

HZ1452 SF6 Gas Trace Moisture Analyzer



Dear user:

Thank you for choosing HZ1452 SF6 Gas Trace Moisture Analyzer.

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

HZ1452 **SF6 Gas Trace Moisture Tester** is an intelligent measuring instrument independently developed by our company. This product is developed and designed according to the national power industry standard DL/T506-2007 《Measurement method of insulating gas humidity in sulfur hexafluoride electrical equipment》, using the original imported high-precision dew point transmitter and advanced digital circuit control technology.

The instrument adopts intelligent self calibration technology, bright color display (touch screen), high precision, fast response, free switching of multiple functions, friendly human-computer interaction interface, real-time display of test data and dynamic display of measurement curve. At the same time, the instrument also has an automatic drying tube, which can shorten the measurement time. The instrument has built-in high-capacity rechargeable lithium battery pack, provides ultra long standby time, and is equipped with standard USB interface to export historical data.

The instrument has the advantages of wide measurement range, fast response time, short measurement cycle, intuitive display and convenient operation. It can be applied to the humidity measurement of air, nitrogen, inert gas and any gas without corrosive medium, especially the humidity measurement of SF6 gas. It can be used by departments such as electric power, petrochemical, metallurgy, environmental protection and research institutes, and has a high cost performance ratio.

II. Technical Features And Parameters

1、 Technical features

- **Portable design:** lighter and more convenient to carry and use
- **Fast measurement:** measure immediately after the instrument calibration, and the humidity value can be quickly obtained

- **Short measurement time and gas saving:** the gas consumption during measurement is only about 2L (101.2kpa)
- **Data storage:** mass storage, up to 100 groups of test data can be stored
- **Comprehensive display items:** the LCD displays dew point value, current temperature micro water value, 20 °C micro water value, ambient temperature, ambient humidity, time and date, battery power, etc
- The humidity value can be automatically converted to the standard value at 20 °C
- **Curve tracking:** real-time data curve tracking, dew point change trend is clear and intuitive
- **USB interface:** historical data can be exported
- **Built in power supply:** built in 6800mAh rechargeable lithium battery, sufficient at one time and can work continuously for 8 hours

2、 Technical parameter

1) Measuring range:

Dew point: $-80^{\circ}\text{C}\sim+20^{\circ}\text{C}$

Micro water content: $0\sim 19999\text{ppm}$

2) Measurement accuracy:

$\pm 2^{\circ}\text{C}$ ($-60^{\circ}\text{C}\sim-50^{\circ}\text{C}$)

$\pm 1^{\circ}\text{C}$ ($-49^{\circ}\text{C}\sim+20^{\circ}\text{C}$)(Scope of work)

4) Resolution ratio:

Dew point: 0.1°C

Micro water content: 1ppm

5) Measuring time: ≤ 3 Minutes/point

6) Sampling flow: $0.6\sim 1.0\text{L}/\text{min}$

7) Display mode: Color touch screen display, full Chinese interface, with backlight

8) Power supply: lithium battery can work continuously for 8 hours with overcharge protection

9) Inspection method: self calibration function after startup

10) Working temperature: $-40^{\circ}\text{C} \sim +80^{\circ}\text{C}$

III. Work Principle

HZ1452 adopts the original imported dew point transmitter as the humidity sensitive element. When the trace moisture of the measured gas enters the sensor sampling chamber, the water vapor is adsorbed into the micropore of the sensor to change its capacitive reactance. The sensor converts this transformation into an electrical signal, which is processed by the microprocessor, and finally sent to the LCD for display.

IV. Method Of Measurement

1、 Connect SF6 equipment

- ① Connect the threaded end of the measuring pipe with the switch connector and tighten it with a wrench;
- ② Then insert one end of the quick connector on the test pipe into the sampling port on the dew point meter- **【 Inlet 】** ;
- ③ Connect the exhaust pipe to the air outlet- **【 Outlet 】** .

2、 Check the power

After power on, please check the battery power displayed in the upper right corner. If the power is only displayed in one grid, please plug in the charger and continue to use it after charging. This instrument supports use during charging.

3、 Start measurement

First, open all needle valves on the measuring pipeline of the instrument, then slowly adjust the flow valve on the instrument panel, adjust the flow to about 0.8l/min, and start measuring the dew point of SF6.

The measurement time of the first equipment takes 5 ~ 10 minutes, and then each equipment takes 3 ~ 5 minutes.

4、 Data storage

After the equipment measurement is completed, the data can be saved in the instrument, and press the "data query" key to call out the operation menu. See the following section for the specific operation mode.

5、 Testing other equipment

After the measurement of one equipment, close the needle valve on the measuring pipeline and the regulating valve on the instrument. Remove the adapter from the SF6 Electrical equipment. If it is necessary to continue to measure other equipment, continue to measure the next equipment according to the above steps.

6、 End of measurement

After the measurement of all equipment, turn off the power supply of dew point meter.

