Huazheng®

HZ-8600
Phasing Unit

Huazheng Electric Manufacturing (Baoding) Co., Ltd

Warning

The instrument design, manufacturing and testing met the IEC61010 safety standards (electronic measuring product safety requirements), the manual includes ensure safety use of equipment and ensure instrument safety state, the user must abide by the warning and safety regulations.Please read the following instructions before use.

Warning

● please carefully read and understand the instruction manual before the use of the instrument.

● Whenever you must comply with the manual requirements, and keep the manual, so that at any time to serve as a reference.

● The instrument for testing time, wrong operation will cause accident and instrument damage.

Contents

I.Products Introduction

HZ-8600 Phasing Unit,for MV overhead distribution circuit,used for detection of high-voltage power grid closing point on both sides of the phase sequence is the same. Two power line connection before must check phase sequence, or line may be short circuit. The instrument suitable for36KV power transmission line, and can test whether line charged. The Instrument adopts the wireless transmission technology, safe and reliable operation, easy to use.

II.Working Principle

The instrument consists of two transmitters (x and y) and a receiver. Two emitters can be judged whether line charged, and launch phase signal. Receiving meter receives two emitters' signal, to judge whether the same on both sides phase sequence.

III.Security Matters

1. Insulating rod before using should be voltage withstand test.
2. The standard configuration insulating rod length is 3 m, corresponding voltage for ≤ 220 KV. If the measurement circuit voltage higher than 220KV, please use the length of more than 3 meters of the insulating rod.
3. Operation hand position not more than insulating rod handle position.

IV.Technical Characteristic

1. Accuracy:When phase sequence is same: the error≤ 5 °.
2. The frequency accuracy：±0.1HZ.
3. Measuring voltage range is 36KV .
4. The transmitter and the receiving host transmission distance is more than 130 meters, the maximum distance between the two transmitters is about 260 meters.
5. Results (in phase, interphase) using A standard, phase difference acuity ≥30 ° for out phase, the phase difference < 30 ° are in phase.
6. Screen shows two lines at the same time of phase difference, frequency, waveform and the vector diagram.
7. The host shows battery, half an hour without automatic shutdown operation.

8. Two emitter and receiver use rechargeable lithium battery.
9. Have high pressure test report and the function of the phase sequence.
10. High pressure when measuring the leakage current < 10 uA.
11. Transmitter power consumption < 0.1 W, receiving host work power consumption < 0.3 W.
12. Host lithium battery capacity is about 2200 mAH, transmitter battery capacity is about 350 mAH.

14.Working environment: temperature - 35 ℃ ----- + 45 ℃ ; humidity ≤ 95% RH.

15.Storage conditions: temperature - 40 ℃ ------ + 55 ℃ ; humidity ≤95% RH.

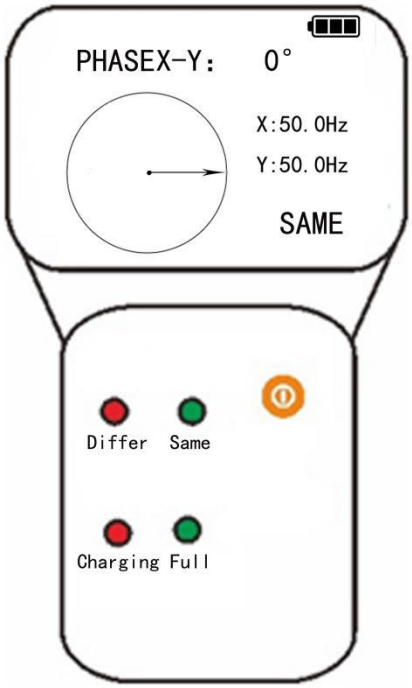
16.The weight：about 5 KG.

17.Instrument package size: 71 cm long * wide 26 cmm * 11 cm high.

V. Introduction Of Instrument

（1）Introduction of instrument appearance

（2）Introduction of instrument operation



（Receiver）

Lamp:

(a) “Different” light: two line phase sequence is different.

