

DEARTO Instrument · Quality Model

Professional Manufacturer of
Temperature and Humidity
Precision Calibration Instrument

Address : High-tech Development Zone Tai'an,
Shandong Province China

Telephone : +86 0538-5089056 +86 13605384645
+86 18853850621 +86 13953856217

Fax : +86 0538-5059718

After sale : +86 0538-5050959 +86 13954829282

Website : www.dearto.cn www.dearto.com

E-mail : sales01@dearto.cn sales02@dearto.cn
tadtzd@dearto.cn



Website QR code



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DEARTO

泰安德图



Temperature



Humidity



On-site Metrology

Tai'an Detu Automation Instrument Co., Ltd.



About us

COMPANY INTRODUCTION

Hand in hand to create
a better future

DEARTO provide you with a complete solution of specialized temperature and humidity metrology

Tai'an Detu Automation Instrument Co., Ltd. is located in High-tech Industrial Development Zone, Tai'an City, Shandong Province.

The company focuses on the research and development and production of temperature and humidity measurement and calibration technology. It adheres to independent innovation and is committed to creating an industry model for smart temperature and humidity measurement and calibration instruments. The company has won the titles of "High-tech Enterprise", Shandong Province's "

Specialized, Refined, Distinctive & Innovative" SME, Scientific and Technological SME of Shandong ; it is a member unit of the Thermometry and Testing Society and a governing unit of the Shandong Metrology and Testing Society. It has professional R&D and Rich experience in temperature and humidity calibration.

The company has invention patent utility model patents, design patents and software copyrights; participates in the drafting of standards and specifications; has R&D bases in Tai'an and Chengdu. Our representative products include temperature measurement calibration instruments, humidity measurement calibration instruments, and on-site intelligent calibration instruments, surface temperature calibration instruments, radiation thermometer calibration devices and other specialized series of products, customer demand-oriented, and can provide specialized customized products.

DEARTO products have been widely distributed in various fields of national, provincial, and municipal metrology institutes, aerospace, defense forces, military industrial enterprises, electric power, petroleum, smelting, chemical industry, machinery manufacturing, biopharmaceuticals, instrumentation, and colleges and universities. Schools, semiconductor chips, calibration institutions and many other industries. DEARTO Instruments are highly recognized by the market for its precise product quality and professional technical service capabilities.

While based on the China market, DEARTO products have been exported to the United States, Russia, Italy, France, Spain, Israel, Australia, Canada, Germany, Czech Republic, Singapore, Vietnam, Bolivia, Chile, Peru, Indonesia, Kazakhstan, Bangladesh, Thailand and other countries.



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Company qualification



The Business License

National High-Tech Enterprise

"Specialized, Refined, Distinctive & Innovative"

National patent certificate



Invention patent

Temperature And Humidity Calibration Chamber

Temperature And Humidity Tester

Dry Block Calibrator

High Precision Thermostatic Chamber

Certificate of patent/Software copyright



Thermocouple Calibration Furnace

Micro Intelligent Calibration Bath

Wireless Hygrometer

Hand-Held Digital Thermometer

Temperature And Humidity Calibration Chamber

Surface Probe Temperature Calibrator

Software copyright registration certificate



Thermal Instrument Validation System

Standard Thermocouple Validation System

Thermocouple thermal resistance detection system

Scanner Automatic Test System

Thermistor Automatic Test System



Precious Metal Thermocouple Wire Test Software

Platinum Rhodium Thermocouple Filament Test Software

Thermocouple Calibration Furnace Temperature Field Test Procedure

Automatic Temperature Control Software For Constant Temperature Bath

Intelligent Water Three-Phase Point Bath Automatic Control System

Intelligent Oil Bath Automatic Control System



Temperature And Humidity Validation Box Control System

Mechanical Hygrometer Validation System

Digital Hygrometer Calibration System

Temperature And Humidity Field Test System

Automatic Temperature Field Test System

High Precision Digital Thermometer System



Uncertainty Calculation Software

Data Correction Software

Validation System Of Digital Temperature Indicator And Regulator

Automatic Control System Of Double Channel Precision Thermometer

Wireless Temperature Field Intelligent Inspection System

Wireless Temperature/Humidity/Pressure Validation System

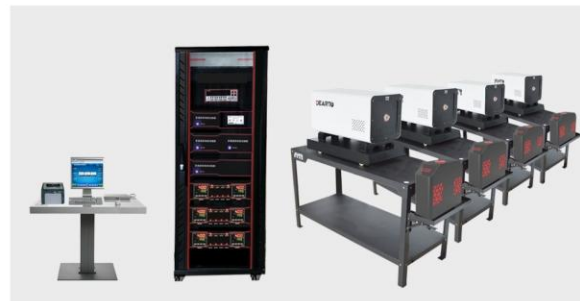
DTZ-01G Thermocouple and thermal resistance automatic calibration system is an automatic validation equipment integrating computer technology, electronic technology and automatic testing technology. The system can realize the complete automation of temperature control, data acquisition, data processing, report form generation, data storage and printing in the process of primary and secondary temperature instrument validation/calibration. The function and technical index of the system fully comply with the relevant national validation regulations and the ITS-90 international temperature scale.

Thermocouple And Thermal Resistance Automatic Calibration System



- DTZ-01G Thermocouple And Thermal Resistance Automatic Calibration System
- DTZ-NTC Thermistor automatic detection system
- DTZ-01SG Automatic Calibration System for Precious Metal Thermocouple Wire
- DTZ-EG International version. Automatic Calibration System For Thermocouples And Thermal Resistances

Group Furnace Thermocouple Thermal Resistance Calibration System



- DTZ-02G Group Furnace Thermocouple, Thermal Resistance Automatic Calibration System
- DTZ-02AG Automatic Calibration System for Standard Thermocouple
- DTZ-03G Automatic Simultaneous Calibration System For Thermocouple And Thermistor

Intelligent Precision Thermostatic Calibration Bath



- DTS-CTG Intelligent Calibration Bath [-100°C ~ 300°C]
- DTS-G Precision Calibration Bath [-100°C ~ 300°C]
- DTW-G Extremely High Temperature Calibration Salt Bath [180°C ~ 670°C]
- DTS-CHG Ultra-Low Temperature Calibration Bath [-180°C ~ 95°C]
- DTF-G Triple Point Of Water Maintenance Bath
- DTS-TG High And Low Temperature Calibration Bath [-30°C ~ 180°C]
- DTS-T500G Super Large Diameter Calibration Bath [φ500mm]
- DTR-G Heat Pipe Calibration Bath [50°C ~ 550°C]

Thermocouple Calibration Furnace Series



- DTL-600BG Standard Thermocouple Calibration Furnace
- DTL-600G Low-cost Metal Thermocouple Calibration Furnace
- DTL-300G Short Thermocouple Calibration Furnace
- DTL-HG High Temperature Thermocouple Calibration Furnace
- DTL-TG Thermocouple Annealing Furnace
- DTL-IIIG Multi-temperature Zone Precision Calibration Furnace

DTZ-01G Thermocouple And Thermal Resistance Automatic Calibration System



Product Functions

Validation / Calibration Function	Indexing Number	Grade	Notes
Standard Thermocouple	S/R/B	Class I, and Class II	Standard thermocouple
Thermocouple for Working	S/RShort S/Short R	Grade I and II	Precious metal thermocouple for working
	B	Grade I and II	
	Grade K, N, E, J, T, EA-2	Grade I, II	Base metal thermocouple for working
	WRe3-WRe25/WRe5-WRe26		Tungsten rhenium thermocouple for work
Industrial Thermistor	Pt100/Pt10/Cu50/Pt-X/Cu-X	Grade AA, A, B, and C	Two-wire, three-wire, and four-wire system
Temperature Transmitter	0-10mA/4-20mA/1-5V		With thermocouple and thermistor
Precious Metal Thermocouple Wire	S/R	Standard Grade (Class I and II), Grade I and II	Previous metal thermocouple wire
	B	Standard Grade (Class I and II), Grade I and II	
Platinum Rhodium Thermocouple Wire	S/R/B		
Base Metal Thermocouple Wire	K/N/E/J/T	Grade I, II, and III	Base metal thermocouple wire
Platinum Wire for Electrical Resistance Thermometer	Pt25/Pt100/Pt10	Standard Grade (Class I and II), Grade A and B	Platinum wire for electrical resistance thermomete
Expansion Thermometers	Standard mercury-in-glass thermometer, liquid-in-glass thermometers for working, bimetal thermometer, and pressure type thermometer		
Secondary Temperature Instruments	Moving-coil temperature indicator regulator, digital temperature indicating regulator, industrial process measurement recorder		

Product features

Efficient working mode

- Mixed validation function: it can realize the mixed validation of metal thermocouple with different degrees in the same furnace.
- Group validation function: low temperature thermocouple, thermal resistance can be group validation, a batch of validation 10Group (100 PCS).
- Strong inspection function: the system can carry out rapid compulsory validation according to user requirements.
- Verify the special positioning device for the furnace, and quickly install the thermocouple to ensure the accuracy of the position.
- Advanced temperature control mode, fast temperature rise, good stability effect, shorten the validation time, improve efficiency.
- Perform automatic uncertainty calculation, display the summary table of uncertainty components and calculation process.
- Support the use of standard couple for temperature control, improve the temperature control accuracy, temperature control speed and temperature control stability.
- It can be upgraded to multi-furnace group control system in case of large number of validation.

Perfect security mode

- Dual temperature control protection with imported intelligent instrument and software, and has the function of overtemperature protection, power failure protection.
- Self-check and line check function: humanized prevention and protection can be carried out for the standard and checked wiring opening and reverse connection.
- The software supports multimedia sound alarm and prompt function, allowing users to personalise the alarms and prompts of various events.
- Adopting standard cabinet, the power supply and signal control parts are handled separately to avoid the problem of signal interference.

The configuration is flexible and diverse

- Support a variety of models of digital table communication.
- Compatible with different manufacturers of constant temperature source./
- Thermocouple validation temperature point can be set at any point according to customer requirements, such as 660.5°C.
- Reference end can be compensated by freezing point thermostat or automatic compensation by reference end temperature sensor. The reference end temperature sensor is adopted Class A Pt100 platinum resistance, stable reading, high measurement accuracy, easy correction. The corrected value can be input into software to improve the accuracy of measurement. The accuracy.

Graphical software operating platform

- The software can run in Windows series operating system, Chinese interface, simple operation.
- Rich display interface: real-time display of validation data and temperature control curve, and can automatically track, display all the status information of all validation furnace, constant temperature tank, standard device, convenient metering personnel to control the real-time operation of equipment.
- Simulation validation function, software simulation to complete the whole validation process, can be used for software learning and demonstration. Software and hardware products have completely independent intellectual property rights, upgrade service is guaranteed, to provide customers with more thoughtful service.

Modular data management functions

- It has powerful data collection, data analysis and processing, report management, data query, equipment self-check and other functional modules. After validation, all the original data and validation certificates are automatically stored in the database. Users can query and print the original records and reports according to the condition query function, and have memory function. The checked information can be directly added in the next validation.
- The system data backup function can adopt manual backup and automatic backup to facilitate measurement traceability.

Uncertainty calculation software (Software Copyright Registration No. 2020SR0328241)

- Uncertainty calculation software is a calculation validation system software of uncertainty, DTZ - 01 thermocouple, heat resistance can be calculated automatic validation system, or other thermocouple thermal resistance automatic validation system uncertainty, automatic calculation of each component of uncertainty, synthetic uncertainty and expanding uncertainty, supports export uncertainty analysis file.

Free professional version of temperature scale conversion software

- Provide ITS 90 international temperature scale conversion desktop software and mobile phone App, which can realize temperature unit conversion; Conversion of temperature value and potential value and calculation of differential thermoelectric potential of thermocouple (containing tungsten-rhenium thermocouple) for work; Industrial thermal resistance temperature value and resistance value conversion and differential thermal resistance calculation; Conversion between standard even temperature value and potential value and calculation of integral hundred certificate value; Standard platinum resistance temperature value and resistance value conversion; Dry and wet bulb humidity conversion; Conversion of heat transfer coefficient; Conversion of heat transfer rate; Power unit, pressure unit, diffusion coefficient, length unit, area unit, surface tension, speed unit, force unit, dynamic viscosity, kinematic viscosity, energy unit conversion.

Multichannel low potential scanner

- The fully sealed low potential scanning switch driven by stepper motor is adopted. The switch substrate is made of large area covered with silver material, dustproof, Wear resistance, oxidation resistance; The wiring terminals are of the same batch of pure copper material. The parasitic potential is $\leq 0.2\mu V$ for a long time.
- Including four-wire reversing switch, through the unique forward and reverse measurement switching function, effectively eliminate the parasitic electricity in the measurement loop. The effect of potential on the measured results.
- The use of color touch screen, built-in use guide, customers do not need to read the manual can query the use of the system at any time. Real-time display of standard, channel position and status, can switch standard, channel position, manual validation can be carried out when the state is separated from the host computer.



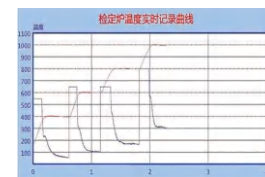
Main interface of the system



Thermocouple characterization operation interface



RTD characterization operation interface



Temperature of the calibration furnace is recorded in real time



Mobile version of 90 temperature scale thermal calculator

Integrated terminal

- The system wiring platform and three-wire resistance converter integrated design, compatible with thermocouple, two-wire heating resistance, three-wire heating resistance, four-wire heating resistance wiring. Automatically complete the measurement function switch of including two internal leads and including one internal lead in the validation of three-wire heating resistance.

Stable and reliable product performance

- The company has passed iso9001:2015 international quality management system certification and strictly implemented the products from raw material selection, production and processing to finished products are in line with the national industry standards, better than the domestic regulations and norms at the same time meet the requirements of AMS 2750F Aerospace Materials Specification high Temperature Measurement.

Software secondary development function

- Users can design their own form and certificate format according to requirements. Software can be customized and modified on the existing basis according to user needs, provide relevant interfaces, realize the secondary development of software to meet users' own needs.

Technical indicators

- Multi-channel scan switch parasitic potential: $\leq 0.2\mu V$
- Data collection difference between channels: $\leq 0.5\mu V$ $1m\Omega$
- Measurement repeatability: $\leq 1.0\mu V$ $3m\Omega$
- Thermocouple validation furnace constant temperature performance: constant temperature $\leq 0.5^\circ C/6min$ measurement $\leq 0.1^\circ C/min$
- Constant temperature oil, water tank constant temperature performance: constant temperature $\leq 0.02^\circ C/10min$ measurement $\leq 0.01^\circ C/min$
- Thermocouple reference compensation range: $0\sim 50^\circ C$ Display resolution: $0.01^\circ C$

Procedures, norms, standards for implementation

Sequence	Code of regulations and codes	Name of procedure and specification
1	JJG75-2022	Validation regulation of standard platinum-rhodium 10-platinum thermocouple
2	JJG141-2013	Validation regulation of precious metal thermocouple for work
3	JJF1637-2017	Specification for calibration of metal thermocouple
4	JJG668-1997	Validation regulation of platinum-rhodium 10- Platinum and platinum-rhodium 13- Platinum short thermocouple for working
5	JJG368-2000	Validation regulation of copper-copper-nickel thermocouple used in work
6	JJG229-2010	Validation regulation of industrial platinum and copper thermal resistance
7	JJF1262-2010	Calibration specification for armored thermocouple
8	JJF1176-2007	Calibration specification for tungsten-rhenium thermocouple (0-1500°C)
9	JJF1098-2003	Calibration specification for thermocouple and thermal resistance automatic measuring system
10	JJG130-2011	Validation regulation of glass liquid thermometers used in work
11	JJG161-2010	Validation regulation of standard mercury thermometers
12	JJG310-2002	Validation regulation of pressure thermometers
13	JJF1909-2021	Specification for calibration of pressure thermometers
14	JJG226-2001	Validation regulation of bimetal thermometers
15	JJF1908-2021	Specification for calibration of bimetallic thermometers
16	JJF1184-2024	Technical specification for temperature field test of thermocouple validation furnace
17	JJF1030-2023	Specification for technical performance test of constant temperature tank
18	JJF1183-2007	Calibration specification for temperature transmitters
19	AMS2750F	High temperature measurement

Software copyright registration number
 2015SR104859 2016SR107498 2013SR024368
 2015SR105857 2020SR1061905 2016SR107593

DTZ-02G Group Furnace Thermocouple, Thermal Resistance Automatic Calibration System



Product overview

DTZ-02G Group furnace automatic testing system can control 1-10 inspection furnaces at the same time, each testing furnace can be verified 1-10 thermocouples at a time, and at the same time carry out industrial thermal resistance, low temperature thermal power puppets, integrated temperature transmitter, Automatic validation/calibration of glass liquid thermometer, dual metal thermometer, and pressure -type thermometer. The system can perform 100 test/calibration of 100 thermocouples at the same time, meet the requirements of large -scale thermocouple puppets in a short time, and support the grouping of various industrial platinum and copper heat resistance in various types of industrial platinum and copper heat resistance.