V.Instrument Operation

1.Instrument self inspection

Turn on the power switch of the instrument, the instrument displays the welcome interface and starts the initialization operation. After 3 seconds, it will automatically enter the instrument self calibration interface. In order to achieve the best measurement state, the sensor needs to be self calibrated every time the instrument is powered on. At this time, the system is in the preheating state, and the system self calibration time is 8 minutes.

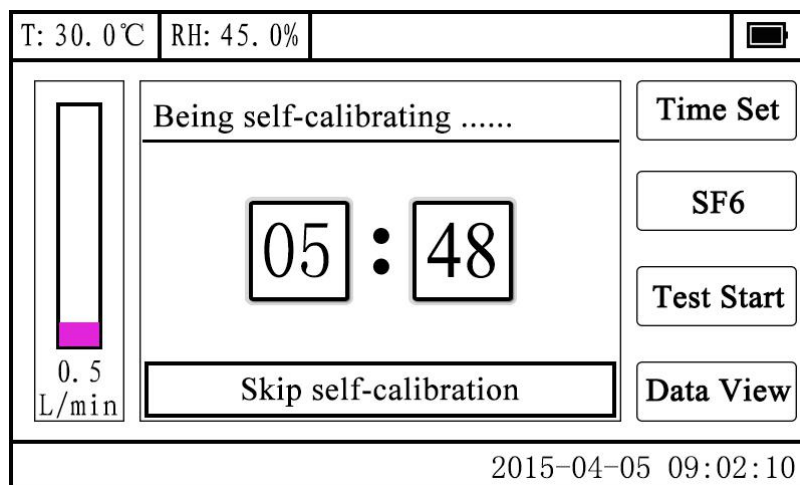


Fig.1 Self Calibration

In the process of self calibration, it is not recommended to inject test gas. After calibration, the instrument will automatically enter the main operation interface. Click anywhere on the screen to skip the self calibration process and directly enter the main operation interface for measurement, but this may increase the test time.

1. Main operation interface

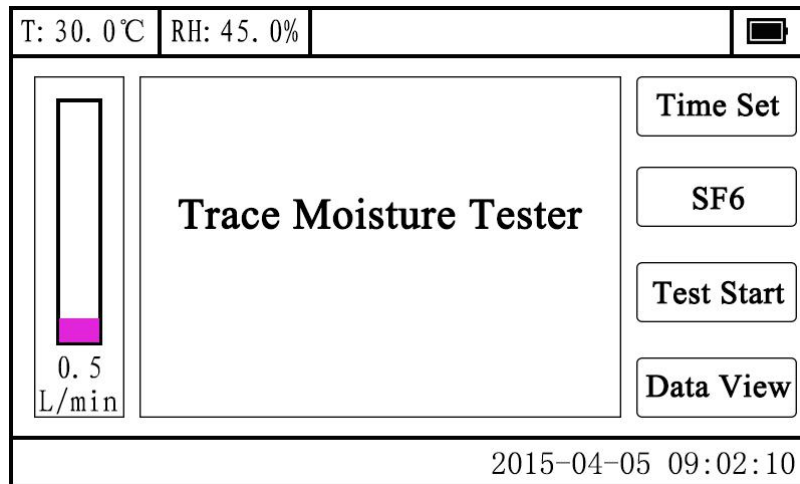


Fig.2 Main Interface

After the self inspection of the instrument is completed, enter the main operation interface, and click the < SF6 > key in the interface to switch the test gas. The test gas that can be selected by the instrument includes SF6 and N2. The test can be carried out after the test gas is set.

2. Test interface

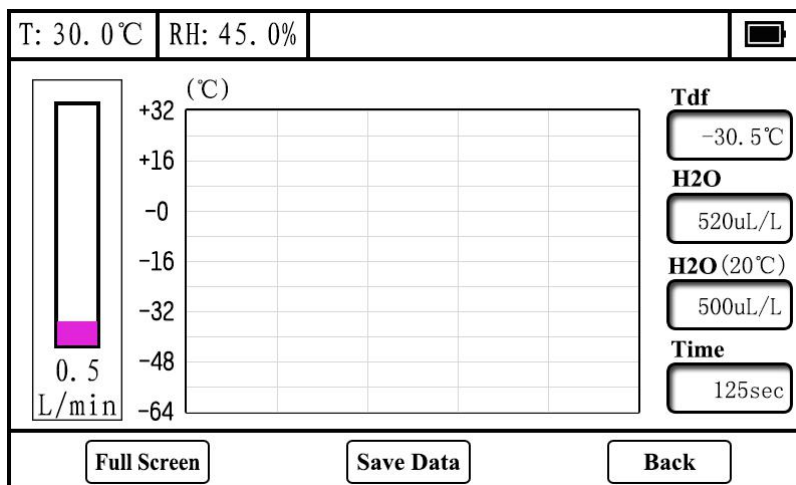


Fig3 Test Interface

After entering the test interface, the measurement curve will be

displayed in real time on the LCD screen. Rotate the "Work-Protect" handle on the panel to the "working position", adjust the flow adjustment knob counterclockwise to adjust the flow to about 0.8l/min. The instrument can simultaneously display dew point value, micro water value of current temperature, micro water value converted at 20 °C, ambient temperature, ambient humidity and measurement curve.

