation.

19. Optional virtual load can be used to verify the electric energy meters on site without load.

20. Small size, light weight and easy to carry. It can be used not only for field measurement, but also as standard measuring equipment in the laboratory.

III. Technical Specifications

1. Input properties

Voltage measurement range:

0 ~ 400V, 57.7V, 100V, 220V, 400V four automatic switching range.

Current measurement range:

0 ~ 5A. The built-in current transformers is 5A (CT).

The clamp transformer has six tap position:

small clamp(5A/25A).

middle clamp (100A /500A) (optional).

large clamp (400A/2000A).(optional).

Phase angle measurement range: 0 ~ 359.999 °.

Frequency measurement range: 45 ~ 55Hz.

2. Accuracy

Measurement verification part:

Voltage: $\pm 0.05\%$

Current: $\pm 0.05\%$ (clamp transformer $\pm 0.2\%$)

Active power: $\pm 0.05\%$ (clamp transformer $\pm 0.2\%$)

Reactive power: $\pm 0.2\%$ (clamp transformer $\pm 0.5\%$)

Active electric energy: $\pm 0.05\%$ (clamp transformer $\pm 0.2\%$)

Reactive electric energy: $\pm 0.2\%$ (clamp transformer $\pm 0.5\%$)

Frequency: $\pm 0.05\%$

Phase: ± 0.2 °

3. Power quality

Harmonic frequency measurement range: 2-64

Fundamental voltage and current amplitude: allowable error of fundamental voltage $\leq 0.5\%$ F.S; Allowable error of fundamental current $\leq 1\%$ F.S

Measurement error of phase difference between fundamental voltage and current:

≤ 0.5 °

Measurement error of harmonic voltage content: $\leq 0.1\%$

Measurement error of harmonic current content: $\leq 0.2\%$

Three phase voltage unbalance error: $\leq 0.2\%$

4. Operating temperature

Operating temperature: - 10 °C ~ + 40 °C

5. Insulation

1) The insulation resistance between the voltage, current input terminal and the housing $\geq 100M\Omega$.

2) Withstand 1.5KV (valid value) with power frequency on operating power input and the shell, which lasts one minute.

6. Standard electric energy pulse constant

built-in transformer constant (FL) = 10000 r / kW · h

clamp transformer constant (FL):

5A	25A	100A	500A	400A	2000A
10000r/kW·h	2000r/kW·h	500r/kW·h	100r/kW·h	125 r/kW·h	25r/kW·h

7. Weight

Weight: 2kg

8. Size

Size: 28cm × 21cm × 6cm

IV. Attention

1. If the high requirements for the measurement accuracy, it is best to use internal transformer. When connecting the current transformer, it must be strictly ensured that the secondary side of the current transformer is not open circuit.

2. Clamp transformer is a high-precision measuring transformer. It must be handled with care to avoid collision and damage, otherwise it will affect the test accuracy. The cut surface of the clamp shall be kept clean and bright, and shall not pollute other sundries, so as to ensure that the clamp is closed well.

3. Please input the correct setting parameters before the test, otherwise it may cause deviation or error of data results.

4. When clamping the aluminum bar of the primary side with the clamp, do not let the cut iron core of the clamp touch the aluminum bar, otherwise there may be danger and damage the clamp and instrument.