Product functions and features

- Support automatic validation of low temperature thermocouple, automatic temperature control, automatic validation of all calibration points, without manual participation.
- Automatic validation is supported to realize automatic temperature control, data monitoring, data acquisition and data processing. After validation, various reports are automatically generated and records are saved. Supports search and query through the database.
- Support thermocouple low temperature section and high temperature section combined validation, can automatically select constant temperature source and standard device, automatic combined report form. Standard platinum resistance validation is used in low temperature section, and standard thermocouple validation is automatically selected in high temperature section without manual modification of standard.
- Support to summarize and display the operation status information of all validation furnaces, convenient to check and manage the validation process, check the set temperature value, actual temperature value and temperature change rate of validation furnaces, etc.
- Supports automatic channel check and filtering. During the channel check, the system automatically prompts the discovery of open and short circuits.
- Support multimedia sound alarm, electronic signature and other functions,
- Support validation in accordance with the American standard: meet the requirements of the American standard "AMS2750F Aerospace Materials Specification for High Temperature Measurement".
- Support automatic calculation of thermocouple and thermal resistance uncertainty, display the uncertainty component summary table and support to view all the calculation process of each component.
- Equipped with professional uncertainty repeatable automatic testing software:Support automatic test group furnace test system thermocouple, low temperature thermocouple, thermal resistance repeatability. It can be used as a standard building tool to generate a summary table of uncertainty components and an uncertainty evaluation report in WORD format.
- It is equipped with ITS 90 international temperature scale conversion PC software and mobile phone App professional software, which can easily realize the temperature conversion of working thermocouple, industrial thermal resistance, standard thermocouple, standard platinum resistance, temperature transmitter and other sensors.

Supporting professional version of automatic test system software

It can be used for automatic testing of low potential scanner in standard thermocouple automatic measuring system, working thermocouple automatic measuring system and industrial thermal resistance automatic measuring system. According to "Calibration specification for Thermocouple and thermal resistance Automatic measuring System", it can complete the parasitic potential test of scanner and data difference test between channels.

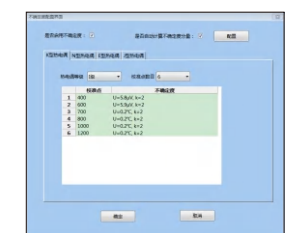
- Full support for a full range of low potential scanner automatic testing.
- Conduct data collection, data calculation and conclusion judgment in strict accordance with the specification requirements.
- Simple operation, easy to use, through validation wizard, intelligent prompt to guide users to operate accurately.
- Intelligent test process control, automatic completion of parasitic potential project test.
- Intelligent guide channel data difference project test, through pop-up window, voice prompt users to switch signal source in time.
- Channel data is automatically checked before the test to detect data anomalies in a timely manner.
- Check communication abnormality in real time, prompt abnormality in time, intelligent automatic retry, automatic recovery.
- Support simulation validation, convenient system learning and demonstration.
- Validation data can be saved in real time, and data validation can be continued after the system abnormally exits or manually stops.
- Support validation parameter configuration to meet different test requirements.
- Validation data is displayed in real time for checking validation situation in time.
- When continuing validation, the starting position of validation can be selected again.
- Export test data to Excel and WPS record files.

General functions and features

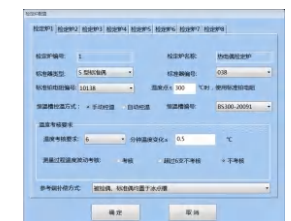
- Support to control 1-10 calibration furnaces simultaneously for automatic validation/calibration of calibration/standard (B, S, R, K, N, E, J, T) thermocouples and working thermocouples. At the same time carry out validation/calibration(Pt10, Pt100, PT-X, Cu50, Cu100, Cu-X) all kinds of industrial platinum, copper thermal resistance, low temperature thermocouple, (0-10mA, 4-20Ma, 1-5V, etc.) integrated temperature transmitter.
- With mixed calibration function, improve detection efficiency, each thermocouple validation furnace can be set separately to be tested and the number of detection, and realize the validation/calibration of different calibration number of metal thermocouple in the same validation furnace, and can automatically process data and result judgment.
- It supports group validation of various industrial platinum and copper thermal resistors (Pt10, Pt100, PT-X, Cu50, Cu100, Cu-X), and 100 thermal resistors can be verified at one time.
- Thermocouple group furnace validation system software runs independently, compatible with low temperature constant temperature tank, constant temperature oil tank, validation furnace and other different constant temperature sources, to achieve normal communication, control, acquisition and validation work.
- Thermocouples for work provide a variety of reference terminal processing methods, support zero thermostat compensation or automatic room temperature compensation.
- Standard temperature control couples are supported to improve temperature control accuracy, speed, and stability.
- Software system measurement management integration, multi-thread design, compatibility and self-diagnosis ability.
- System software compatible with windows2000, XP, windows7, windows8, windows10 and other operating platforms, all Chinese interface, mouse click operation, with practical, professional, open, compatible with different manufacturers of supporting equipment.
- The validation device software is independently developed in strict accordance with relevant national validation regulations and norms, and has dynamic simulation validation.
- The system software has the function of power failure protection, and the connection validation can be selected according to the demand after the power supply is restored.
- The core technology of software and hardware in the system has completely independent intellectual property rights, providing all-round upgrade guarantee for customers.



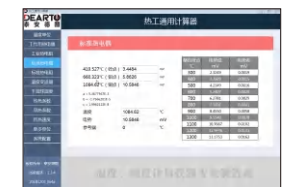
System main interface



Uncertainty configuration interface



Configuration interface of thermocouple validation furnace



ITS 90 international temperature scale conversion software



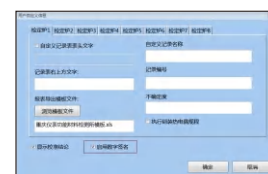
Calibration record sheet



Uncertainty component calculation process



Support validation according to American standard



Electronic signature function



Multimedia sound alarm function

Low potential scanner proprietary features

- Low potential scanner adopts 7 inch LCD control screen: real-time monitoring standard, channel position and status, can switch standard, channel position; validation/calibration can be carried out when it is separated from the host computer.
- Convenient and quick query function: built-in quick guide for the use of products, customers can query the use instructions of the system at any time, including the standard, wiring mode, testing process and maintenance and other practical functions.
- The low potential scanning switch is fully enclosed low potential scanning switch driven by stepper motor. The switch substrate is made of large area silver coated material, dustproof, wear-resistant and oxidation resistant. The wiring terminals are made of the same batch of pure copper; The switch has low parasitic potential, small contact resistance, good stability and high reliability. The parasitic potential is less than 0.2μV for a long time. Service life is more than 10 years.
- Optimized thermal resistance measurement method: including four-wire reversing switch, through the unique forward and reverse measurement switching function, effectively eliminate the influence of parasitic potential in the measurement loop on the measurement results.



Multichannel low potential scanner



Product Functions

Validation / Calibration Function	Indexing Number	Grade	Notes
Standard Thermocouple	S,R,B	Class I, and Class II	Standard thermocouple
Thermocouple for Working	S,RShort S,Short R	Grade I and II	Precious metal thermocouple for working
	B	Grade I and II	
	Grade K, N, E, J, T, EA-2	Grade I, II	Base metal thermocouple for working
	WRe3-WRe25,WRe5-WRe26		Tungsten rhenium thermocouple for work
Industrial Thermistor	Pt100,Pt10,Cu50,Pt-X, Cu-X,Cu100	Grade AA, A, B, and C	Two-wire, three-wire, and four-wire system
Temperature Transmitter	0-10mA,4-20mA,1-5V		With thermocouple, thermal resistance
Precious Metal Thermocouple Wire	S,R	Standard Grade (Class I and II), Grade I and II	Previous metal thermocouple wire
	B	Standard Grade (Class I and II), Grade II and III	
Platinum Rhodium Thermocouple Wire	S,R,B		
Base Metal Thermocouple Wire	K,N,E,J,T	Grade I, II, and III	Base metal thermocouple wire
Platinum Wire for Electrical Resistance Thermometer	Pt25,Pt100,Pt10	Standard Grade (Class I and II), Grade A and B	Platinum wire for electrical resistance thermomete
Expansion Thermometers	Standard mercury-in-glass thermometer, liquid-in-glass thermometers for working, bimetal thermometer, and pressure type thermometer		
Secondary Temperature Instruments	Moving-coil temperature indicator regulator, digital temperature indicating regulator, industrial process measurement recorder		

Technical indicators

Project	Indicators	Project	Indicators
Degree of accuracy	0.005%	Display resolution	0.01°C
Scan switch parasitic potential	≤0.2μV	Thermocouple free end compensation range	(5 - 50)°C
Data collection difference between channels	≤0.5μV, 1.0 mΩ	Control ability of thermocouple validation furnace	220V, 0 - 40A
Repeatability of measurement	≤1.0μV, 3.0 mΩ	Set point deviation	≤0.1°C
Validation of measurement data processing results	≤0.1μV, 0.1mΩ	Total extended uncertainty of thermocouple system	≤0.68°C
Total expansion uncertainty of thermal resistance system	The standard platinum resistance Rtp is remeasured using a water three-phase point flask to obtain: thermal resistance≤0.03°C(0°C); 0.06(100°C)		
	Standard platinum resistance Rtp directly uses the value given by the certificate: thermal resistance≤0.05°C(0°C); 0.09(100°C)		
Thermocouple system for working	Constant temperature ≤0.5°C/6min Measurement ≤0.1°C/min		
Constant temperature performance of industrial thermal resistance system	Constant temperature ≤0.02°C/10min Measurement ≤0.01°C/min		

Product overview

DTZ-02AG Automatic calibration system for standard thermocouple is mainly used for automatic validation/calibration of various standard thermocouples and working thermocouples. Through hardware design adjustment and software architecture upgrade, the system realizes the function of validation of standard thermocouple, precious metal thermocouple and inexpensive metal thermocouple at the same time, supporting the control of 10 validation furnaces at the same time. It can meet the requirement of verifying a large number of standard thermocouples in a short time or at the same time when verifying a large number of working thermocouples.

DTZ-02AG Automatic Calibration System For Standard Thermocouple



Technical indicators

Project	Indicators	Project	Indicators
Degree of accuracy	0.005%	Display resolution	0.01°C
Scan switch parasitic potential	≤0.2μV	Thermocouple free end compensation range	(5 - 50) °C
Data collection difference between channels	≤0.5μV, 1.0 mΩ	Control ability of thermocouple validation furnace	220V, 0 - 40A
Repeatability of measurement	≤1.0μV, 3.0 mΩ	Set point deviation	≤0.1°C
Validation of measurement data processing results	≤0.1μV, 0.1mΩ	Total extended uncertainty of thermocouple system	≤0.68°C
Total expansion uncertainty of thermal resistance system	The standard platinum resistance Rtp is remeasured using a water three-phase point flask to obtain: thermal resistance≤0.03°C (0°C) ; 0.06 (100°C)		
	Standard platinum resistance Rtp directly uses the value given by the certificate: thermal resistance≤0.05°C (0°C) ; 0.09 (100°C)		
Thermocouple system for working	Constant temperature ≤0.5°C/6min Measurement ≤0.1°C/min		
Constant temperature performance of industrial thermal resistance system	Constant temperature ≤0.02°C/10min Measurement ≤0.01°C/min		

Product features

- The system can automatically calibrate standard thermocouple, precious metal thermocouple and low metal thermocouple simultaneously.
- Support mass validation, up to 100 standard thermocouples/working thermocouples at the same time.
- Support automatic validation, automatic temperature control, data monitoring, data acquisition and data processing.
- After validation is completed, various reports are automatically generated and records are saved, and retrieval and query are supported through the database.
- The temperature control system is equipped with imported intelligent PID controller and adopts advanced expert PID algorithm to effectively prevent temperature overshooting and temperature fluctuation in the process of temperature control.
- Thermocouple group furnace validation system software runs independently, compatible with low temperature constant temperature tank, constant temperature oil tank, validation furnace and other different constant temperature sources, to achieve normal communication, control, acquisitionWait for validation work.
- The system has the function of mixed validation, which can realize the mixed validation of standard thermocouple with different degrees in the same furnace.
- Equipped with ITS 90 international temperature scale conversion desktop software and mobile phone App, it can realize the temperature conversion of working thermocouple, industrial thermal resistance, standard thermocouple, standard platinum resistance, temperature transmitter and other sensors.
- The validation system conforms to the requirements of JJF1098-2003 "Calibration specification for Thermocouple and thermal resistance Automatic Measurement System" and other related regulations and specifications.



Product overview

DTZ-03G Thermocouple and thermal resistance automatic simultaneous inspection system supports industrial thermocouple and thermal resistance validation. During the validation process, thermocouple validation and thermal resistance validation operate independently without interference, and can automatically control temperature, monitor, collect and issue validation results, with friendly interface, comprehensive function and simple operation.



Product overview

Thermistor automatic detection system is mainly used for automatic validation/calibration of various thermistor sensors. The system is controlled by computer multi-channel low potential scanner, digital multimeter, constant temperature oil (water) tank and other equipment, to achieve the NTC thermistor data acquisition, data processing, report generation, printing, and data storage of the full automatic detection equipment. In order to better test thermistors, the system also supports automatic testing of NTC thermistors with different nominal resistance and B value range.

DTZ-03G Automatic Simultaneous Calibration System For Thermocouple And Thermistor



Technical indicators

- Multi-channel scan switch parasitic potential: $\leq 0.2\mu\text{V}$
- Data collection difference between channels: $\leq 0.5\mu\text{V}$ $1\text{m}\Omega$
- Measurement repeatability: $\leq 1.0\mu\text{V}$ $3\text{m}\Omega$
- Thermocouple validation furnace constant temperature performance: constant temperature $\leq 0.5^\circ\text{C}/6\text{min}$ measurement $\leq 0.1^\circ\text{C}/\text{min}$
- Constant temperature oil, water tank constant temperature performance: constant temperature $\leq 0.02^\circ\text{C}/10\text{min}$ measurement $\leq 0.01^\circ\text{C}/\text{min}$
- Thermocouple reference compensation range: $0^\circ\text{C}-50^\circ\text{C}$
- Resolution: 0.01°C

Software
copyright
registration
number
2018SR257584

Product features

- Automatic simultaneous validation of working thermocouple, industrial thermal resistance, etc., 1-10 thermocouple/thermal resistance can be verified at one time.
- Assist in verifying glass liquid thermometers, bimetal thermometers, pressure thermometers, etc., automatically process data and generate record forms.
- It can automatically calibrate S, R, B, K, N, J, E, T, short S, short R equal division number for working thermocouple; Pt10, Pt100, Cu50, Cu100, PT-X (other resistance value platinum thermal resistance), Cu-X (other resistance value copper thermal resistance) equigraded industrial thermal resistance.
- The system wiring platform and three-wire resistance converter integrated design, compatible with thermocouple, two-wire heating resistance, three-wire heating resistance, four-wire heating resistance wiring. Automatically complete the function switch of including 2 internal leads and including 1 internal leads in the validation of three-wire heating resistance.
- The validation temperature point setting can either adopt the default value of the regulation, or set according to user requirements.
- The reference terminal can be compensated by zero temperature thermostat or automatically compensated by the temperature sensor of the reference terminal.
- The reference temperature sensor adopts grade A Pt100 platinum resistance, stable reading and high measurement accuracy.
- Automatically generate validation data record form, validation certificate or validation result notification, validation record form can be exported and displayed in Excel, convenient for user operation. Form and certificate format can be designed according to user requirements.
- Data records are stored in the system hard disk, which makes it easy to query data records and support printing and output validation data. With the function of simulation validation, the whole validation process can be completed by software simulation, which can be used for software learning or demonstration.

DTZ-NTCG Thermistor Automatic Detection System



Product features

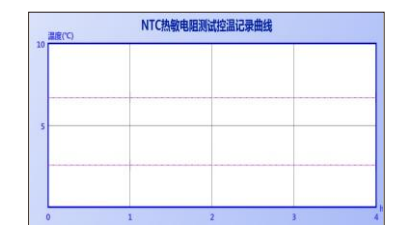
- System software compatible with windows2000, XP, windows7, windows8 and other operating platforms, all Chinese interface, mouse click operation, convenient and fast; Professional, easy to use, strong operability, open interface compatible with different manufacturers of supporting equipment.
- The system software can realize thermistor group validation.
- Test temperature points can be set up to 8 different temperature points, to meet the requirements of the test.
- Can be carried out at the same time a variety of different ratios of thermistor test.
- Real-time view of temperature control curve.
- The software can customize the record table title to meet the personalized needs of users.
- Test data collection times can be changed according to test requirements.
- The software has a professional, rich report output function: automatically generate validation data record form, validation certificate or validation result notice, all forms, certificates can be exported and displayed in Excel, convenient for customers to operate. Form, certificate format can be designed according to customer requirements.

Software interface

Record sheet of test results



Original data record sheet



Temperature control record curve

Product overview

DTZ-E International version. automatic calibration system for thermocouples and thermal resistances is facing export project company independent orientation research and development of software system, the system has been exported to Italy, the United States, Russia, Canada, Spain, Australia, Indonesia, Israel, Vietnam, Bolivia, Chile, Peru, Indonesia, Bangladesh, Thailand, kazakhstan and other countries. It has been successfully applied in electric power, shipbuilding, metering/calibration institutions, machinery manufacturing and other industries.