(b) “Same” light: two line phase sequence is same.

(c) “Charging” light: Battery is charging.

(d) “Full” light: Battery is fully charged.

Key:

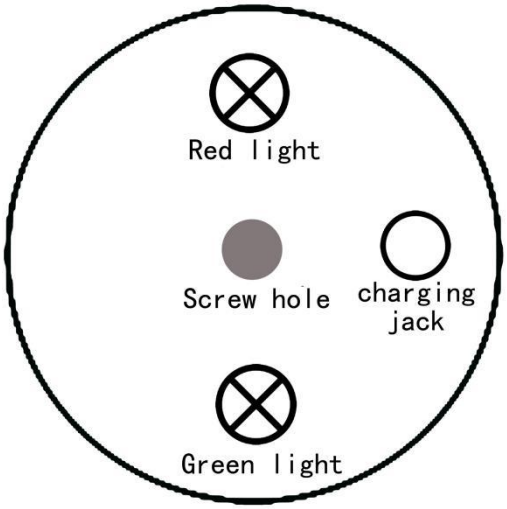
(1) long pressing to switch on up or shut down.

(2) Short press the close distance measurement and distance measurement switching.

Supplement:

1)Top right corner have power indicator.

2)The bottom jack is charging interface.



Emitter bottom

Lamp:

Testing: Two lights kept flashing.

Charging: fog lamp is red.

Charging complete: fog lamp is green.

Buzzer:

Exposure to high voltage electric lines the buzzer rang 2 seconds, said the line charged.

Install screw hole:

To connect with Telescopic insulating rod.

Charging jack:

To connect with the charger.

(3) The instrument examination method:

Method 1: using the configuration of the emitter mains special test line reference figure (1) connection, 220 v mains plug. If the emitter buzzer, two light is flashing, receiving host shows the frequency of the corresponding information, the transmitter and the host are normal.

Figure (1)

Method 2: the emitter hooked up to the corresponding voltage grade of electric circuit inspection (as shown in figure 2) or use the high pressure test equipment, simulation of high voltage line for inspection instruments (as shown in figure 3). If the emitter buzzer, two light is flashing, receiving host shows the frequency of the corresponding information, the transmitter and the host are normal.

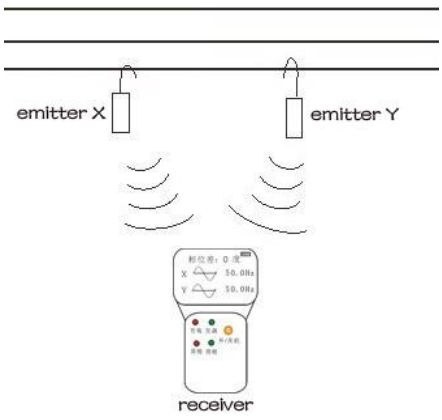


Figure (2)

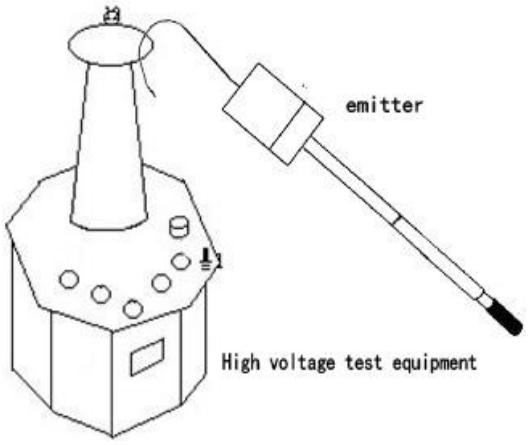


Figure (3)

