

HTDN-3I Energy Meter Calibrator



I. Introduction

HTDN-3I three-phase electric energy meter calibrator is the newest product. The measured part of the product adopts high speed A/D transmission to send DSP to conduct digital processing, which greatly improves measurement accuracy and stability. Central processing part adopts 32-bit ARM embedded technology to make instrument interface novel, function abundant, operation distinct and easy, and performance steady. Class of accuracy: Class.0.05

II.Features

1. Adopted 7" 800 x 480 true color TFT light LCD. On the screen show all measurement parameters, vector diagram, degree of harmonic distortion and parameter setting. Need not change interface to check the electric energy meter error.
2. Operate using touch screen or buttons, conveniently and quickly.
3. Voltage, current, power, phase and frequency can be measured at the same time and calibrate error; besides, voltage and current (1A, 5A) can automatically change gears.
4. Actual loading calibration of watt-hour meters with three-phase four-wire, three-phase three-wire and various watt-hour meters (Q90, Q60);
5. Provided with fundamental harmonic measurement mode to realize calibration of fundamental meter;
6. Provided with two electric energy pulse input ports, which can calibrate two meters (main and auxiliary meters), or active, reactive errors of a multi-function meter at the same time, also can calibrate active meter and reactive meter;
7. Output electric energy constant can be set for convenience of calibrating the instrument.
8. The function of error rounding is provided, it can automatically rounding error according the accuracy class of the calibrated electric energy meter.
9. Measure CT ratio, ratio error, angle error and polarity;
10. Ambient temperature and humidity can be measured. And record the temperature and humidity when test.
11. 0~51 times of harmonics can be analyzed. And harmonic content, amplitude and relative fundamental phase can be measured every time, which are shown in column diagram with amplification function convenient for observation and analysis.

12. Display waveform and have amplification function.
13. Users can, according to demand, select clamp meter with 5A, 10A, 100A, 200A, 500A, 1000A, 2000A current span or flexible coil mutual inductor to realize actual loading measurement of composite error of low voltage electric energy metering device. 3 sorts of clamp meters can be provided at the same time.
14. Current switching mode can be automatically identified and user doesn't need to set.
15. Electric energy accumulative function is available. Electric energy meter on-site counter test, register error and calibration constant can be executed.
16. Display a wide range of vector diagram to meet habits of various users.
17. On-site rapid discrimination from three-phase three-wire and three-phase four-wire false wiring can be realized and corrective steps are given. Corrective coefficient and electric quantity compensation can be calculated in the condition of false wiring.
18. Support bar code input, thereby, field may realize exemption from inputting calibration parameter to rapidly calibrate error. (matched by users' choice)
19. Support digital input, letters input, symbols input and Chinese characters input.
20. Have storage and uploading function of all kinds of measurement data and support RS232, USB communication. Measurement data can be exported and imported through USB flash disk. Calibration plan downloaded by PC machine may also be accepted to rapidly find out calibration parameter shown on the meter in the field by a number of conditions (asset number, user ID and user name). Measurement data from 1000 meters can be stored.
21. Equipped with hard clock directly displaying the current time and data;
22. Have RS-485 interface which can read electric quantity on site and conduct communication and inspection of electric energy meter.
23. Extended measurement: PT secondary voltage drop, PT secondary load, CT secondary load.
24. GPS interface is reserved, which can conduct timing and time service for multi-function meter.
25. Operating range of power supply: 45~450V, there are two modes of connection--inscribe and circumscribed, strong adaptability, safe and reliable. .

III. Parameters

1. Accuracy of voltage, current, active power and active electric energy (built-in current transformer): 0.05.
2. Accuracy of reactive power and reactive electric energy: 0.1.
3. Voltage input: 30V~560V, 60V, 120V, 240V, 480V four gears, automatic gear shift.
4. Current input: built-in current transformer: 0.02~6A, automatic gear shift.
Clamp meter: 5A, 10A, 20A, 100A, 200A, 500A, 1000A and 2000A for selection.
Flexible coil (Iokovski coil): 5000A, 10000A.
5. Fundamental Error

Load Current	Power Factor	Margin of Fundamental Error (%)
0.05I _b	1.0	±0.1
0.01I _b ~I _{max}	1.0	±0.05
0.1I _b	0.5 (L) ;0.8 (C)	±0.15
0.2I _b	0.5 (L) ;0.8 (C)	±0.075
0.5I _b ~ I _{max}	0.5 (L) ;0.8 (C)	±0.05

6. Phase measurement range: 0.000°~360° (or 0.000°~±180°) , Resolution: 0.001°. Accuracy: ±0.05° (current input>10%I_b)

7. Frequency measurement: resolution: 0.001Hz, Accuracy: ± 0.01 Hz.
8. Input electric energy pulse: TTL level, max. frequency ≤ 2 MHz.
9. Output electric energy pulse: rated range $f=60$ KHz as automatic constant. It can be set between 1 \sim 250000 as hand constant.
10. Temperature coefficient: 5ppm.
11. Low voltage input impedance: >750 K Ω ;
12. Current input impedance: <0.05 Ω ;
13. Input signal frequency: 45 \sim 65Hz;
14. Accuracy for PT secondary voltage drop (90% \sim 110% U_n): angle error 0.2'; ratio error 0.02%;
15. Accuracy for PT, CT secondary load measurement: 1.0
Measurement range: admittance: 1.0 \sim 99.99 (ms) ;
Impedance: 0.1 \sim 8 (Ω) ;
16. Accuracy for clock measurement: ± 0.5 ppm; 0.05s/d;
17. Power supply: frequency 50Hz, range 45 \sim 450V;
18. Power consumption: ≤ 11 VA;
19. Service condition, temperature: -10 $^{\circ}$ C \sim 40 $^{\circ}$ C, humidity: 30 \sim 80%RH;
20. Dimension: 365mm L \times 269mm W \times 151mm H;
21. Net weight: 1.8Kg.