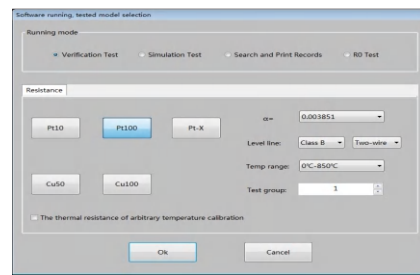
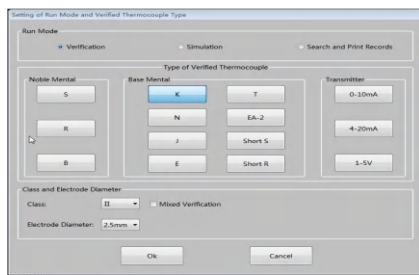
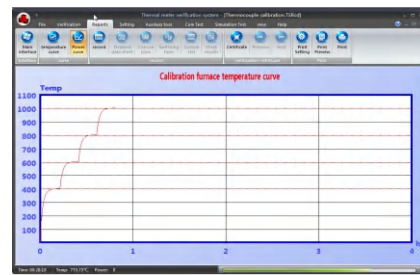
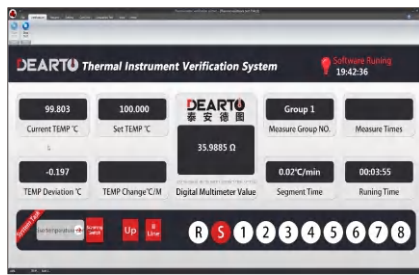


Product overview

DTZ-01SG The automatic calibration system of precious metal thermocouple wire is completely developed based on the technological process of the thermocouple manufacturer. It is mainly used for the thermoelectric electromotive force measurement of precious metal platinum rhodium wire/platinum rhodium wire, calibration of paired platinum rhodium thermocouple, calibration of standard platinum rhodium thermocouple and calibration of industrial precious metal thermocouple. The system can fully automate the measurement and validation process of thermocouple wire and thermocouple.

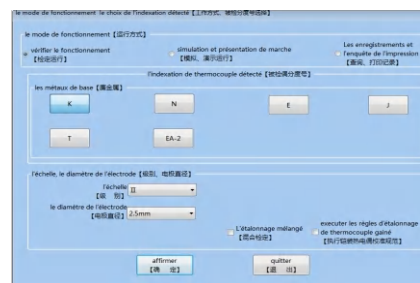
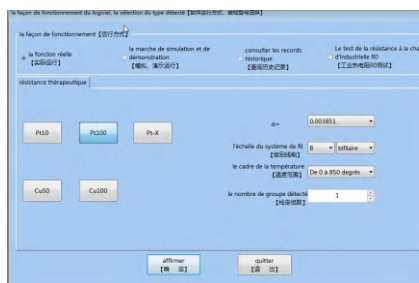
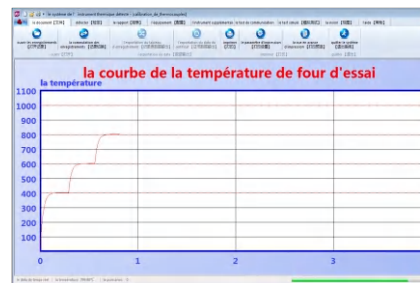
DTZ-E International Version. Automatic Calibration System For Thermocouples And Thermal Resistances

English software



French software

Point	Temp (°C)	Resistance (Ω)	Temp (°C)	Resistance (Ω)
1	100	1000	200	2000
2	200	2000	300	3000
3	300	3000	400	4000
4	400	4000	500	5000
5	500	5000	600	6000
6	600	6000	700	7000
7	700	7000	800	8000
8	800	8000	900	9000
9	900	9000	1000	10000



DTZ-01SG Automatic Calibration System for Precious Metal Thermocouple Wire



Product features

Advanced technology

- Optimize the multi-channel low potential scanner design, without changing the wiring mode, can simultaneously carry out bipolar method and the same name pole method measurement.
- Support the use of bipolar method and the same name method calibration, users through data comparison, can review the results, analysis of problems, excellent process.
- Add automatic segmented PID temperature control mechanism for high temperature furnace to accurately control the whole process of temperature rise in low temperature section of high temperature furnace to prevent electricity current load damage.
- Perfect the temperature control function of palladium point furnace for platinum rhodium filament measurement, linearly heating up in strict accordance with national standards, and reproduce the palladium point platform.

Feature-rich

- Complete automatic measurement and validation, realizing temperature control, data monitoring, data acquisition, data processing, report generation and printing fully automated.
- The interface is rich in content, real-time display of validation system operation information, standard couple temperature curve, validation/calibration point collection data.
- Simulation validation function, complete the whole validation process by software simulation, can be used for software learning and demonstration.
- The software report template has perfect functions and strong adaptability, and can be customized and modified according to user needs.

Flexible configuration

- Support manual validation, users can achieve data collection through manual control, adapt to different business needs.
- It can measure thermoelectric potential of 10 positive and 10 negative wires at the same time with high speed and efficiency.
- Can choose a variety of data acquisition methods, effective use of positive and negative test data to eliminate systematic errors.
- Support the specified temperature point non-uniform thermoelectric potential test function.



Software copyright registration number



Software copyright registration number

Software copyright registration number 2016SR107498
2016SR107593

DTS-CTG Intelligent Calibration Baths

Product overview

DTS-CTG Intelligent calibration baths is a new type of intelligent constant temperature bath launched by our company, using touch screen control and operation, completely intelligent man-machine interface, more convenient, simple and practical control. The structure adopts double chamber side stirring technology, and intelligent PID adjustment makes the constant temperature bath to reach the ideal uniform temperature field, which can meet the validation/calibration of various temperature sensors such as low temperature thermocouple, industrial thermal resistance, pressure type thermometer, bimetal thermometer, glass liquid thermometer and so on.

Intelligent Accurate Security



- Temperature control rate is adjustable
Set heating rate freely
- Active smoke extraction system
Create a healthy smoke-free environment
- Intelligent man-machine interface
The operation is simple
- Real-time curve display Automatic calculation of volatility
- Intelligent rehydration
Low level alarm
Real-time monitoring of liquid level
- Uniform temperature field
Stability warning function
Steady state display in real time
- Ergonomic design
The cantilever Angle length of three axis machinery can be adjusted freely
- Overheat protection
Overtemperature power outage Software and hardware protection

Product details



Mobile APP control function



Stability tip



Temperature control rate is adjustable

Product selection table

Temperature range	-180°C~-40°C	-100°C~100°C	-30°C~180°C	70°C~300°C	180°C~670°C
Name	Refrigerated Temperature Calibration Baths	Intelligent Low temperature Calibration Baths Precision low temperature calibration baths Super Large Diameter Calibration Baths Triple Point of Water Maintenance Bath	High and Low temperature Calibration Baths	Intelligent precision constant temperature oil bath Precision Calibration oil bath Super Large Diameter Calibration Baths Can recycled rapidly cooling the constant Calibration Baths	Precision Sait Baths Heat pipe Calibration Baths
Model	DTS-180CHG DTS-160CHG	DTS-CT01G DTS-CT10G DTS-CT30G DTS-CT40G DTS-CT60G DTS-CT80G DTS-CT100CHG DTS-CT10-T500G DTS-CT30-T500G DTS-CT80-T500G	DTS-01G DTS-10G DTS-30G DTS-40G DTS-60G DTS-80G DTS-100CHG DTS-10-T500G DTS-30-T500G DTS-CT10-T500G	DTF-CT01SG DTF-CT30SG DTF-01SG DTF-30SG DTF-01G	DTS-CT150G DTS-CT180G DTS-T150G DTS-T180G
				DTS-CT300G DTS-300G DTS-T300G DTS-300-T500G DTS-300-T300G	DTW-560G DTW-670G DTR-02G DTR-03G

Technical indicators

The heating and cooling speed is adjustable	Adjustable temperature control rate, free setting temperature rise rate. According to the set temperature rise rate, uniform temperature rise, meet the validation/calibration of various temperature switches.
Active smoke exhaust system (optional)	Active smoke exhaust system to create a healthy working environment. Patented structure design, flexible for a variety of smoke extraction scenarios.
Intelligent rehydration function	Support startup intelligent liquid refill to the ideal level; Simultaneously compatible with manual and automatic refill modes; Real-time monitoring of liquid level, low level alarm automatically stop.
Real-time curve display Automatic calculation of volatility	Real-time curve display, fluctuation automatically calculated. Multi-touch supports free zooming and panning and temperature fluctuation acquisition cycle Supports custom Settings
Composite insulation design	Multi-layer composite heat insulation structure, more effective blocking thermal bridge. Ensure better temperature field stability and volatility
Dual sensor overheat protection	Double sensor overheat protection, automatically cut off the power supply when overtemperature. Independent overheat monitoring hardware, hardware and software double safety protection.
Communication function	Supports USB, WIFI, WLAN, and serial port communication
Stable prompt	With stability prompt function, stable state real-time display
Multipoint correction	Support temperature 12 test point calibration, correction function.
Smart touch screen	Large capacitive screen intelligent control, intelligent human-computer interaction interface, support multi-touch, multi-function window display, intuitive, easy to control.
Anti-oil pollution design	The table adopts integrated operating table with built-in overflow loop to prevent liquid media from polluting the table.
Ergonomic design	Ergonomic design, temperature control screen adopts three-axis mechanical cantilever installation, Angle and length can be adjusted at will, convenient operation.

Model	DTS-CT300G	DTS-CT01G	DTS-CT10G	DTS-CT30G	DTS-CT60G	DTS-CT80G	DTS-CT100CHG
Range	70°C to 300°C	0°C to 105°C	-10°C to 105°C	-30°C to 105°C	-60°C to 105°C	-80°C to 105°C	-100°C to 105°C
Working Medium	L30-300	L15N-95-R		L35N-95-R	L100N-20		L100N-20
Uniformity	Radial	≤0.01°C		≤0.01°C		≤0.01°C	≤0.01°C
	Axial	≤0.01°C		≤0.01°C		≤0.01°C	≤0.01°C
Stability	±0.007°C/10min		±0.01°C/10min		±0.01°C/10min		±0.01°C/10min
Display Resolution	0.001°C		0.001°C		0.001°C		0.001°C
Working area	φ150×480		φ130×480		φ130×480		φ130×480
Volume	23L		18.5L		18.5L		18.5L
Power	3kw		2kw		2.8kw		3kw
Size (DxWxH)	660×540×1120				700×590×1120		800×600×1000
Weight	95kg			115kg		155kg	

Intelligent precision thermostatic bath Accessory list

Specifications	Precision thermostatic oil flange (The opening size can be customized)	Precision low temperature thermostatic flange (hole size support customization)	Working medium
Picture			
Specification	14-hole stainless steel insert disc	17-well epoxy board insert disk	Methyl silicone oil/antifreeze

Product overview

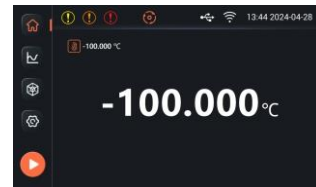
DTS-CH Low temperature calibration bath is a new product developed according to customers' ultra-low temperature sensor detection requirements. Touch screen control and operation, fully intelligent human-computer interface, control is more convenient, simple and practical, to provide users with precision Quasi-constant temperature source, with a wide temperature range, full temperature segment temperature control accuracy, safe to use, very suitable for thermocouples, High precision detection of temperature elements such as thermal resistance.



Product overview

DTW-G Extremely high temperature calibration salt bath is according to user's requirement for on-site validation and developed a new product, it with lab to use standard tank structure are exactly the same, with independent heating system, mixing system and as high as 0.1 original imported from Japan the thermostat, to provide users with accurate high temperature heat source, very suitable for industrial field and laboratory use.

Ultra-Low Temperature Calibration Bath



Operation window (-100°C)



Advanced Settings

Technical indicators

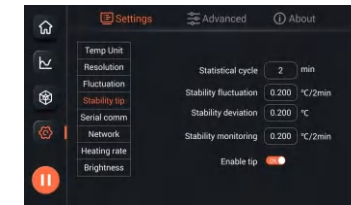
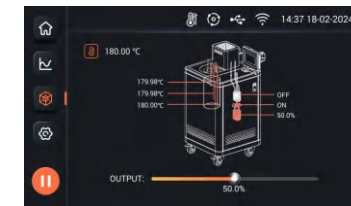
Specifications	Compact type		Ultra-low Temperature Intelligent Precision Temperature Calibration Baths		
	DTS-CT100CH-BG	DTS-CT60CH-BG	DTS-CT100CHG	DTS-CT160CHG	DTS-CT180CHG
Model	DTS-CT100CH-BG	DTS-CT60CH-BG	DTS-CT100CHG	DTS-CT160CHG	DTS-CT180CHG
Range	-100°C to 100°C	-60°C to 100°C	-100°C to 95°C	-160°C to -40°C	-180°C to -40°C
Stability	±0.01°C/10min		±0.01°C/30min	±0.03°C/30min	±0.03°C/30min
Uniformity	≤0.02°C		≤0.01°C	≤0.05°C	≤0.05°C
Size (D×W×H)	464×434×789(mm)		800×600×1000(mm)	500×620×600(mm)	
Working area	φ100×300mm		φ130×480mm	φ12mm×280mm(Support customization)	
Power	220V±5%, 50/60Hz				

DTS-T High and Low Temperature Calibration Bath

DTS-CT300TG Can circulate rapidly to raise and lower temperature oil bath cooling speed, from 300°C to 100°C about 15 minutes, with return measurement function.

Specifications	High and Low temperature Calibration Baths (Precision)		High and Low temperature Calibration Baths (Smart model)		Can recycled rapidly cooling the constant Calibration Baths
	DTS-T150G	DTS-T180G	DTS-CT150G	DTS-CT180G	
Model	DTS-T150G	DTS-T180G	DTS-CT150G	DTS-CT180G	DTS-CT300TG
Range	-20°C to 150°C	-20°C to 180°C	-20°C to 150°C	-20°C to 180°C	70°C to 300°C
	-30°C to 150°C	-30°C to 180°C	-30°C to 150°C	-30°C to 180°C	
Working medium	L40N-180				L30-300
Uniformity	Radial		≤0.01°C		≤0.01°C
	Axial		≤0.02°C		≤0.01°C
Stability	±0.01°C/10min				±0.01°C/10min
Working area	φ130×480(mm)				φ150×480(mm)
Volume	18L				23L

DTW-G Extremely High Temperature Calibration Salt Bath



Technical indicators

Linear Temperature Control	Support linear heating according to the specified rate, meet the verification and calibration of various temperature switches.		
Multi-point Calibration and Correction	Step temperature correction, automatic linear fitting of SV and PV values. PID segmented temperature control, automatic data saving, accurate temperature control.		
Automatic Temperature Control	Automatic heating and stirring control without manual operation.		
Timing Salt	Timing switch machine, automatic on/off operation; The on-off time can be customized to improve work efficiency.		
Communication Function	Support USB, WIFI, WLAN, serial communication, support data upload, export.		
Super large Capacitive Screen	Equipped with large capacitive screen intelligent control, multi-function window display, easy to operate. Stability, real-time display of temperature control curve, real-time calculation of fluctuation, multi-touch free scaling.		
Chinese-english Bilingual Switching	Supports bilingual switching, F, C, Kelvin K and other temperature units custom switching.		
Dual sensor overheat protection	Two independent protection circuits, over temperature automatically cut off the power supply, double safety protection.		
Specifications	Portable high temperature precision salt bath	Laboratory calibration of high temperature precision salt bath	
Model	DTW-560BG	DTW-560G	DTW-670G
Range	180°C to 560°C	180°C to 560°C	450°C to 670°C
Stability	±0.01°C/10min	±0.01°C/10min	±0.01°C/10min
Radial uniformity	≤0.01°C	≤0.01°C	≤0.01°C
Axial uniformity	≤0.02°C	≤0.02°C	≤0.02°C
Working area	φ100×200mm	φ150×400mm	φ150×400mm
Rated power	1kw	3kw	3kw
Remark	Can be customized 500~850°C, 850~1100°C special Calibration Baths		

Product overview

DTF-G Triple point of water maintenance bath is an automatic freezing device composed of constant temperature refrigeration bath and water three-phase point bottle support. Imported compressor is adopted to realize automatic control of freezing and preservation. It is suitable for measurement, biochemical, petroleum, meteorological, energy, environmental protection, medicine and other departments and manufacturers of thermometers, temperature controllers to carry out physical parameters testing, and can provide constant temperature source for other experimental research work.



Product overview

DTS-G Precision calibration bath is a kind of high precision automatic digital display temperature verification device, which has good temperature stability. The temperature field is uniform and the temperature control precision is high. Precision temperature control meter supports automatic control, compact structure, easy operation, and intuitive tank temperature reading.

DTF-G Triple Point of Water Maintenance Bath



Water Triple Point Bottle

Technical indicators

Three uses for one slot	Automatic freezing, Three uses for one slot (water three-phase point freezer, water three-phase point bottle preserver, refrigeration thermostatic bath)			
Large capacitive screen intelligent control	Intelligent human-computer interface, multi-function window display, easy to operate, intuitive.			
Stability tip	With stability tip function, metering personnel do not need to repeatedly check the equipment status, stable state real-time display.			
Multipoint correction	Temperature multi-point calibration, correction, to ensure that the thermostat temperature control and standard consistent, to achieve the minimum deviation.			
Communication Function	Support USB, WIFI, WLAN, serial communication, support data upload, export.			
Automatic calculation stability	Stability is calculated automatically and temperature control curve is displayed in real time.			
Three axis mechanical cantilever	The intelligent touch screen is mounted with a three-axis mechanical cantilever, and the Angle is adjusted at will, which is convenient for metering personnel to view the equipment status at any Angle.			
Model	DTF-CT01SG	DTF-01SG	DTF-CT30SG	DTF-30SG
Control mode	Smart touch screen	Temperature control instrument	Smart touch screen	Temperature control instrument
Range	-10°C to 105°C		-30°C to 105°C	
Stability	±0.005°C/10min(@0°C)			
Uniformity	Radial	≤0.01°C		
	Axial	≤0.01°C		
Frozen system time	120min			
Retention time	≥6H			
Working medium	L15N-95-R			
Working area	φ130×480(mm)			
Volume	18.5L			
Frozen system number	1~3			
Power	2kw			
Size	660mm(L)×540mm(W)×1120mm(H)			
Weight	95Kg			

DTS-G Precision Calibration Bath

Product characteristics

- The working mode of double - chamber side agitation has good temperature field uniformity.
- Intelligent PID control, with good temperature field stability and uniformity.
- Adopt high resolution display instrument, resolution 0.001°C.
- Imported compressor, stable and reliable performance, optimized refrigeration system cooling faster.
- RS-232 / RS-485 communication interface optional, can realize computer control.
- Humanized design is comfortable and convenient to operate.