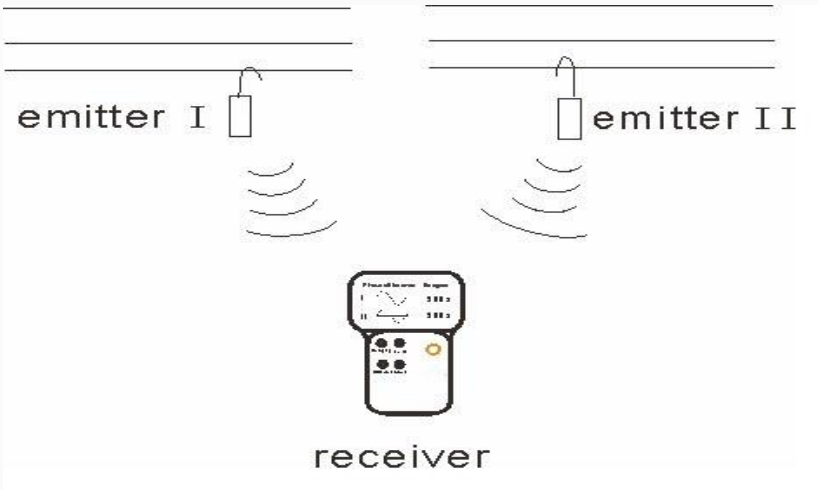
Tip: 1) transmitter direct contact with high pressure, apparatus started about 4 kv voltage.

2) use

VI. The Nuclear Phase Operation

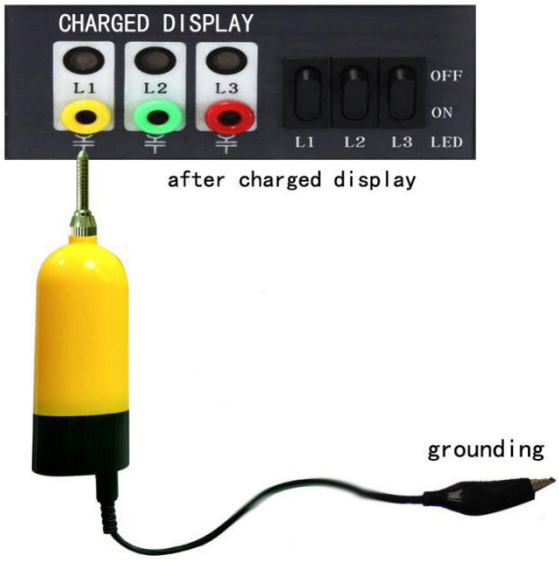
(1) High-pressure nuclear

Will be hooked up to two live line, X, Y launcher, watch the receiving host measurements (according to the national grid, nuclear grade A standard). More than 30 degrees are heterogeneous, "heterogeneous" indicator, voice prompt "phase-out please note" at the same time; Less than 30 degrees are in phase, "in phase" indicator, the voice prompt "in phase" at the same time. Operation schematic diagram is as follows:



(2) Switchgear nuclear phase induction electric point

Wiring methods as follows in figure 4, as a result, check method and high-pressure nuclear phase is the same



Supplement: 1) if the test voltage is 220 v / 380 v, please use the special test of grid lines (internal resistance test line, the straight wire) connected to the transmitter, measure again;

2)1 kv ~ 10 kv line, if the external insulation layer thicker and transmitters can start. Can unscrew the cover on the transmitter, switch on the emitter, the measurement again. Remember to switch off transmitter when measuring is finished.

The voltage level instructions：

The voltage level instructions	Instructions	Added
500KV	Launcher insulating rod (5 meters), the hook on the high tension line directly, host boot.	Conventional
330KV	Launcher insulating rod (4 meters), the hook on the high tension line directly, host boot.	Conventional
220KV	Launcher insulating rod (3 m), direct hook on the high tension line, the host boot.	Conventional
110KV	Auncher insulating rod (3 m), direct hook on the high tension line, the host boot	Conventional
35KV	Launcher insulating rod (3 m), direct hook on the high tension line, the host boot.	Conventional
10KV(bare wire)	Launcher insulating rod (3 m), direct hook on the high tension line, the host boot.	Conventional

380V/220V	Use the special test line of mains connection launcher (as shown in figure 1), the host boot.	Use the special test line of mains
Switchgear induction electric (~ 5 V)	Use switchgear induction electric test line connection transmitter (see switchgear induction electric measuring point) host boot	Use switchgear induction electric test line.

