Huazheng®

HZDZ-P3
Power Quality Analyser

Huazheng Electric Manufacturing (Baoding) Co., Ltd

Dear user:

Thank you for choosing HZDZ-P3 Power Quality Analyser.

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

Power quality refers to the quality of the AC power supply via the utility grid to the user, which normally means the good or bad situation of the electric energy in transmission line. Power quality problems are mainly caused by the load side of the terminal. For example, impact reactive load will lead to serious fluctuates to power network voltage, and decrease the quality of power supply.

With the development of power electronics technology, on one hand, it brought positive side to the modern industrial energy efficiency and energy conversion. On the other hand, while the power electronic devices are widely used in all walks of life, it also has brought new and more serious damage to the power quality, and has become the main source of harmonic in grid.

The increasing use of rectifiers, frequency control devices, electric arc furnaces, electric railway and a variety of power electronic devices in each distribution system, impact the electricity network or called power pollution. It causes voltage instability, over-voltage, generates harmonics and so on. Harmonic makes efficiency of electricity production, transmission and utilization reduce, so that the electrical equipment will be overheat, vibration and making noise, and insulation aging, shortened life expectancy, and even failure or burned. Harmonics can also cause localized power system an occurrence or series resonant parallel resonance, so that the harmonic content is amplified, resulting in capacitors and other equipment destroyed.

Electrical properties of non-linear, impact resistance and unbalanced of these kind of load, causes serious pollution to the quality of power supply. Thus, eliminating the higher harmonic problem in supply and distribution system has a very positive meaning in improving the power quality issues and ensuring power system security, stability and economic operation.

On the other hand, electrical equipments in modern industrial, commercial and residential users are more sensitive to power quality, and have a higher requirement of quality of power supply. Currently, harmonics, electromagnetic

interference, power factor reduction have been tied to the three hazard of the power system.

When it is interfered or contaminated, grid power quality can't reach the national standards, so it has to be targeted on the grid power quality improvement. To understand the actual situation of power quality, you must have the appropriate equipment to test and analysis the actual situation. Counter the domestic condition, our company developed the professional power quality analysis instrument, which is suitable for the country.

II.Functions and Features

1. Multi-channel testing: Simultaneous measurement of 4 voltage channels and 4 current channels.

2. Electrical parameter measurement: It can measure a variety of electrical parameters at the same time, such as voltage, current, active power, reactive power, phase angle, power factor, frequency, etc.

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

4. It can measure the 0.5-31.5 Inter-harmonic content of voltage and current

5. It can measure the total harmonic distortion rate of voltage and current

6. Can measure and short-term flicker (Pst), long-term flicker (Plt), voltage fluctuation

7. It can measure positive sequence voltage, negative sequence voltage, zero sequence voltage, voltage unbalance

8. It can measure positive sequence current, negative sequence current, zero sequence current, current unbalance

9. It has the function of measuring transient parameters and the function of recording voltage swells and drops. At the same time, the recording function is automatically started to record the occurrence time of the event and the actual waveforms of the five cycles before and after the occurrence.

10. It has an oscilloscope function, which can display the size and distortion of voltage and current in real-time waveforms, and can zoom in and out of the

voltage and current waveforms on the instrument

11. It has a hexagonal diagram display function, which can perform vector analysis of the metering circuit and the protection device 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.

12. Optional large clamp can be used to measure the transformation ratio and angle difference of low-voltage current transformers

13. Harmonic content can be displayed in the form of a histogram, with good visual effects

14. It has built-in large-capacity data memory, (storage interval 1 second-1000 minutes optional) can store data continuously for more than 18 months at a time interval of 1 minute

15. 10-inch large-screen color LCD monitor 1280×800

16. Capacitive screen touch operation is similar to that of tablet PC and smart phone, easy to learn

17. Support mouse operation, adapt to operators with different habits

18. During harmonic measurement, it can automatically judge whether the harmonic content of each order exceeds the standard according to the national standard and give a prompt, which is clear at a glance

19. It has a national standard query function for harmonic content rate, which can query the allowable value of the national standard

20. It has a frequency measurement range of 42.5Hz-69Hz, capable of measuring 50, 60 power systems

21. Data can be stored in U disk for historical query.

22. It can be equipped with dedicated data analysis and management software to analyze and process the test results, and can grasp the power quality and load periodic changes of the measured point. This is irreplaceable for the power

workers to understand the user's power quality and take corresponding processing measures effect

23. The analysis software can generate professional power quality analysis reports in accordance with the requirements of the national standard

24. The instrument has a screen capture function, and the displayed data on any screen can be manually saved in the form of pictures

25. The instrument is small in size, light in weight and easy to carry

26. It has a built-in high-performance lithium-ion battery and automatically enters the power-saving mode, allowing the instrument to work continuously for more than 10 hours without an external power supply, which is convenient for on-site testing

III. Technical Specifications

Project		Data
Number of measurement channels		Four voltage channels, four current channels
Measuring range	Voltage	0-900V
	Current	Small clamp:diameter 8mm，5A/25A(standard) Medium clamp:diameter 50mm，100A/500A(Optional) Large clamp:diameter 125×50mm，400A/2000A(Optional)
	Phase angle	0.000－359.999°
	Frequency	42.5－69Hz
Measuring step	Voltage	0.001V
	Current	0.0001A
	Phase angle	0.001°
	Power	active power 0.01W、reactive power 0.01Var
	Frequency	0.0001Hz
Voltage measurement accuracy		≤0.1%
Current measurement accuracy		≤0.3%
Phase angle measurement accuracy		≤0.1°
Power measurement accuracy		≤0.5%
Frequency measurement accuracy		≤0.01Hz
Harmonic analysis times		2－64 times
Harmonic voltage measurement error		Harmonic content＞1% Nominal value：≤1% RD Harmonic content＜1% Nominal value：≤0.05%FS
Harmonic current measurement error		Harmonic content＞3% Nominal value：≤1% RD Harmonic content＜3% Nominal value：≤0.05%FS

Three phase voltage unbalance error	≤0.2%
Three phase current unbalance error	≤0.5%
Voltage fluctuation accuracy	5%
PST measurement time	10min
PLT measurement time	2h
PST/PLT measurement error	≤5%
Screen	1280×800、True color LCD
Charging Power	AC220V±15% Frequency 45Hz-65Hz
Standby timing	≥10h
Host Power	＜4VA
Insulation	1) The insulation resistance between the voltage, current input terminal and the housing ≤100MΩ. 2) Withstand 1.5KV (valid value) with power frequency on operating power input and the shell, which lasts one minute.
Working temperature	-20℃～50℃
Relative humidity	0-95% No condensation
Size	280mm×210mm×58mm（L×W×H）
Weight	2kg

IV.Attention

1. Do not touch the metal parts of the test line during measurement process to avoid electrical injury.

2. Measurement wiring must operate in strict accordance with the instructions to ensure personal safety.

3. Better use of power outlet with ground.

4. Do not work in the case of excess voltage and current limits.

5. Each clamp must be accordance with the corresponding socket on the panel, otherwise it will affect the test results.

6. You must follow the principles of accessing the instrument before the device under test when connecting to the instrument, and the principles of removing the device under test before the instrument when splitting the instrument for voltage line and clamp.

7. Pay attention that you must turn off the power supply switch whenever testing is finished, because sometimes the LCD