Specifications	Oil bath	Water bath	Precision Calibration Baths					
			DTS-01G	DTS-10G	DTS-30G	DTS-60G	DTS-80G	DTS-100CHG
Model	DTS-300G	DTS-95G	DTS-01G	DTS-10G	DTS-30G	DTS-60G	DTS-80G	DTS-100CHG
Range	70°C to 300°C	RT+10 to 95°C	0°C to 105°C	-10°C to 105°C	-30°C to 105°C	-60°C to 100°C	-80°C to 100°C	-100°C to 95°C
Working medium	L30-300	L15N-95-R	L15N-95-R		L35N-95-R	L100N-20		
Uniformity	Radial	≤0.01°C	≤0.01°C					
	Axial	≤0.01°C	≤0.01°C					
Stability (10°C/min)	±0.007°C /10min	≤0.01°C/10min		±0.01°C				
Working area	φ150×480 (mm)		φ130×480 (mm)					
Volume (L)	23 (L)			18.5				
Size	660 (L) ×540 (W) ×1120 (H) (mm)					700×590×1120		800×600×1000
Power	3kw		2kw		2.8kw	3kw		3kw
Weight	94kg		95kg		115kg	155kg		200kg

Super Large Diameter Calibration Bath

Work area dimensions	φ300×480 (Support special customization)		φ500×480 (Support special customization)	
Model	DTS-300-T300G	DTS-80-T300G	DTS-300-T500G	DTS-80-T500G
Range	70°C to 300°C	-80°C to 95°C	70°C to 300°C	-80°C to 95°C
Uniformity	≤0.01°C		≤0.01°C	
Stability (10°C/min)	±0.01°C/30min		±0.01°C/30min	
Volume (L)	38L	38L	130L	130L
Power supply	380V	220V	380V	220V
Note	Supports customized smart touch screen models			

DTL Thermocouple Calibration Furnace Series



Product overview

DTL-G Thermocouple calibration furnace is a temperature field constant temperature equipment for the validation of various types of standard thermocouple, precious metal thermocouple and inexpensive metal thermocouple. This series of products have the advantages of good heat preservation, anti-leakage and so on. The technical indexes of the temperature field are in full compliance with the technical requirements of the relevant national validation regulations and specifications. At the same time, our company can provide non-standard customization for customers.

Product selection table

NO	Specifications	Model	Aange (°C)	Chamber size (mm)	Note
1	Standard Thermocouple Calibration Furnace	DTL-600BG	300 to 1200/1300	φ20×600	Temperature range and furnace size can be customized as required
2	Low-cost Thermocouple Calibration Furnace	DTL-600G	300 to 1200/1300	φ40×600	
3	Precious meta Thermocouple Calibration Furnace	DTL-600EG	300 to 1300		
4	Thermocouple Calibration Furnace-Custom Made	DTL-600TG	300 to 1200	φ60×600	
5	Short Type Low-cost Calibration Furnace	DTL-300G	300 to 1200/1300	φ40×300	
6	Short Type Precious meta Calibration Furnace	DTL-300BG	300 to 1300	φ20×300	
7	Ultra short Thermocouple Calibration Furnace	DTL-150G	300 to 1200	φ40×150	
8	High Temperature Thermocouple Calibration Furnace	DTL-HG	800 to 1700	φ30×600	
9	Thermocouple Annealing Furnace	DTL-TG	300 to 1200	φ40×1000	
10	Multi-temperature Zone Precision Thermocouple Calibration Furnace	DTL-IIIG	300 to 1200	φ40×1000	



Thermocouple Calibration Furnace



Short Type Low-cost Calibration Furnace



Thermocouple Annealing Furnace

Specifications	Low-cost Thermocouple Calibration Furnace		Standard Thermocouple Calibration Furnace			Thermocouple Annealing Furnace
	Calibration Furnace	Short Type Calibration Furnace	S-type standard furnace	Type S working Calibration Furnace	Short S Type working Calibration Furnace	
Range	300°C to 1300°C		300 °C to 1300°C			300°C to 1200°C
	300°C to 1200°C		300°C to 1200°C			
Chamber size (mm)	φ40×600	φ40×300	φ20×600		φ20×300	φ40×1000
Temperature field distribution	Equipped with temperature equalization block, the effective working area within 30mm axis, the temperature difference between any two points is not more than 0.5°C, the radial radius is not less than 14mm, the absolute temperature difference between any two points of the same section is not more than 0.25°C.	Temperature equalizing block is configured, and the ratio between the depth and the aperture of the thermocouple inserted into the temperature equalizing block is greater than 10:1, and the axial internal temperature is 30mm from the bottom of the hole The difference is not more than 0.5°C.	The ±20mm long isothermal zone is located in the center of the calibration furnace, and the temperature gradient in the isothermal zone is ≤0.4°C/cm.	The highest point of temperature in the calibration furnace deviates from the geometric center of the furnace by no more than 20mm, and the temperature within the highest point of temperature ±20mm Uniform temperature field with gradient ≤0.4°C/10mm.	The maximum temperature is in the axial geometric center, the deviation is not more than 10mm, and the furnace center is 20mm from the axial geometric center Within the range, the axial temperature gradient does not exceed 0.4°C/10mm.	One end of the uniform temperature field is less than 100mm away from the furnace, and the length of the uniform temperature field is greater than 400mm at ±20°C.
Rules and regulations for implementation	“JJF1184-2024 Technical specification for temperature field test of thermocouple Calibration Furnace” “JJF1637-2017 Calibration specification for low cost metal thermocouples” “JJF 1262-2010 Calibration specification for armoured thermocouples” “JJG141-2013 Validation regulation of precious metal thermocouple for work” “JJG75-2022 Verification regulation of standard platinum-rhodium 10-platinum thermocouple” “JG668-1997 validation regulation of working (Platinum-rhodium 10-Pt, Platinum-rhodium 13-PT) Short thermocouple” “JJG167-95 validation regulation of standard Platinum-rhodium 30-Platinum-rhodium 6 thermocouple”					

DTL-HG High Temperature Thermocouple Calibration Furnace

Product overview

Type high temperature thermocouple Calibration furnace replaces the original high temperature thermocouple Calibration furnace heated by metal material on the market. It has the advantages of long service life and stable temperature field, and its technical indicators fully meet the technical requirements of the existing domestic regulations and specifications. It is an ideal equipment for the transfer of quantity value in the validation of high temperature B-type thermocouple. Executive regulation: validation regulation of JJG141-2013 Precious Metal Thermocouple for work and validation regulation of JJG167-1995 standard Platinum-rhodium 30-platinum-rhodium 6 Thermocouple.

Technical indicators

Model	DTL-H1600G	DTL-H1700G
Range	800°C to 1600°C	800°C to 1700°C
Temperature field indicators	The highest point of temperature is no more than 20mm away from the geometric center of the furnace, and the highest point ±20mm has a uniform temperature field with a temperature gradient ≤0.5°C/10mm.	
Power	3.0KW	
Working current	70A	
Rated voltage	AC220V / 50HZ	
Chamber diameter	φ30mm×600mm (Furnace size can be customized)	
Equipped with independent special control cabinet		
With current limiting function, with continuous current protection function: prolong the life of the controller.		
Equipped with emergency stop button, can manually stop the work of the equipment.		
Automatic temperature control: after startup, automatic temperature control without manual intervention.		
With overcurrent protection, limit the upper current, protect the heater, avoid the moment of startup low impedance caused by heating overload.		



Multi-temperature Precision Thermocouple Calibration Furnace/Ice Point Dry Well Calibrator



DTL-IIIG Multitemperature precision thermocouple validation furnace			
Model	Annealing mode	Long furnace model	Short furnace model
Highest temperature	1200°C	1200°C	1200°C
Uniform temperature field	Maximum operating temperature 1100°C, uniform temperature field 400mm±20°C (end furnace mouth end 100mm)	The radial temperature field was 28mm<0.25°C, the axial temperature field was 30mm, and the temperature gradient was <0.5°C	40mm/8°C, Temperature gradient 0.4 °C/10mm
Power	2KW	2KW	1.5KW
Rated current	10A	10A	8A
Overall dimensions	620×260×300(mm)		

Specifications	DTBH Ice Point Dry Well Calibrator	
Model	DTBH-01G	DTBH-03G
Accuracy	0°C±0.05°C	0°C±0.03°C
Display resolution	0.001 °C	
Stability (30 min)	0.03°C/30min	
Depth of insertion aperture	205mm	
Measure the number and aperture of holes	7×φ9	
Environment temperature	5°C~30°C	
Relative humidity	10%RH~80%RH	
Overall size (mm)	360×125×310	

Humidity calibration

Product selection navigation chart

Super Size Intelligent Temperature And Humidity Calibration Chamber



- DTLH-2RHG Humidity range : 5%RH to 95%RH
Temperature range: -46°C to 80°C
- DTLH-G Series Humidity range : 10%RH to 95%RH
Temperature range: -46°C to 80°C
- **DTLH Pro** Unattended - Digital Thermohygrometer Automatic Calibration System
- DTSL Pro** Unattended - Mechanical Thermohygrometer Automatic Calibration System

Standard Intelligent Temperature And Humidity Calibration Chamber



- DTLH-1RHG Humidity range : 5%RH to 95%RH
Temperature range: -8°C to 70°C
- **DTLH-G Series** Humidity range : 10%RH to 95%RH
Temperature range: -8°C to 70°C

High Precision Temperature Chamber



- DTWL-46G Temperature range: -46°C to 65°C/70°C/80°C
- DTWL-30G Temperature range: -30°C to 65°C/70°C/80°C
- DTWL-25G Temperature range: -25°C to 65°C
- DTWL-20G Temperature range: -20°C to 65°C
- DTWL-15G Temperature range: -15°C to 65°C
- DTWL-8G Temperature range: -8°C to 65°C
- Custom style High precision temperature and humidity integrated chamber

Portable Humidity Generator



- TADT-1G Portable humidity generator (5L)
- TADT-2G Portable humidity generator (9L)
- TADT-3G Portable humidity generator (1.3L)

Product overview

DTLH-G Intelligent Temperature Humidity Calibration Chamber is used to detect thermohygrometer, temperature and humidity sensor, temperature and humidity transmitter, temperature and humidity inspection instrument, temperature and humidity recorder, temperature and humidity storage and other principles of temperature and humidity meter calibration special validation equipment. The equipment can provide continuous, repeatable humidity measurement, suitable for scientific research and product testing fields.

DTLH Ultra low Temperature Intelligent Calibration Chamber



APP Curve Display



Control Interface

Blockbuster recommended

Temperature range

-46°C to 80°C

The Whole line of products can be upgraded to automatic validation system

- Intelligent Programming
- Intelligent Defrost
- Real-time Curve Display
- Data Recording Function
- Remote Control
- Stability Prompt
- Mobile APP Software
- Automatic Correction/Calibration

Certificate of patent for utility model Registration certificate of software copyright

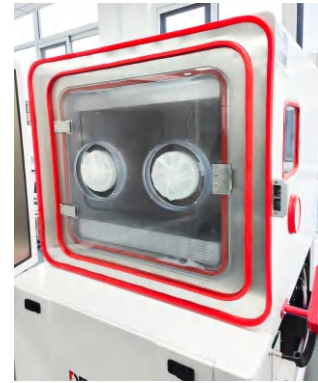




Intelligent Temperature Humidity Calibration Chamber (Standard)



Intelligent Temperature Humidity Calibration Chamber (Super size)



Custom - Support double set of hole transparent inner door design

Procedures, norms, standards for implementation

- “JJF1076-2020 Calibration specification for digital hygrometer”
- “JJG205-2005 Specification for the validation of mechanical hygrograph”
- “JJF1564-2016 Calibration specification for temperature and humidity standard chamber”
- “JJF (Military) 165-2017 Calibration specification for digital hygrometer”

Product features

Advanced technology

- Humidity control adopts the principle of shunt humidity generation. Compared with the principle of double temperature humidity generation, it can greatly shorten the time needed for stability and improve validation efficiency.
- Temperature control using liquid bath constant temperature plate heating technology, liquid medium heat radiation, more constant temperature, more uniform temperature field.
- Measuring cavity inside the unique wind circulation design, to ensure no dead air flow; Frequency conversion technology is used to speed the fan to ensure the uniformity of internal temperature field at low speed.

Product intellectualization

- The measurement technology and the Internet of things technology integration, wifi remote control, so that the measurement is easier.
- Hd touch screen control, multi-touch, greatly improve user experience.
- One-button start, automatic control, shorten the training cycle for metering personnel.
- Timing switching machine, remote switching machine, saving time, improve validation efficiency.

Excellent quality

- The shell adopts thick plate phosphating, passivation and plastic spraying; Corrosion resistance, rust resistance, salt spray resistance.
- SUS304 is used in the tank.
- High precision sensor, using imported high precision platinum resistance, Rotronic humidity sensor for temperature and humidity control.
- **Support customization: Built-in high permeability vacuum glass door, with 2 glove operating holes**

Can be upgraded to automatic validation system

- With intelligent image acquisition system, dew point meter, industrial camera, camera robot and database management software, it can be upgraded to automatic validation system of intelligent temperature and humidity meter to realize automatic validation process. Records are automatically saved and reports are automatically generated. The measurement personnel from the temperature and humidity meter reading record from the liberation of the work, greatly improve the validation efficiency, reduce labor costs.

Product functions

Hd touch screen

Adopt high resolution capacitive screen, display more clearly, support multi-touch, in line with customers' mobile phone touch operation habits.

Wifi Control

Mobile phone /pad remotely sets the temperature and humidity, starts and stops the device, and reads the current temperature and humidity value and fluctuation.

Programming function

With multi-stage programming function, the 5 temperature and humidity calibration points specified in the relevant calibration specifications can be programmed into the validation box in advance, which can be started with one key and run in sequence without repeated input of temperature and humidity.

Rate of change prompt

Displays the temperature and humidity change rates. The measurement period of the change rate can be set in the system Settings.

Status indicators

Real-time calculation of temperature and humidity fluctuation display, stable state prompt, USB disk insertion detection, wifi connection prompt.

Curve shows

The temperature and humidity curves can be displayed in real time. Touch, zoom, and translation are supported. The curves can be captured and saved to a USB flash drive with one key.

Data records

Temperature and humidity data is automatically saved in XLS format and exported to usb flash drive with one click.

Timing boot

The system has the function of timing boot, which can realize the timing boot before work and immediately start work after work without waiting.

Multi-point calibration

Supports multi-point calibration of t/H sensors. The values of temperature and humidity sensors can be modified in different stages to ensure that they are consistent with those of the dew point tester.

Subsection control

Temperature and humidity adopt segmented PID control scheme, fast and stable, "zero" overshoot, fast and stable humidity from 40%RH to 60%RH only 15 minutes.

Fan speed control

The main circulating fan in the cavity is controlled by frequency conversion. The fan speed can be set by touch screen.

Multiple protection alarm

Overheat protection, liquid level alarm
Reminder of water shortage in refill tank
Compressor overheating alarm, start and stop protection function

Communication extension

With network port, wifi interface, USB interface, RS-232 interface, can communicate with PC, data reading, system setting.