VII.The Test Results Analysis

Phase difference value (f)	The phase difference is stable	Results the judgment	Added
0～5	Stable	In phase	Two lines with the frequency, Such as voltage.
115～125 or235～245	stable	phase-out	Two lines with the frequency, Such as voltage.
0～360	Is not stable, 0 ~ 360 degrees cycle changes	Two line frequency is not the same	Not parallel.
The value near 0、120、240	Stable	Two line voltage is not the same.	Two lines the same frequency, voltage, Not parallel.

VIII.Instruments To Check

Check the project	Check the method	Normal phenomenon	Abnormal phenomenon	Exception handling
Insulating rod pressure	Check pressure performance reference appendix A	Leakage current is less than 10 uA	Leakage current is greater than 10 uA	Replace the insulation rod
Transmitter power	Unscrew the cap, dial up the transmitter switch to open position.	Buzzer rang 2 seconds, the indicator light flashing in 1 and 2.	The buzzer rang, or example, said the battery is low.	The transmitter switch, connect a charger. After full charge indicator for the green light.
The emitter function	Use the special test line of mains connection (see figure 1), the mains. The receiving host boot.	Buzzer rang 2 seconds, the indicator light flashing in 1 and 2. The receiving host display corresponding to the frequency of the transmitter.	In power under normal conditions, the light is not flashing, host according to the corresponding frequency of 0 .	Transmitter failure, returned to the factory maintenance.
The host battery	The host boot	The battery capacity is greater than 1	Shows the battery is too low, the host automatically power off.	After connect charger, full of for the green light .
The host	Host machine,	The host shows	Host shows the	Return to factory

wireless communications	emitter accept electric work normally.	the frequency of the corresponding normal information.	frequency of the corresponding to zero.	maintenance.

IX.Maintenance

1. When not in use for a long time, please full of electric after storage.

2. This product should not be stored in damp, high temperature, dusty environment.

3. Insulating rod first before use should do voltage withstand test, and every year a voltage withstand test.

X.After-sales Service

1. The instrument since sold within one month of the date, if quality problems, by the company free replacement new instrument.
2. The instrument within one year quality problems, by the company free repair.
3. The instrument use more than a year, the company is responsible for the long-term maintenance, appropriate charge materials.
4. If the instrument malfunction, should be sent back to the company repair, are not allowed to find their own apart instrument, cause otherwise from damage the company is not responsible for.

XI.Appendix A

Insulating Rod Parameters Added

Insulation telescopic pole (material) and the use of these enterprises production dampproof insulating tube, conform to the IEC / 1 c78 standard has moisture-proof, high pressure resistance, impact resistance, bending, etc, the material characteristics, see the table below.

Table 1 insulating rod mechanical and electrical characteristics

Project	Unit	Indicators
Martin heat resistance	℃	>200
Shock (longitudinal)	MPa/cm	>147
Bending degrees (vertical)	MPa	>343
Surface resistivity	Ω	$>10x10^{11}$
Volume resistivity	Ω/cm	$>10x10^{31}$

Table 2 insulating rod pressure test parameters

Voltage (kV)	The length of the (m)	Power frequency withstand voltage (kV)		Time (min)	The results of
		Standard values	The test results		
6-10	1.5	44	44	1～5	qualified
35	2.4	80	80	1～5	qualified
66~110	2.8	254	254	1～5	qualified
220	3.0	300	300	1～5	qualified

Products comply with national, GB311.1 GB13398-92-311.6-8, 3 dl408-91 standard and the new issued power industry standard "live working with 1 kv ~ 110 kv portable nuclear instrument DL/T971-2005 general technical conditions" requirement.

XII.Packing List

No.	Item	Qty
1	The receiving host	1
2	Power line	2
3	Test line	4
4	Emitter（X Y emitter each one）	2
5	Telescopic insulating rod（3m）	2
6	Pointed terminal	2

7	Charger	2
8		
9		

Description: Tip terminal replacement transmitter head hook. When it is suitable for field operation more than hook, please replace the hook with it after the operation.