- (1) Battery power display: when the power display is one grid or lower, it needs to be charged in time.
- (2) Air inlet flow display: display the air inlet flow value, and visually display the air inlet size in the form of bar column.
- (3) Curve full screen: curve tracking measurement data is displayed in full screen for easy observation.
- (4) Save data: click the < save data > button or after the automatic detection test of the instrument, the instrument will automatically pop up the equipment number input interface, enter the corresponding equipment number, and click the < confirm > button, and the measurement data will be stored. After the instrument is powered off, the saved measurement records will not be cleared.
- (5) Equipment number entry: click the edit box in the blank space on the right side of the number. When the cursor flashes, click the corresponding digital key to enter the equipment number.

In the measurement process, when the dew point (micro water) of the measured medium changes greatly, the instrument may calibrate and compensate the sensor output signal to ensure the measurement accuracy. During the self calibration of the instrument, the output data remains unchanged. The instrument recovers the normal dew point output after self calibration.

Note:

- ① Don't use too much force when rotating the "Work-Protect" handle, just use a little force until there is resistance;
- ② In order to save the measurement time, the air chamber can be

- purged and ventilated before measurement for about 3-5min;
- ③ If the dynamic measurement curve on the screen is almost in a straight line, it indicates that the data has been stable, and the data can be read;
 - ④ During the instrument test, please do not press any key to complete the measurement as soon as possible and save gas and measurement time;
 - ⑤ After the measurement of one sample is completed, please rotate the "Work-Protect" handle to the "Protect" position before connecting to the next sample to continue the measurement. In this process, it is not necessary to turn off the power supply and directly switch the detected gas;
 - ⑥ After all samples are measured, the "Work-Protect" handle must be rotated to the "Protect" position to keep the sensor in a dry state for the next measurement;
 - ⑦ After the measurement of all equipment, turn off the power supply of dew point meter.

VI.Data Query

Click the < data query > button to view the historical measurement data.

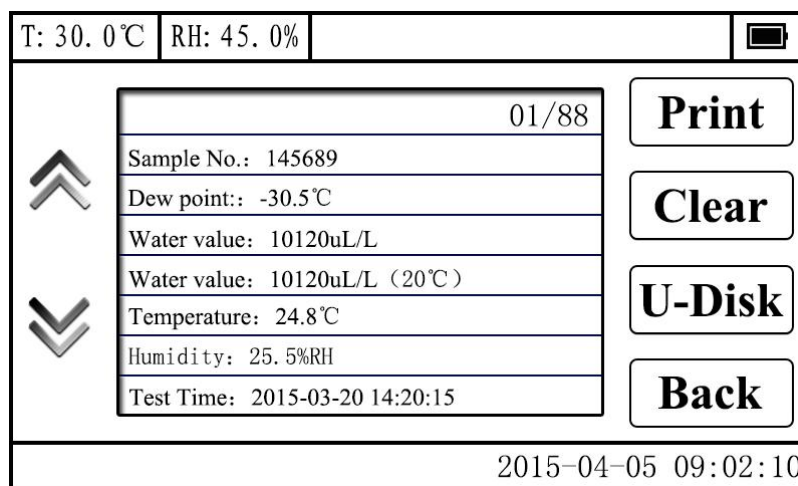


Fig.4 Data Query Interface

In the historical data, the system will display the historical measured and saved data in the form of one directory on each

page. The contents of the directory include serial number, equipment number, measured dew point value (TDF), measured current micro water value, 20 °C micro water value, ambient temperature, ambient humidity and date and time at the time of measurement. The instrument can store 100 pieces of data.

Click "**Clear**", a dialog box will pop up, and click "**OK**" to clear all data in the instrument memory. Click "**Cancel**" and the system will give up the deletion and return to the historical data query interface.

When the historical data exceeds the maximum number of stored records, the system always deletes the earliest stored data by default, and then stores it in a new record. Regularly exporting historical data to USB mobile storage device can reduce the risk of losing historical data due to excessive data, accidental deletion or instrument damage.

VII.Points For Attention

1.The instrument shall be placed in a safe position to prevent damage.

Avoid violent vibration.

2.Do not test corrosive gases.

3.When adjusting the gas flow, slowly open the flow valve to make the flow indication within 0.6 ~ 1L/min.

4.The instrument shall be charged in time before use. When charging, just connect the power adapter equipped with the instrument to the charging port without turning on the power switch. The instrument will charge automatically. The charging time generally takes more than 5 hours.

VIII.Packing List

No.	Item	Qty
1	Powe Adapter	1
2	Air Inlet tube	1
3	Air outlet tube	1
4	Printer paper	1