Main interface of mobile APP



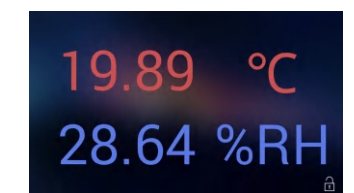
Touch screen curved interface



Programming setting interface



Real-time display of temperature change rate and steady state



Large screen display

DTLH Intelligent Temperature Humidity Calibration Chamber

Specifications	Intelligent Temperature Humidity Calibration Chamber (Standard)		Intelligent Temperature Humidity Calibration Chamber (Super size)		
Model	DTLH-15BG	DTLH-18BG	DTLH-25BG	DTLH-28BG	DTLH-215BG
Temperature range	-5°C to 65°C	-8°C to 65°C	-5°C to 65°C	-8°C to 65°C	-15°C to 65°C
Temperature resolution	0.01°C		0.01°C		
Humidity range	10%RH to 95%RH(@20°C)		10%RH to 95%RH(@20°C) (Support for custom)		
Humidity resolution	0.01%RH		0.01%RH		
Temperature stability	±0.1°C (@15°C,20°C,30°C)		±0.1°C (@15°C,20°C,30°C)(Support for custom)		
Temperature uniformity	≤0.25°C (@15°C,20°C,30°C)		≤0.2°C (@15°C,20°C,30°C) (Support for custom)		
Humidity stability	±0.8%RH (@20°C)		±0.5%RH (@20°C) (Support for custom)		
Humidity uniformity	≤1.0 %RH (@20°C)		≤0.8%RH (@20°C; 10 %RH to 80%RH) ; ≤1.0 %RH (@20°C ; 80%RH to 95%RH)		
Internal chamber dimensions	520mm×510mm×500mm		820mm×800mm×510mm		
Exterior dimensions	1800mm(H)×785mm(W)×965mm(T)		1730mm(H)×1045mm(W)×1300mm(H)		
Weight	350Kg		450Kg		
Intelligent programming function	With multi-stage programming function, support the common temperature and humidity calibration points to be programmed into the validation chamber in advance, one-button start (timing start), automatic execution in order; There is no need to set the temperature and humidity point repeatedly every time.				
Phone controls (WiFi Control)	Equipped with mobile phone APP software, support mobile phone remote control temperature, humidity validation; Real-time reading of temperature, humidity and equipment running status; Remote setting of temperature and humidity values; Remote start and stop temperature and humidity validation chamber; Liberate metering personnel and improve work efficiency.				
PC Remote control (Network Port /WiFi/ Serial Port)	Equipped with computer software (optional), support computer remote control, real-time reading temperature, humidity value and running status; Supports remote setting of temperature and humidity values. Remote start and stop temperature and humidity validation chamber; Liberate metering personnel and improve work efficiency.				
Automatic calculation of volatility	1. With the function of automatic real-time calculation of fluctuation, automatically judge the stable state of the validation chamber. 2. Support free setting of volatility calculation cycle (1min, 5min, 10min, 20min, 30min).				
Stable prompt	With intelligent stability prompt function, according to temperature, humidity deviation, fluctuation, stability time and other parameters, automatically judge the stable state.				
Maintenance prompt	Support automatic anti-rust maintenance of internal proportional valve, atomizer and other parts of the equipment, and automatically prompt maintenance period and spare part replacement period when the maintenance period expires, so as to reduce user requirements.				
Curve scaling function (Curve saving)	Capacitive touch screen, support multi-touch, freely drag zoom, view local and overall curve details, intuitive view temperature and humidity changes. Curves support one - key screenshot save into picture format, as maintenance, data process records.				
Segmented PID control	Temperature and humidity support multi-pid control design, different temperature and humidity points adopt different control parameters, to ensure that each temperature and humidity point of the equipment can achieve optimal control, fast and stable, better temperature control effect (small overshoot, rapid adjustment, small fluctuation).				
Data logging/export	With storage and USB interface output function, support automatic recording of the operation data of the validation box, temperature and humidity curve data, automatic formation of EXCELTable, and one - key export to U disk.				
Curve shows	Real-time display curve data, and support automatic zoom in and out, view the details of the data.				
Multiple protection	Compressor start and stop, overheat protection (overtemperature protection), dry burning protection, low liquid level warning, water reminder, automatic liquid filling can be multiple protection functions.				
Multipoint correction	Correction point range is wide, the deviation is smaller, and the linearity is good.				
It has the function of inverter fan, timing startup, and can be upgraded to automatic temperature and humidity validation system.					
Display	7 "HD touch screen				
Viewing window/ Operating hole	Three viewing Windows and two operating holes				
Composition	Shell	Pickling coating			
	Tank	SUS304 drawing			
	Seal	Medical grade silica gel			
	Glass	3C certified 5 layers of vacuum high permeability tempered glass			
Power Supply And Input	AC220V±5% 50Hz Peak power 5KW, typical power 3KW				

DTLH Low Temperature Intelligent Standard Chamber

Model	DTLH-220BG	DTLH-225BG	DTLH-230BG	DTLH-240BG	DTLH-246BG
Temperature range	-20°C to 65°C	-25°C to 65°C	-30°C to 80°C	-40°C to 65°C/70°C/80°C	-46°C to 65°C/70°C/80°C
Temperature resolution	0.01°C				
Humidity range	10%RH to 95%RH(@20°C)(Selectable 5%RH to 95%RH)				
Humidity resolution	0.01%RH				
Temperature stability	±0.1°C (@15°C,20°C,30°C)				
Temperature uniformity	≤0.3°C (@15°C,20°C,30°C)				
Humidity stability	±0.8%RH (@20°C)				
Humidity uniformity	≤1.0 %RH (@20°C)				
Internal chamber dimensions	620×780×500 (mm)				
Exterior dimensions	1700×1400×1000 (mm)				
Weight	450Kg				
Display	7 "HD touch screen				
Viewing window/Operating hole	Three viewing windows and two operating holes				
Composition	Shell	Pickling coating			
	Tank	SUS304 drawing			
	Seal	Medical grade silica gel			
	Glass	3C certified 5 layers of vacuum high permeability tempered glass			
Power Supply And Input	AC220V±5% 50Hz Peak power 5KW, typical power 3KW				

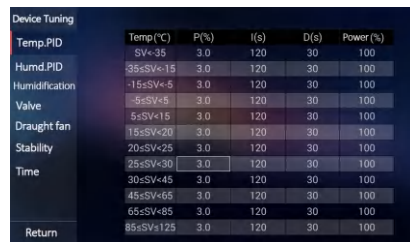
DTLH-RH Low humidity

Specifications	Standard		Super size					
Model	DTLH-1RH-5G	DTLH-1RH-8G	DTLH-2RH-8G	DTLH-2RH-15G	DTLH-2RH-20G	DTLH-2RH-30G	DTLH-2H-40G	DTLH-2H-46G
Temperature range	-5°C to 65°C	-8°C to 65°C	-8°C to 65°C	-15°C to 65°C	-20°C to 65°C	-30°C to 65°C	-40°C to 70°C	-46°C to 80°C
Temperature resolution	0.01°C		0.01°C		0.01°C			
Humidity range	5%RH to 95%RH		5%RH to 95%RH		5%RH to 95%RH			
Humidity resolution	0.01%RH		0.01%RH		0.01%RH			
Internal chamber dimensions	520×510×500 (mm)		820×800×510 (mm)		620×780×500 (mm)			
Exterior dimensions	1780×820×965 (mm)		1730×1045×1300 (mm)		1700×1400×1000 (mm)			
Weight	350Kg		450Kg		450Kg			
Temperature stability	±0.1°C (@15°C,20°C,30°C) (Support For Custom)							
Temperature uniformity	≤0.3°C (@15°C,20°C,30°C)(Support For Custom)							
Humidity stability	±0.8%RH(@20°C) (Support For Custom)							
Humidity uniformity	Low Humidity≤0.8 %RH(@20°C)							
Display	7 "HD Touch screen							
Viewing window /Operating hole	Three viewing Windows and two operating holes							
Composition	Shell	Pickling coating						
	Tank	SUS304 drawing						
	Seal	Medical grade silica gel						
	Glass	3C certified 5 layers of vacuum high permeability tempered glass						
Power supply and input	AC220V±5% 50Hz Peak power 5KW, typical power 3KW							

Product overview

DTSL Pro-svr3 Fully automatic temperature and humidity meter calibration system is a new fully automatic thermo-hygrometer photo identification and calibration system independently developed by DEARTO. The system is a fully automatic calibration device composed of DEARTO's full range of temperature and humidity calibration chambers, precision dew point meters, precision digital thermometers, camera robots and automatic identification systems.

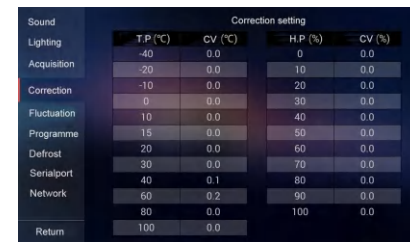
Intelligent application



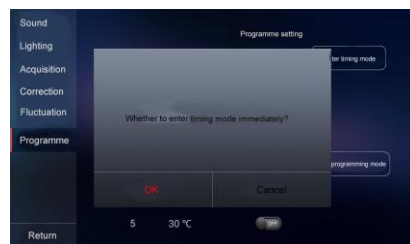
Segmented PID control



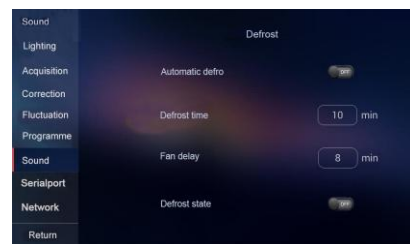
Device is self-tuning



Multipoint temperature and humidity correction



Timing mode



Intelligent defrost



Low level detection

Etalon selection :

Specifications	Picture	Model	Temperature range	Display resolution	Precision
Precision dew point meter		DT-ACG	-40°C~60°C	0.01°C	±0.2°C (Optional 0.1°C)
		Optidew 401	-40°C~90°C	0.01°C	Temperature: ±0.1°C Dew point: ±0.15°C
		Dewstar R-1	-40°C~60°C	0.01°C	±0.15°C
Digital thermometer		DTSW-LcG	-30°C~150°C	0.001°C	±0.05°C

Accessory selection

Name	Hook	Shelves	Attachment
Picture			
Choose and buy information	Standard	Standard	Standard

Name	Temperature and humidity meter	Rack	Instrument car
Picture			
Choose and buy information	Optional	Optional	Optional

DTSL Pro Temperature Humidity Automatic Calibration System



- Unattended -
- Automatic positioning
- Automatic photo
- Automatic collection
- Automatic identification
- Automatic calculation
- Automatic judgment

Product Overview

DTSL Pro-svr3 fully automatic thermo-hygrometer calibration system supports automatic positioning, automatic photography, automatic collection, automatic identification, automatic calculation, and automatic judgment. It can complete the entire calibration process automatically without manual intervention and can realize unattended detection mode. This device can automatically control the temperature and humidity of the calibration chamber, monitor the temperature and humidity values of the calibration box in real time through a dew point meter, and automatically make stability judgments. After meeting the stable conditions, the system automatically controls the camera robot, data collection device, automatic identification system, temperature and humidity calibration box, precision dew point meter, etc. to position them in sequence to the thermometer being tested. It has a built-in intelligent rotation positioning device that automatically receives the controller signal and realizes data automation. Collect, take photos, archive and automatically identify the temperature and humidity values, and automatically enter them into the host computer. Based on the inspection of the calibration points, the calibration results and calibration conclusions are automatically calculated.

Main implementation of calibration regulations

- "JJG 205-2005 Calibration Regulations for Mechanical Thermo-hygrometer"
- "JJF 1076-2020 Calibration Specifications for Digital Thermo-hygrometer"
- "JJF 1564-2016 Calibration Specifications for Temperature and Humidity Standard Chamber"

System characteristics

Unattended - fully Automatic Verification/Calibration

Complete the whole verification process automatically, without manual intervention, improve efficiency and reduce labor costs; Automatic control of multiple temperature points and humidity points, automatic positioning and photo recognition, automatic calculation of verification results and conclusions, to achieve intelligent control of equipment.

Stable Performance, Data Security And Reliability

The system uses a high-definition camera to take photos, uses artificial intelligence and software-specific algorithms to automatically identify temperature and humidity values, and archives the original pictures and identification data, which is more stable and reliable. Avoid manual reading errors, deviations, and data can not be reviewed

Artificial Intelligence learning System

The biggest advantage of the system is that it has automatic learning ability, and the automatic recognition part has an independent upgrade module. The new temperature and humidity table only needs to provide pictures, and after training, it can realize automatic recognition.

High Recognition Efficiency

The temperature and humidity calibration chamber is gradually controlled according to the set calibration point. After the calibration point is stabilized, it automatically collects data according to the set stabilization time. During the whole calibration process, the photo identification time can be basically ignored compared with the temperature and humidity control and stability time.

Database Management Software

Input the information of the inspection list into the database management software, select the temperature and humidity table to be calibrated, perform automatic arrangement and combination, and hang the instrument to be checked on the corresponding hole of the positioning bracket in the calibration chamber. By setting the control point through the main controller and opening the working mode, the identification data and images can be automatically identified and uploaded. In the database management software can be executed to edit, query, delete, and export Office documents, to achieve data electronic document storage.

Function characteristic

The software uses MySQL database, can realize the network and external online testing, applied to laboratory data management in different locations, to achieve data sharing and multi-machine operation.

The database management software can use the image scanning and input function to automatically input the effective information of the inspection list into the information bar, which is convenient and quick to operate and reduces the tedious workload.

The database operation software can import the original verification data into excel documents and establish the traceability of the data.

Intelligent analysis of temperature and humidity meter attributes (digital display, pointer), identification and display of effective information, to facilitate the analysis and judgment of the inspector.

Dedicated software system features

Fully Automatic Temperature And Humidity Control

Support setting multiple temperature and humidity verification points, automatic temperature and humidity control and photo validation

Compatible With Different Types Of Standards

Support multi-brand precision dew point meter and precision digital thermometer, the system automatically collects the standard data.

Dual Positioning

Supports both automatic and manual positioning modes. Built-in intelligent rotating positioning device, automatically receive the controller signal, automatically adjust the relative position, to achieve automatic data Capture, photograph and archive.

Automatic Completion Of The Entire Verification Process

Support automatic calibration according to the set value, automatic photo, automatic identification, automatic entry of test data, after the completion of all calibration points, Automatic calculation, automatic judgment, to achieve unattended automatic verification.

Data Review Function

Manual review of verification data is supported. Users can check the temperature and humidity values in photos through the data processing module, and modify the temperature and humidity values in the input box. The system automatically updates the calculation results.

Customize The Report Function

Support verification record preview and printing; Support export verification records, generate Excel files and make custom modifications.

Modular Database Management

The product attribute information, calibration data and image data can be digitally archived, and all data can be saved to the database management software.

Unified Management Of Product Information

Support unified management of products submitted for inspection, support batch entry of product information submitted for inspection (including: quantity submitted, instrument number, instrument name, model specifications, manufacturer, accuracy and measurement range, unit name, unit address, etc.).

System Software Operation Interface



Operating main interface



Automatic data collection interface



Automatically determine the verification results



Item selection interface

A variety of working modes can be provided to support customized selection according to different needs and working scenarios.

DTSL Pro fully automatic temperature and humidity meter calibration system allows customers to customize the working mode according to different usage needs and different working scenarios.

Mode 1: Unattended-automatic Photo Taking System (DTSL Pro-svr2) : The system automatically controls temperature and wet, and monitors temperature and humidity values by real-time monitoring by dew-point instruments. To meet the stable conditions, automatically control the camera robot and the camera to locate each inspection thermometer in turn, and take pictures and archive. After all the verification points are completed, you only need to enter the inspection data, and the system automatically calculates the verification results, and gives the verification conclusion.

Mode 2: Automatic Control Calibration System (DTSL Pro-svr1) : The system automatically controls temperature and wet, and monitors temperature and humidity values by real-time monitoring by dew-point instruments. After stability, the standard data is automatically collected. The user can manually enter the verification data. After the verification is completed, the verification results are automatically calculated to give the verification conclusion.

Mode 3: Data Processing Calibration System (DTSL Pro-svr0) : Set the temperature and humidity independently. After the device is stable, manually enter the data inspection data, and automatically calculate the verification results after the entry is completed. (Remarks: The average value of the calculation of the mechanical temperature and humidity meter is calculated twice, and the average value of the digital temperature and humidity meter is determined three times.)

Main function selection for multiple working modes

No	Function list	Unattended - fully automatic photography and identification system	Unattended-automatic photo taking system	Automatic control Calibration system	Data processing Calibration system
1	Software model	DTSL Pro-svr3	DTSL Pro-svr2	DTSL Pro-svr1	DTSL Pro-svr0
2	Automatic temperature and humidity control	●	●	●	
3	Dew point meter automatic control	●	●	●	
4	Automatic positioning	●	●		
5	Automatic taking photos	●	●		
6	Automatic collection	●	●		
7	Automatic Identification	●			
8	Automatic calculation	●	●	●	●
9	Automatic judgment	●	●	●	●
10	Export verification records	●	●	●	●

Product overview

DTWL-G High-precision thermostat is a special designed thermostat with air as heat transfer medium. It has high accuracy of temperature control, good uniformity of temperature field and low fluctuation. There are many temperature measuring instruments which can not touch the liquid constant temperature source and are not suitable for calibration in the liquid constant temperature bath. The emergence of high-precision thermostat solves the calibration problem of such instruments, fills the blank of the constant temperature source, and provides a complete solution for the calibration of temperature measuring instruments.



Product overview

TADT-G Portable humidity generator is a portable, high-precision temperature and humidity calibration instrument, which can meet the requirements of temperature and humidity sensors, temperature and humidity transmitters, small temperature and humidity meters and other conventional temperature and humidity measurement instruments.

DTWL High Precision Thermostatic Chamber



Product features

Adopting constant temperature liquid bath technology, the temperature field is more constant: The temperature control adopts the heating technology of liquid bath isothermal plate. After controlling the liquid medium in the constant temperature tank to the constant temperature state, it circulates around the working chamber. By means of thermal radiation, the temperature of the working chamber is guaranteed to be constant and even.

Meet "JJF1407-2013 Index Instrument Thermometer Calibration Specification"

Meet "JJF1366-2012 Temperature data acquisition instrument calibration specification"

High precision air bath constant temperature source

High-precision temperature control sensor with high-quality temperature control table for high-precision temperature control and low indication deviation.

Technical indexes

Model	DTWL-46G	DTWL-30G	DTWL-25G	DTWL-20G	DTWL-15G	DTWL-08G
Range	-46°C to 65°C / 70°C / 80°C	-30°C to 65°C / 70°C / 80°C	-25°C to 65°C	-20°C to 65°C	-15°C to 65°C	-8°C to 65°C
Uniformity	0.3°C, 0.2°C, 0.1°C, 0.05°C (Support on-demand selection)					
Stability	0.05°C/10min					
Working size	620(H)mm×780(W)mm×500(T)mm					
Dimensions	1700(H)mm×1400(H)mm×1000(H) mm (Support customization)					
Features	High-definition touch screen: adopts high-resolution capacitive screen, the display is clearer, multi-touch support, in line with the customer's mobile phone touch operation habits.					
	Wifi control: mobile phone/pad remotely set the temperature, start and stop the device, read the current temperature value and fluctuation degree and other device status.					
	Status prompt: real-time calculation and display of temperature fluctuations, prompts for reaching a stable state, detection of U disk insertion, and prompts for wifi connection.					
	Curve display: real-time display of temperature curve, support for touch zoom and pan operation, one-key screen capture and save the curve to U disk.					
	Data recording: temperature data is automatically saved in xls format and exported to U disk with one click.					
	Timing startup: The system has a timing startup function, which can realize the timing startup of the equipment before going to work, and start working immediately after going to work, without waiting.					
	Multi-point calibration: supports multi-point calibration of temperature and humidity sensors, and can perform segmented multi-point corrections on temperature sensors and displayed values to ensure consistency with the standard.					
	Sectional control: The temperature adopts a sectioned PID control scheme, which is fast and stable, and "zero" overshoot.					
	Fan speed control: the main circulating fan in the inner cavity adopts frequency conversion speed control, and the fan speed can be set through the touch screen.					
	Multiple protection alarms: constant temperature bath overheating protection, liquid level alarm/compressor overheating alarm, start-stop protection function					
Communication expansion: with network port, wifi interface, USB interface, RS-232 interface, it can communicate with PC to realize data reading and system setting.						

TADT-G Portable Humidity Generator



TADT-1G (Volume: 5L)



TADT-3G (Volume: 1.5L)

Product features

- The test chamber space can reach (3-5) times of similar products, providing more efficient test conditions.
- The test chamber can accommodate various types of cold mirror dew point probe for comparison and calibration.
- Combined sensor jack design, suitable for various diameter temperature and humidity sensors and transmitters.
- The transparent window and lighting design of the measuring room facilitate the reading of various small temperature and humidity meters.
- Can be calibrated at the same time (10~15) small temperature and humidity probe.
- Can be calibrated at the same time (3-5) block of conventional size digital hygrometer.
- The test chamber provides temperature uniformity within 0.1 °C in the full range of 5°C to 50°C.
- External hanging dryer design, desiccant replacement can be operated online under the state of boot, convenient and simple.
- Double zone drying cylinder design, support molecular sieve and color changing silica gel two kinds of desiccant.
- Intuitive display of liquid level and dryer status, conducive to the working process of state monitoring.
- Provide 4 channels external (0~1) V, (0~5) V and (4~20) mA standard signal input.
- The instrument built-in humidity conversion software, convenient user relative humidity, temperature and dew point temperature conversion.
- Temperature and humidity curve display helps you view the temperature and humidity trend.
- 7 inch color LCD touch screen.

Technical indicators

Model	TADT-1G	TADT-2G	TADT-3G
Nominal temperature range	5°C to 50°C	5°C to 50°C	5°C to 50°C
Nominal humidity range	5%RH to 95%RH(20±3°C)	5%RH to 95%RH(20±3°C)	5%RH to 95%RH(20±3°C)
Test chamber size	160×175×175(mm)	280×175×175(mm)	110×110×110(mm)
Working volume	5L	9L	1.5L
Whole machine size	550×300×600(mm)		370×480×200(mm)
Maximum allowable Temperature Error	±0.05°C(20±3°C) ±0.1°C(5 to 50°C)		
Maximum allowable error of relative humidity	±0.8%RH(20°C±3°C) ±1.5%RH(5°C to 50°C)		
Temperature uniformity	≤0.05°C(20°C±3°C) ≤0.1°C(5°C to 50°C)		
Humidity uniformity	≤0.3%RH(20°C±3°C) ≤0.5%RH(5°C to 50°C)		
Temperature stability	±0.05°C		
Humidity stability	±0.2%RH		
Sensor test window	Combined design, support on-demand customization		

Product Overview

The low dew point generator can continuously generate moisture at -80°C+20°C dew point, and the flow rate is adjustable from 0-10L/min. The system is composed of air compressor, dry gas generating device, dew point generating device, flow valve and other units. The entire system is compact, small in size. At the same time, the degree of automation is high. Applicable to measurement, universities, scientific research, dew point instrument production, military, electric power, petrochemical, natural gas, steel, microelectronics and many other industries.



Product overview

The principle of chilled mirror is based on its physical definition and is a recognized standard of humidity measurement. Chilled mirror hygrometer has high precision, without drift, long life and good repeatability. The mirror surface of this chilled mirror hygrometer is gilded, and the photoelectric measuring room is made of excellent corrosion resistance to ensure accurate measurement data and adapt to harsh working conditions.

DTHG Low Dew Point Generator

Product Features

- Integrated chassis design, easy to operate.
- Air source, dry gas generating device, dew point generating device and dew point meter can be disassembled separately for easy selection on demand.
- The total flow rate is 0-10L adjustable, and the flow rate can be adjusted according to the number of tested devices.
- The dry gas generator can stably output dry gas with dew point temperature $\leq -80^\circ\text{C}$.
- The dew-point generating device uses a mass flowmeter with high precision and high stability for dry and wet gas mixing, and is equipped with stable gas output.
- System operation adopts a 7-inch large screen, man-machine interface operation is simple and convenient.

Technical Indexes

Part name	Dry gas generator	Part Name	Humidity generator
Working principle	Desiccant pressure swing adsorption	Working principle	Shunt method
Minimum dew point of dry gas	$\leq -80^\circ\text{C}$	Range	DP: -80°C to $+15^\circ\text{C}$ (Upper limit is less than 5°C ambient temperature)
Input gas pressure	0.6-0.8MPa	Stability	DP: Fluctuation $\leq \pm 0.1^\circ\text{C}$ in half an hour
Output gas pressure	0.3MPa (Adjustable)	Response Time	$\leq 1\text{min}$
Operating temperature	$5-40^\circ\text{C}$	Operating temperature	5°C to 40°C
Storage temperature	$-40 +50^\circ\text{C}$	Storage temperature	-40°C to $+50^\circ\text{C}$
Air inlet and outlet connector	1/4 Inch Stainless Steel Sleeve	Output	3 gas output: 1 output is connected to the standard, 2 working gas output
Power Source	AC220V $\pm 10\%$ 50Hz	Air inlet and outlet connector	316 Stainless steel 1/4"
Power	300W	Adjustable Flow	0-10L/min
Dimension(mm)	485 \times 500 \times 260 (W \times D \times H)	Air source Pressure Range	0.2-0.4MPa

DT-ABG High Temperature And High Humidity Chilled Mirror Hygrometer

High temperature and high humidity chilled mirror hygrometer is used for high temperature dew point temperature, moisture content of flue gas, blast furnace gas dew point and so on. The product adopts chilled mirror principle, touch screen control system, automatic continuous analysis. It has high precision and can test high temperature dew point. It is widely used in temperature and humidity measurement and testing in electric power, environmental protection, metallurgy, medicine and other industries.

Technical Indexes

Dew point/Frost point range	$+15^\circ\text{C}$ to $+98^\circ\text{C}$	Serial Output	RS 232
Dew point measurement accuracy	$\pm 0.1^\circ\text{C}$	Power Source	22VAC 50/60Hz Power 60W
Display resolution	0.01 $^\circ\text{C}$	Operating Temperature	-20 to 100°C Humidness $\leq 95\%$
Repeatability	$\pm 0.05^\circ\text{C}$		
Sensitivity	$\pm 0.01^\circ\text{C}$		
Response time	Stability test for 1 minute $\pm 15^\circ\text{Cdp}$		
Range	-45 to $+150^\circ\text{C}$		
Precision	$\pm 0.1^\circ\text{C}$		
Withstand voltage range	Less than 1.5MPa		
Screen	7" Color Touch Screen		
Measurement display unit	$^\circ\text{Cdp}$ $^\circ\text{C}$ %RH PPMV L/min		

Chilled Mirror Hygrometer DTSW-LcG Digital Thermometer



Michelle Precision
Chilled Mirror Hygrometer



DT-ACG Precision
Chilled Mirror Hygrometer



Chilled Mirror Hygrometer



DTSW-LcG
Digital Thermometer

DTSW-LcG Digital Thermometer

Measurement Range	-30°C to 150°C
Resolution	0.001 $^\circ\text{C}$
Accuracy (@20 $^\circ\text{C}$)	$\leq 0.05^\circ\text{C}$
Sensor length	1~1.5m
Thermal response time	30S
Battery type	Lithium battery (not less than 1000 charge and discharge cycles)

Chilled Mirror Hygrometer

Model	Optidew 401	DT-ACG
Dew point measurement range	-25°C to 90°C	-20°C to 90°C
Display resolution	0.01 $^\circ\text{C}$	0.01 $^\circ\text{C}$
Precision	Temperature: $\pm 0.1^\circ\text{C}$; Dew Point: $\pm 0.15^\circ\text{C}$	Temperature: $\pm 0.1^\circ\text{C}$ Dew Point: $\pm 0.2^\circ\text{C}$
Repetitive	$\pm 0.05^\circ\text{C}$	$\pm 0.05^\circ\text{C}$
Service environment	-20°C to $+50^\circ\text{C}$, Maximum 100%RH non-condensing (optional)	-20°C to 50°C ; Humidity: $\leq 95\%$
Response time	1 min $+10^\circ\text{C}$ DP stability measurement	1 min $+10^\circ\text{C}$ DP stability measurement
Main controller weight	1.5kg	4kg
Power supply	100 to 240VAC, 50 to 60Hz	22VAC, 50/60Hz; Input: 60W

Chilled Mirror Hygrometer

Dew point measurement range	-80 to $+20^\circ\text{C}$ -95 to $+20^\circ\text{C}$
Display resolution	0.01 $^\circ\text{C}$
Measurement accuracy of dew point sensor	$\pm 0.1^\circ\text{C}$ (Primary Standard)
Repeatability/Sensitivity	$\pm 0.05^\circ\text{C}$ / $\pm 0.01^\circ\text{C}$
Flow measurement	Range: 0 to 1.5L/min ; Precision: $\leq \pm 0.25\%$ FS
Withstand voltage range	Less than 1.5MPa
Measurement display unit	$^\circ\text{Cdp}$ $^\circ\text{C}$ %RH PPMV L/min
Gas connection	Air inlet: 1/4" stainless steel sleeve, air outlet: 1/4" stainless steel sleeve

DTZ-400BG Surface Probe Temperature Calibrator

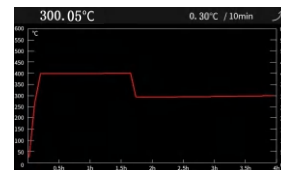


Product Overview

DTZ-400BG Series surface probe temperature calibrator is mainly used to calibrate L-type sensors and surface sensors of various sizes and types, such as thermistor, film sensor, surface resistance thermometer, strip sensor, surface thermocouple, etc. The product consists of controller and heater, easy to operate, intuitive display, effective use range up to 130mm diameter, support communication with the computer, a little change can be upgraded to the infrared thermal imager calibration source.



Smart touch screen home screen



Curve real-time display interface

Product features

- Wide temperature range, multi-range selection: 35°C to 400°C / 50°C to 500°C / 50°C to 600°C
- Large calibration plane: up to 130mm.
- High accuracy: $\pm 0.5^\circ\text{C}@200^\circ\text{C}$.
- Rapid rise and drop, fast and stable: it only takes 30min for room temperature to rise to 400°C.
- Temperature control and stable: $\pm 0.3^\circ\text{C}/10\text{min}(@300^\circ\text{C})$.
- High resolution: 0.01°C.
- Multi-stage temperature control: segmented PID control.
- Measuring surface adopts "aerospace composite coating", with high hardness, good wear resistance and high thermal conductivity.
- Groove clamshell design: can be used for calibration of L-bend surface temperature sensors.
- Standard jack on the side: the standard can be inserted right below the center of the measuring surface to improve the accuracy of calibration.
- Support RS-232 communication: communication software is available.

Maximum calibration temperature can reach 600°C, and the speed of heating and cooling is fast

Excellent heating and cooling rate, from room temperature to 400°C, 30 minutes, from 400°C to room temperature, with a rapid cooling device only 45 minutes, greatly improve the work efficiency.

Calibration plane diameter up to 130 mm, can meet the vast majority of surface temperature sensor calibration requirements

Plane diameter up to 130mm, enough to calibrate various sizes and different types of surface sensors.

Recessed clamshell design for calibration of L-bend surface temperature sensors. An external reference platinum resistance thermometer can be installed to reduce the uncertainty of calibration

In order to achieve the required accuracy of calibration, the design engineer specially reserved a thermometer socket at the bottom of the aluminum surface. A high precision platinum resistance thermometer can be inserted as a standard for comparison and calibration, greatly improving the accuracy of calibration.

Excellent temperature uniformity and surface finish of the calibration plane

Uses aluminum as the surface for a high finish, which ensures that the calibrated sensor is in good contact with the surface temperature calibrator, thus reducing calibration uncertainty. The measuring surface adopts "aerospace composite coating", with high hardness, good wear resistance and high thermal conductivity.

Accurate temperature control, stable, small overshoot temperature

The device provides a variety of parameter options for users to choose, including setting PID parameters of high, medium and low three different temperature segments, inflection point between different temperatures, alarm temperature, etc.



DTZ-460BG Series Surface Probe Temperature Calibrator

Wide Measuring Range
50°C~600°C

Technical Indicators

Model	DTZ-400BG	DTZ-450BG	DTZ-460BG
Temperature range	35°C to 400°C	50°C to 500°C	50°C to 600°C
Product type	Smart touch screen	Smart touch screen	High temperature custom style
Calibration plane diameter	130mm		
Stability	$\pm 0.2^\circ\text{C}/10\text{min}@$ At room temperature $\leq t \leq 100^\circ\text{C}$ $\pm 0.4^\circ\text{C}/10\text{min}@300^\circ\text{C} < t \leq 400^\circ\text{C}$	$\pm 0.3^\circ\text{C}/10\text{min}@100^\circ\text{C} < t \leq 300^\circ\text{C}$	$\pm 0.6^\circ\text{C}/10\text{min}@400^\circ\text{C} < t \leq 500^\circ\text{C}$
Uniformity	0.3°C At room temperature $\leq t \leq 100^\circ\text{C}$ 1.2°C at $300^\circ\text{C} < t \leq 400^\circ\text{C}$	0.7°C at $100^\circ\text{C} < t \leq 300^\circ\text{C}$	1.8°C at $400^\circ\text{C} < t \leq 500^\circ\text{C}$
Display accuracy	$\pm 0.3^\circ\text{C}$ to $\pm 0.5^\circ\text{C}$		
Heating up time	Room temperature to 400°C 30min		
Cooling time	400°C to room temperature It only takes 45 minutes with fast cooling device		
Stable time	8min		
Display resolution	0.01°C		
Power	220VAC / 50HZ / 800W		
Communication interface	RS-232		
Sensor type	RTD/100Ω		
Furnace size(mm)	280(L)×270(W)×190(H)	325(L)×323(W)×214(H)	
Controller size(mm)	218(L)×175(W)×145(H)	220(L)×175(W)×144(H)	
Weight	12kg		
Storage conditions	-20°C to 60°C (-4°F to 140°F); 5%RH to 80%RH(No condensation)		

DTMC-mk301 High-precision thermometer is a new generation of multi-channel super thermometer specially developed for the field of temperature measurement calibration and precision temperature measurement. It highly integrates high-accuracy electrical measurement technology, intelligent interaction technology, and industry needs, and comprehensively solves the measurement and calibration needs of laboratory and field temperature sensors.

Intelligent Multi-channel Thermometer Series



- DTMC-mk301G High-precision Thermometer
【Support 1/2/3 channels
- DTMC-G Intelligent Multi-channel Thermometer
【Support 2/4/6/8 channels
- DTSW-G Precision Digital Thermometer
【Accuracy≤0.05°C
- DTWH-G Hand-held Multichannel Thermometer
【Channels 1/2/3 are supported
- DTEL-15G Multifunctional Process Calibrator

Ultra-portable Intelligent Calibration Bath Series



- DTS-180BG Temperature Range: 60°C to 180°C
- DTS-300BG Temperature Range: 60°C to 300°C
- DTS-95BG Temperature Range: -40°C to 95°C
- DTS-125BG Temperature Range: -40°C to 125°C
- DTS-10BG Temperature Range: -10°C to 180°C
- DTS-20BG Temperature Range: -20°C to 180°C
- DTS-30BG Temperature Range: -30°C to 180°C
- DTS-40BG Temperature range: -40°C to 180°C

Portable intelligent dry block calibrator



- DT-ULT100G Temperature Range: -100°C to 40°C
- DTG-MU-N40G Temperature Range: -40°C to 150°C
- DTG-140G Temperature Range: -20°C to 140°C
- DTG-150G Temperature Range: -30°C to 150°C
- DTG-MU-350G Temperature Range: 33°C to 35°C
- DTG-660G Temperature Range: 50°C to 660°C
- DTG-MU-660G Temperature Range: 50°C to 660°C
- DTG-1000G Temperature Range: 300°C to 1000°C
- DTG-1200G Temperature Range: 300°C to 1200°C

Handheld Dry Block Temperature Calibrator



- ETC-150G Temperature Range: -10°C to 150°C
- ETC-400G Temperature Range: 50°C to 400°C

DTMC-mk301G High-precision Thermometer



It is specially developed for temperature measurement calibration and precision temperature measurement.
High-accuracy electricity testing technology, intelligent interaction technology, and industry demand are highly integrated, and the needs of laboratories and on-site temperature measurement and calibration are fully solved.

Product function

mK Class Precision Thermometer

- Resolution 0.0001 °C
- Accuracy (at 0 °C for SPRT) 7ppm

Channels and sensors

- 3 Input Channels CH1/CH2/CH3
- Supports 2 standard platinum resistors and 2 standard thermocouples
- Supports Thermal Resistance Pt/Cu/Ni Pt25/Pt100/PtX/CuX/NiX
- Supports Thermocouple K/N/J/E/T/R/S/B/We3/We5
- Supports Thermistors(0-40K)
- Support Temperature transmitters 0-20mA/4-20mA
- The RTD supports automatic current commutation, eliminating EMF thermo errors

Thermocouple cold junction compensation

- Thermocouple cold junction compensation can be selected in a variety of ways (built-in compensation/external compensation/fix compensation)

Multiple Conversion Formula

- ITS-90/Callendar-VanDusen/IEC60751-2008/polynomial/Stein-Hart/B value/Linear

Sensor Management Function

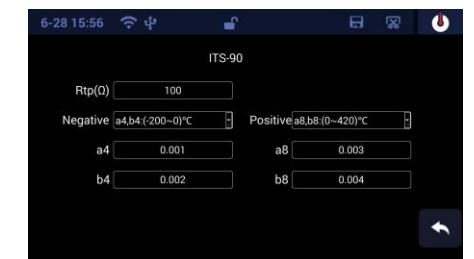
- Standard management function with support for 100 sensor parameters
- Parameter editing function, effectively improve the sensor measurement accuracy

Intelligent Sensor Function

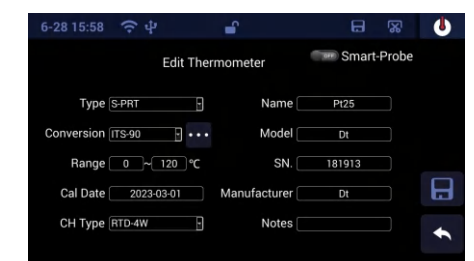
- After the sensor is inserted into the thermometer, it automatically identifies and uploads data



Thermometer list



ITS-90



Sensor Management Function

Intelligent Junction Box Function

- Supports storage and automatic upload of standard platinum resistance certificate values, no need to manually enter certificates

5 Different Main Interface Display Modes

- It has 5 display modes: single channel, double channel, three channel, curve, table.
- Real-time display of sensor information, measurement statistics, or differences between measurements.
- Automatic data statistics of temperature trends (Max/min/mean/peak/standard deviation/volatility, etc.)
- Curve real-time display
- 7 "HD touch screen

Thermal Calculator

- Built-in thermal calculator
- Built-in ITS-90 fixed point information

Data Recording And Storage Functions

- Time-stamped data recording
- 8G internal storage space, support external USB flash drive to store data
- SCPI communication protocol (RS232/WLAN)
- Screenshot function: All interfaces support the screenshot function, and test data does not need to be recorded on site



Intelligent junction box function



Three channels display the main screen

Technical Indicators

Electrical Indicator					
Applicable Model				DTMC-mK301H	DTMC-mK301
Channel type	Range	Input range	Resolution	Accuracy (1 year)	
SPRT	120Ω	0Ω to 125Ω	0.01mΩ	15ppm+3ppm	30ppm+5ppm
PRT	400Ω	0Ω to 410Ω	0.01mΩ	15ppm+3ppm	30ppm+5ppm
	4KΩ	0Ω to 4.1KΩ	0.1mΩ	30ppm+6ppm	30ppm+6ppm
TC	100mV	0mV to 115mV	10nV	40ppm+20ppm	60ppm+20ppm
Transmitter	25mA	0mA to 30mA	0.001mA	0.02%	0.02%

Note: Test ambient temperature 20°C±1°C

Temperature index			
Type	Type	Temperature Range	Accuracy
SPRT	Pt25	-189°Cto 961°C	±0.006°C(@0°C)
PRT	Pt100	-189°Cto 961°C	±0.003°C(@0°C)
TC	K	-270°Cto 1370°C	±0.08°C(@600°C)
	N	-270°Cto 1300°C	±0.08°C(@600°C)
	J	-210°Cto 1200°C	±0.08°C(@600°C)
	E	-210°Cto 1000°C	±0.08°C(@600°C)
	T	-270°Cto 400°C	±0.05°C(@200°C)
	R	-50°Cto 1760°C	±0.25°C(@1000°C)
	S	-50°Cto 1760°C	±0.25°C(@1000°C)
B		250°Cto 1820°C	±0.30°C(@1000°C)

Note: Sensor bias is not included

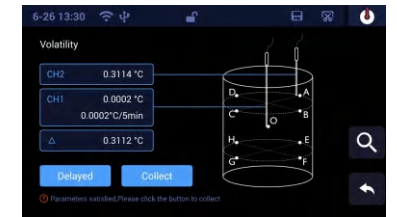
Application scenario

Supports 2 standard platinum resistors and 2 standard thermocouples

- Supports simultaneous connection of two standard platinum resistance thermometers.
- Supports simultaneous connection of two standard thermocouples.
- Support different index thermocouples, various types of thermal resistors, temperature transmitters, etc.

New upgrade: Calibration Baths technical performance automatic test function

- Automatic collection of test data, real-time display, automatic calculation, automatic judgment, automatic generation of test reports.
- Historical data can be viewed and exported in real time.
- The operation is fast and convenient, just connect the high-precision thermometer to the standard, and place the standard (fixed thermometer, mobile thermometer) in the constant calibration bath to carry out work and improve efficiency.
- The function meets the requirements of "JJF 1030-2023 thermodynamic bath Technical Performance Test Specification for temperature Calibration".



Thermostatic calibration bath uniformity test

Multi-channel temperature scan switch

- Support channel expansion function to achieve multi-channel temperature measurement
- Input channel: 8 channels
- Interface: 2 X RS 232
- Power supply voltage: 90-240VAC/ 47-63Hz
- Power: 2.5W
- Size: 300mm×190mm×66mm



Multi-channel temperature scan switch

Functions and Parameter

Functions and parameter		
Number of channels	3	The CH1 and CH2 are installed front, and the CH3 is installed rear
Input	CH1/CH2 CH3	Thermocouple/Thermoresistor Electric current
Input connector	Thermal Resistance Thermocouple	Front panel Lemo EPG.1B.306.HLN 6-pin Connector;Rear panel: 4mm Low heat terminal Mini Thermocouple Connector(ASTM E 1684-05)
Driving current	SPRT/PRT	1mA(±0.1%)(Autocommutation)
Cold-junction compensation		Built-in cold junction compensation, CH1 and CH2 can be mutual cold end compensation, cold junction compensation temperature can be input
Cold junction compensation accuracy		±0.1°C
Intelligent sensor	SPRT/PRT	Support
Number of sensors managed		100 Pieces
Data storage capacity		8G
Transformation formula		ITS-90 IEC60751(2008) Callendar-van Dusen Steinhart-Hart B value; polynomial
Supported sensor types	Thermal resistance Thermoelectric couple	Standard Platinum Resistance PT25, PT100; Platinum Resistance PT100, PT1000, PT-X; Copper resistance CU50, CU100,CU-X nickel resistors NI50, NI120, Ni1000 Standard Thermocouple:R S B Industrial Thermocouple:K N J E T R S B We3 We5
Display		7 "Color Touch Screen
Communication interface	USB Support (USB flash drive storage data/firmware upgrade) ; Net interface; RS-232 2个	
Power supply/Power	115V±10% and 230V±15% (can be switched 47-63HZ); 25W	
Temperature and humidity condition	Storage: -10°C~50°C, Relative Humidity < 75%RH (no condensation); Operation: 15°C~30°C, relative humidity is less than 75%RH (no condensation); Calibration: 20 ° C ±1 ° C, relative humidity less than 40%RH (no condensation)	

DTMC-G Intelligent Multi-channel Thermometer



Product overview

DTMC-G Intelligent multi-channel temperature measuring instrument based on modular design of multi-channel, multi-function temperature measuring instrument, the whole series is divided into double channel, four channel, six channel and eight channel four configurations, channel support free combination configuration, respectively optional platinum resistance measurement module, thermocouple measurement module or thermistor measurement module. The products are suitable for constant temperature bath temperature field test, thermocouple furnace temperature field test, dry block furnace temperature field test and other precision temperature measurement related fields.

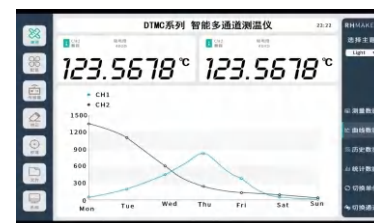


PC and mobile terminal users support Google Browser login devices to remotely browse real-time data

Functions and features

- Support standard platinum resistance, industrial platinum resistance, thermocouple and other temperature sensors.
- Supports editing and configuration of platinum resistance sensor parameters.
- Thermocouple channel provides independent built-in cold end temperature sensor with temperature measurement accuracy better than 0.1°C.
- Thermocouple cold end compensation provides fixed value, internal automatic compensation and external compensation three ways.
- Independent sampling of each channel, modular design, effectively improve the reliability and adaptability of the instrument.
- Each channel can be calibrated and corrected independently by single point, multipoint, piecewise linear or least square method.
- Provide historical data, statistical data, curve data and other forms of data display.
- Supports storage and output of voltage, resistance, temperature and other data formats.
- Provides encryption algorithm support to encrypt data files, effectively improving security.
- Support RS232 and wireless communication mode, can connect to PC or mobile terminal.
- Provides 8 GB storage space for data storage.
- 7 inch industrial color touch screen display.

Supports 8-channel multi-channel measurement



Product selection table

Technical indicators

Channel types	Range	Measuring range	Display resolution	24h/°C(20±1)°C	A year/°C(20±5)°C	Temperature coefficient PPM reading	Model	Channel number
Thermocouple	100mV	-100mV to 100mV	0.1uV	15ppm+8ppm	15ppm+15ppm	3ppm	DTMC-2G	2
	400Ω	0Ω to 400Ω	0.1mΩ	4ppm+4ppm	4ppm+8ppm	1ppm	DTMC-4G	4
Platinum resistance	4KΩ	0Ω to 4KΩ	1mΩ	4ppm+4ppm	4ppm+6ppm	1ppm	DTMC-6G	6
							DTMC-8G	8

Type	Measuring range	Accuracy	Resolution	Sampling rate	Data type
Thermocouple	K -200°C to 1372°C	0.15°C	0.01°C or 0.001°C	1Hz to 10Hz	Configurable Voltage value Temperature value
	J -210°C to 1200°C	0.1°C			
	T -200°C to 400°C	0.1°C			
	E -200°C to 1000°C	0.07°C			
	N -200°C to 1300°C	0.15°C			
	B 250°C to 1820°C	0.3°C@1000°C			
	R -50°C to 1768°C	0.2°C@1000°C			
Platinum resistance	Pt25 -189°C to 961°C	0.005°C@0°C	0.0001°C		Configurable Resistance value Temperature value
	Pt100 -200°C to 950°C	0.005°C@-100°C	0.001°C		
		0.006°C@0°C			
		0.008°C@300°C			
		0.012°C@600°C			

Power supply requirements	12VDC 2A
Communication interface	RS-232, Wireless
Shell material	Aluminum alloy+ABS
Module size	250mm×170mm×70mm
Module weight	2kg
Using environment	(5~35)°C(0~85)%RH
Storage environment	(0~70)°C (0~100)%RH



Product features

- Excellent noise reduction design: The multi-stage anti-aliasing design is adopted, which greatly reduces the noise level of the input channel, effectively improves the signal-to-noise ratio of the measurement results, and the noise level is better than 0.1uV.
- Excellent long-term stability: using the ratio measurement principle, built-in reference grade standard resistance, temperature coefficient as low as 0.1ppm/°C, stability is better than the general-purpose 7 and a half digit multimeter.
- High-precision thermocouple cold junction: Each channel adopts an independent high-precision digital temperature sensor as the cold junction compensation sensor, and the distance between the cold junction temperature measurement point and the thermocouple junction point is less than 20mm, and combined with good uniform temperature design, it can provide reference junction compensation with an accuracy better than 0.15°C for the thermocouple measurement channel.
- Perfect parameter editing: built-in a variety of common thermal resistance, 13 kinds of thermocouple and thermistor calculation formula, users can edit the platinum resistivity according to ITS90 and CVD formulas, ordinary platinum resistance supports editing R0, alpha, beta and delta parameters.
- Statistical data analysis: Each channel has independent curve display and data analysis functions, and users can view the maximum value, minimum value, average value, standard deviation and other statistical data of the measurement data in real time. After starting the measurement, the measurement data is automatically saved to a file, and the user can browse and analyze the historical data at any time.
- Data encryption: It can provide encryption algorithm support to encrypt data files to meet the special requirements of special industries such as national defense and defense industry for data security.
- Wireless LAN: Connect to mobile terminal devices such as tablets and laptops through 2.4G wireless network, without installing any software, you can directly log in to the thermometer using the browser that comes with the mobile terminal (Google browser is recommended) to remotely browse real-time data.
- Large-capacity storage: built-in 8G mass memory, but also support U disk storage function, can easily import data into U disk. The exported data can be used by general-purpose workers such as ExcelWith software browsing or data processing, it can also be imported into special software for data analysis and report generation.
- Rich and friendly human-computer interaction function: using 7-inch touch screen design, providing a rich and friendly human-computer interaction interface, the operation interface content covers: channel setting, sensor setting, statistical data display, curve display, unit switching, channel correction, channel calibration, file operation, system settings, etc., without the help of any other peripherals can independently complete the data collection work of the test site.
- Reliable structural design: with a solid integrated design, in addition to USB interface and network interface, sealed integral mechanism, can work in high humidity environment for a long time.

DTMA-G Precision Thermometer



Model	DTMA-01
Number of channels	1
Temperature range	-200°C to 660°C
Resistance range	0Ω to 400Ω
Resistance resolution	0.0001Ω
Temperature accuracy	±0.003 @ -100°C ; ±0.004 @ 0°C ±0.005 @ 100°C ; ±0.006 @ 200°C ±0.007 @ 300°C ; ±0.008 @ 400°C ±0.009 @ 500°C ; ±0.010 @ 600°C
Resistance accuracy	±(0.0010%RD + 0.0005%F.S.)(24h) ±(0.0020%RD + 0.0005%F.S.)(One year)

DTS-B Portable Intelligent Calibration Baths



Product Overview

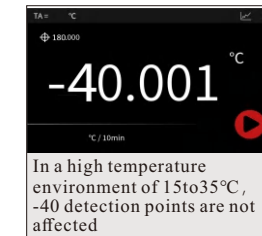
DTS-BG Portable intelligent calibration bath is a kind of high precision and automatic temperature calibration device. The bath is compact in structure, light in weight, easy to carry and durable. Suitable for all kinds of industrial thermal resistance, low temperature thermocouple, armored thermocouple, working glass liquid thermometer, standard mercury thermometer, bimetal thermometer, pressure thermometer and other temperature sensor validation/calibration.

DTS-300BG Portable Intelligent Calibration Oil Bath

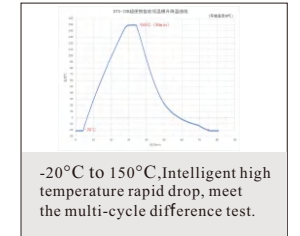


Ultra-portable

DTS-BG Portable Intelligent Calibration Bath



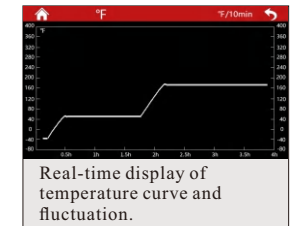
In a high temperature environment of 15to35°C, -40 detection points are not affected



-20°C to 150°C, intelligent high temperature rapid drop, meet the multi-cycle difference test.

Temperature (°C)	Offset (°C)	Temperature (°C)	Offset (°C)
40	50		
20	40		
10	30		
0	20		
-10	10		
-20	0		
-30	-10		
-40	-20		

Multi - temperature point automatic correction, calibration.



Real-time display of temperature curve and fluctuation.

Technical Indicators

Specifications	Ultra-portable Intelligent Calibration Oil Bath		Micro -intelligent Calibration oil Bath	
Model	DTS-180BG	DTS-300BG	DTS-180BG-mt	DTS-300BG-mt
Temperature range	60°C to 180°C	60°C to 300°C	60°C to 180°C	60°C to 300°C
Control mode	Smart touch screen	Smart touch screen	Smart touch screen	Smart touch screen
Display resolution	0.001°C	0.001°C	0.001°C	0.001°C
Display accuracy	±0.2°C	±0.2°C	±0.2°C	±0.2°C
Stability(10min)	±0.02°C(60°C)	±0.02°C(100°C)	±0.03°C(200°C)	±0.035°C(300°C)
Uniformity	≤0.01°C(60°C)	≤0.01°C(100°C)	≤0.02°C(200°C)	≤0.02°C(300°C)
Power	1KW		1KW	
Working area	φ80mm×280mm		φ80mm×280mm	
Size	425×220×370mm		425×220×370mm	
Working medium	Silicone oil(L30-300)		Silicone oil(L30-300)	

Technical indicators

Specifications	Portable Intelligent Calibration Bath (Customizable)					
Model	DTS-10BG	DTS-20BG	DTS-30BG	DTS-95BG	DTS-125BG	DTS-40BG
Temperature range	-10°C to 180°C	-20°C to 150°C	-30°C to 150°C	-40°C to 95°C	-40°C to 125°C	-40°C to 150°C
Control mode	Touch screen					
Display resolution	0.001°C					
Display accuracy	±0.2°C					
Temperature stability	±0.02°C/10min(0°C)					
Temperature uniformity	≤0.02°C(0°C) ≤0.01°C(100°C)					
Power	1KW					
Working area	φ80mm×280mm / φ100mm×280mm (Customizable)					
Size	430×225×500(mm)					
Working medium	L40N-180					

Functions and features

Not affected By Environmental	At an ambient temperature of 15-35 °C, the detection point below -40°C is not affected.
Intelligent High Temperature Rapid drop	It only takes 30 minutes to drop from 150°C to 25°C, which meets the multi-cycle difference test.
Press Type Sealing Structure	Press type fast sealing design, anti-leakage, convenient site transportation.
Smart Touch Screen	Intelligent touch screen, intelligent human-computer interaction interface, 0.001°C resolution.
Real-time Curve Display	Supports real-time display of temperature curves and fluctuations.
Multi-Point Calibration	Support 12-point temperature calibration, can be segmented multi-point correction of temperature sensor, automatic segmented temperature control.
Communication Function	With RS-232 communication interface, can be connected to the upper computer.
Overheating Protection	With overheating protection, temperature limit function, safe and reliable.

Product Functions And Features

Press Type Sealing Structure	Pressing type quick sealing structure, high temperature resistance, convenient remote carrying, site transportation.
Special Overflow Valve Design	Special overflow valve, oil storage tank design, hidden handle, convenient on-site validation/calibration.
Smart Touch Screen	Intelligent color touch screen, human-computer interaction interface, multi-function display window, support multi-touch.
Real-time Curve Display	Real-time display of temperature curve, real-time automatic calculation of temperature fluctuation.
Multi-point Calibration	Support multi-point correction, automatic segmented temperature control.
Overheating Protection	With overheating protection, temperature limit function, safe and reliable.
Communication Function	Rs-232 communication interface, can be connected to the upper computer.

DTG-G Portable Intelligent Dry Block Calibrator



Product overview

DTG-G Portable intelligent dry block calibrator, easy to operate, portable, accurate temperature control, suitable for laboratory and industrial site temperature measurement/calibration. The homogenizing block is made of alloy with high thermal conductivity to ensure the internal temperature field is uniform and stable. Temperature control precision, horizontal temperature field, vertical temperature field, stability, load performance and hysteresis effect technology are in the domestic advanced level, widely used in machinery, shipping, chemical, food, electric power, medicine and other industries.

DTG-G Portable Intelligent Dry Block Calibrator



Product Features

- High-definition color capacitor screen, support Chinese and English bilingual switching, Celsius degrees Fahrenheit free switching, simple operation, display calibration status in real time.
- Fast heating and cooling speed, short stable time.
- The equipment is lightweight, easy to carry, and applicable to the detection/calibration of on-site instruments.
- Average hot block customization service: supports different sizes and different specifications on demand.
- Built-in overheating protection function, safe and stable.
- Support multi-temperature point automatic calibration/correction; segmented PID control, one-click heating, fully automatic temperature control.
- With RS-232 communication interface, support data transmission, upload to the PC side, automatically save data.

Technical Indicators

Specifications	Low Temperature Intelligent Dry Block Furnace			Medium Temperature Portable Dry Block Furnace		High Temperature Portable Dry Block furnace		
	DTG-140G	DTG-150G	DT-ULT100G	DTG-660AG	DTG-660BG	DTG-1000G	DTG-1200AG	DTG-1200BG
Model	DTG-140G	DTG-150G	DT-ULT100G	DTG-660AG	DTG-660BG	DTG-1000G	DTG-1200AG	DTG-1200BG
Range	-20°C to 140°C	-35°C to 150°C	-100°C to 40°C	50°C to 660°C	50°C to 660°C	300°C to 1000°C	300°C to 1200°C	300°C to 1200°C
Stability	±0.15°C		±0.5°C	±0.2°C	±0.1°C	±0.2°C	±0.4°C	±0.2°C
Display resolution	0.01°C		0.01°C	0.01°C	0.01°C	0.1°C	0.1°C	0.1°C
Display accuracy	0.2°C		0.2°C	0.2°C	0.2°C	0.2°C	0.2°C	0.2°C
Power input	400W		Support customization	650W	650W	2200W	2200W	2200W
Radial uniformity	≤0.2°C			≤0.3°C	≤0.15°C	≤0.8°C	≤1.5°C	≤0.8°C
Standard insert apertures(mm)	φ4,5、φ6,5、φ8、φ10(Diameter and quantity can be customized)					φ6,5、φ12(Support customization)		
Immersion (well) Depth	170mm		Support customization	170mm				
Size (mm)	330×170×320			285(L)×170(W)×335(H)				
Power supply	220V / 50Hz ; 110V / 60HZ			220V / 50Hz ; 110V / 60HZ				

Intelligent Dry Well Temperature Calibrator



Utility model patent certificate

Product Features

- Intelligent calibration: built-in setting the parameters of thermocouple, thermal resistance, and temperature transmitter, the program can automatically complete the calibration work.
- Intelligent wireless remote operation: connect to mobile phones or computers through WIFI, remotely operate dry furnace.
- Dual-channel electrical test: standard RTD channels and passing channels all the way, including thermocouple, thermal resistance, and circuit measurement.
- Intelligent standard thermometer: The built-in chip built-in chip is stored in the standard ITS-90 parameter and information, and automatically reads, that is, plug and play.
- Support HART smart temperature transmitter calibration.
- Support the internal temperature control sensor's self-calibration function and support external standard RTD temperature control methods.
- Multiple safety protection: Related materials are preferably V0 fire prevention level, and automatic protection is automatically protected.

Technical indicators

Model	DTG-MU-350G	DTG-MU-660G	DTG-MU-N40G
Display resolution	0.001°C		
Display	Touch screen, °C and °F switching		
Temperature range	33°C to 350°C	50°C to 660°C	-40°C to 150°C
Display accuracy	± 0.2 °C full temperature	±0.35°C-±0.5°C	± 0.2 °C full temperature
Stability	±0.02°C	±0.03°C-±0.05°C	±0.005°C full temperature
Axial uniformity within 40mm	±0.04°C@33°C ±0.1°C@200°C ±0.2°C@350°C	±0.05°C@50°C ±0.35°C@420°C ±0.5°C@660°C	±0.1°C@-40°C ±0.05°C@0°C ±0.07°C@150°C
Radial uniformity	±0.01°C@33°C ±0.015°C@200°C ±0.02°C@350°C	±0.02°C@50°C ±0.05°C@420°C ±0.1°C@660°C	±0.01°C Full temperature
Reference resistance range	0Ω-400Ω		
Built-in mA measurement	0.02% Reading +0.002mA		
Thermocouple millivolt range	-10mV-75mV		
RTD resistance range	0Ω-400Ω		
RTD measurement function	4 wire RTD(With jumpers 2、3 wire RTD)		

Product overview

ETC-G Handheld dry-block calibrators, is a kind of micro hand-held dry temperature calibration furnace, small and portable equipment, durable, simple operation, high accuracy. It is especially suitable for the field calibration of thermal resistance/thermocouple/temperature switch with various diameters, and suitable for the calibration occasions where fast calibration is required and the sensor is not convenient to disassemble.

Product overview

DTSW-G Digital thermometer is the latest in the field of industrial temperature calibrator, precision measurement, its accuracy and repeatability can be achieved better than 0.05°C/year, lithium batteries don't need to replace the battery life long, easy to carry and intuitive readings, strong and durable. It can not only be used as a temperature standard in the laboratory, but also can provide reliable, accurate and high-precision temperature measurement in the industrial field.

DTG-ETC-G Handheld Dry-Block Calibrator



DTG-ETC-150G



DTG-ETC-400G

Product Features

- Temperature range: -10 °C to 400 °C
- The rising and cooling speed is fast, and the stable state can be reached in 15 minutes, saving the test time.
- Designed for on-site temperature testing, small volume, light weight, can be applied to small, limited space.
- Small and portable can be easily put in the box or toolbox to reduce the labor intensity of personnel.
- The solid metal shell can be used for a long time in the industrial environment.
- The hole size of the soaking block can be customized on demand.
- Equipped with 232 communication port.



Design patent certificate

Technical indicators

Model	DTG-ETC-150G	DTG-ETC-400G
Range	-10°C to 150 °C	50°C to 400°C
Display resolution	0.1 °C	0.1 °C
Stability	±0.1°C	±0.1°C
Insert depth	120mm	110mm
Standard insert aperture	φ4 , φ6 , φ7	φ4.5 , φ6.5 , φ8 , φ10
	Diameter and quantity can be customized	
Level of temperature field	≤0.2°C	≤0.2°C
Access Opening	φ12.5mm×120mm(L)	φ30mm×110mm(L)
Size	230×180×125(mm)	220×160×100(mm)
Power	230W	350W

DTSW-G Precision Digital Thermometer



DTSW-2G Industrial Grade Digital Thermometer



DTSW-1G Stick Type Digital Thermometer readout



DTSW-LcG Precision Digital Thermometer



Digital Thermometer Management Software



数据修正软件

Technical indexes

Name	DTSW-G Stick Type Digital Thermometer				Digital Thermometer	
	DTSW-II	DTSW-1G-A	DTSW-1G-B	DTSW-2G	DTSW-kLG	DTSW-LcG
Model	DTSW-II	DTSW-1G-A	DTSW-1G-B	DTSW-2G	DTSW-kLG	DTSW-LcG
Range	-5°C to 60°C	-80°C to 160°C	-80°C to 300°C	-80°C to 300°C	-80°C to 400°C	-30°C to 150°C
Accuracy	≤0.01°C	0.04+0.005%FS	0.05°C+0.01%FS	0.1°C	0.2°C	≤0.05°C
Calibration cycle	One year				One year	
Temperature coefficient	<1ppm/°C				<1ppm/°C	
Length of sensor	500mm (19.68 in)				1~1.5m	
Sensor diameter	6mm				Meet the 1076-2020 calibration specification	
Sensor material	316 stainless steel (medical, food grade)				Cord	
Sensor specification	Thin film platinum resistance			Wire wound platinum resistance		
Display resolution	0.001°C (the user can be configured to 0.1°C, 0.01°C)					
Sampling frequency	0.5s, 1S and 2S can be configured		Charging voltage		DC5V	
Thermal response constant	30S		Operating temperature		-20°C~60°C(14°F~122°F)	
Data storage	16,000 sets of data (with time stamp)		Host working environment		-10°C~50°C(14°F~122°F)	
Communications	USB and wireless communication		Main engine protection class		IP50	
Wireless communication	No occlusion up to 160m		Sensor protection class		IP68	
The battery type	lithium battery		Size (mm)		106(L)X48(W)X37(T)	
Lithium battery life	≤1000 charge and discharge cycles		Total weight		202g	
Charging time	2 hours		Storage condition		-20°C~60°C(-4°F~140°F) 5%RH-80%RH (Without condensation)	

Temperature And Humidity Inspection System

Product selection navigation chart

Distributed Wireless Acquisition System



DTZ-300WX Distributed Wireless Acquisition System

Intelligent Temperature Humidity Data Acquisition Logger



DTZ-300BWG Intelligent Temperature Humidity Data Acquisition Logger
DTZ-300BX1609G Temperature Humidity Data Acquisition Logger

Wireless Recorder Acquisition System



DTWX-01 Wireless Recorder Acquisition System
DTWX-02G Field Wireless Temperature And Humidity Monitoring System
DTZ-500G Wireless Furnace Temperature Tracking And Testing System

Wireless Temperature/Humidity/Pressure Validation System



DTPro Wireless Authentication System
TDLB-G Wireless Temperature Validator
MDLA-G Wireless Temperature And Humidity Validator
PDLA-G Wireless Pressure Tester
DTRC-G Wireless Real-time Validation System

Product overview

DTZ-300WX Distributed wireless acquisition system is a multi-functional wireless inspection system freely configured by temperature module and humidity module, supporting 160 temperature sensors and 100 humidity sensors at the same time, each channel can be configured independently, real-time display of detection data, automatic calculation of verification results. Suitable for all kinds of temperature (wet) environment experimental equipment, heat treatment furnace temperature field test. The small size of the equipment makes it easy to carry out monitoring work on site.

DTZ-300WX Distributed Wireless Acquisition System



Product features

- One host supports simultaneous testing of five equipments, each calibration task is independent to each other
- Support 160 temp. sensors, 100 humi. sensors to test multiple experimental equipment at the same time.
- Curve function supports real-time view of all modules temp. and humi. data curve chart, and constantly updated.
- Supports real-time viewing of data and calculations in compliance with relevant protocols.
- Real-time display of the measured equipment performance indicators. Single acquisition module interface supports real-time view of all sampling data
- Complete the high-precision correction of the multi-module and multi-channel temp and humidity sensor at one time.
- Each project can be allocated 4 modules, according to their respective sampling interval work, can set independent alarm parameters, support to check the P1~P5 project sampling status, sampling points, alarm status and so on.



Accessory function index

Master

- 4.3 inch capacitive touch screen
- Built-in lithium battery, full battery life ≥ 25 hours
- Built-in 16GTF card
- Export data from USB flash drive
- Type-c charging port

Humidity module

- Wireless transmission distance > 1000 meters
- Full battery life ≥ 15 days
- Supports 10-channel VAISALA humidity probe
- Humidity resolution 0.01%RH,
- Humidity accuracy $\leq 1.5\%$ RH
- TYPE-C charging port

Temp.module

- Wireless transmission distance > 1000 meters
- Full battery life ≥ 30 days
- Support temperature measuring elements: thermal resistance: Pt100,
- Thermocouple: K, J, E, N, R, S, B, T
- Temperature resolution 0.001°C
- The full range calibration accuracy of module +PT100 sensor is better than $\pm 0.1^\circ\text{C}$ at $-80^\circ\text{C} \sim 300^\circ\text{C}$
- Type-c charging port

DTZ-300BX1609G Temperature Humidity Data Acquisition Logger



Product overview

DTZ-300BX1609G Temperature & humidity data acquisition logger which can be connected to 16 temperature sensors and 9 humidity sensors. It has rich human-computer interaction functions and can display the temperature value, humidity value and other test data of each measured channel in real time. It is a special instrument for temperature and humidity field inspection. It is suitable for various temperature (humidity) environment experimental equipment and heat treatment furnace temperature field testing. The equipment is small in size and portable, making it easy to carry on-site for monitoring work.

Technical indicators

Temperature indicators				
Name	Type	Temperature range	Accuracy	Resolution
Four-wire industrial grade PRT	Pt100	-200°C to 800°C	±0.1°C	0.01°C
	K	-200°C to 0°C	±(T×0.155%+0.05)°C	
		0°C to 1372°C	±(T×0.077%+0.05)°C	
	J	-200°C to 0°C	±(T×0.15%+0.05)°C	
		0°C to 1200°C	±(T×0.065%+0.05)°C	
	E	-200°C to 0°C	±(T×0.121%+0.05)°C	
		0°C to 1000°C	±(T×0.065%+0.05)°C	
	N	-200°C to 0°C	±(T×0.180%+0.08)°C	
		0°C to 1300°C	±(T×0.065%+0.08)°C	
	R	0°C to 1768°C	±(T×0.07%+0.4)°C	
	S	0°C to 1768°C	±(T×0.07%+0.4)°C	
	B	400°C to 1820°C	±(T×0.065%)°C	
	T	-250°C to 0°C	±(T×0.10%+0.05)°C	
0°C to 400°C		±(T×0.065%+0.05)°C		
Humidity Sensor	Humidity	0%Rh to 100%Rh	±1.5%	0.01%RH

Hardware parameter			
Input voltage	4.5-5.5V	Input Current	Max 2.2A
Battery	4.2V/20000mAh	Battery time	≥30h
Display	5-inch capacitive screen	Resolution	854×480
Working temperature	-10 to 50°C	Working humidity	≤80%RH
Power switch	Anti-accidental touch slide switch	Charging interface	DC6.4×2.1
Dimensions(mm)	180×150×70	Weight	< 1.5kg
Communication Interface	AUX3.5mm	U disk interface	USB2.0
Sensor interface	Embedded wiring terminals	9 humidity sensor interface	Embedded wiring terminals

Execute calibration procedures

No.	Standard code	Standard name
1	JJF1101-2019	Environmental test equipment temperature and humidity calibration specifications
2	GB/T9452-2012	Method for determination of effective heating zone of heat treatment furnace
3	QJ1428-88	Heat treatment furnace temperature control and measurement
4	GJB509B-2008	Heat treatment process quality control requirements
5	HB5425-2012	Method for determination of effective heating zone of aerospace parts heat treatment furnace
6	GB/T 5170.1-2016	Inspection methods for environmental testing equipment for electrical and electronic products
7	GB/T 5170.2-2017	Environmental test equipment inspection methods: temperature test equipment
8	GB/T 5170.5-2016	Inspection methods for environmental testing equipment for electrical and electronic products
9	HB6783-93	Calibration method of climate environment test chamber (chamber) for military airborne equipment
10	JB/T5520-91	Drying oven technical conditions
11	JJF1376-2012	Calibration specifications for box-type resistance furnaces
12	JJF1564-2016	Temperature and humidity standard chamber calibration specifications



Wiring terminal



USB connection/optional

Product features

- **High Accuracy And Fast Measurement** which greatly improves work efficiency while ensuring measurement accuracy.
- **Intelligent Human-computer Interaction Interface** It adopts high-definition intelligent capacitive touch screen, which is simple and convenient to operate. It can display the collected data in real time and the battery power in real time. General parameters such as temperature sensor type, number of temperature sensor channels, number of humidity sensors, date, time, and collection interval support custom settings.
- **Convenient Data Collection** There is no need for a PC at the work site. The multi-channel data collector can independently complete data collection and storage, and the data is stored in a USB flash drive in real time. After the collection work is completed, the U disk can be inserted into the computer to complete the display and analysis of the data.
- **Supports 8g U Disk Storage Function** Sampling data supports real-time storage to USB flash drive. The stored data can be browsed or processed with general tool software such as Excel, or it can be imported into special software for data analysis, report generation and certificate output.
- **Auto Correction Function** It supports the linear correction function of commonly used K, N, and S thermocouple temperature sensors, supports the linear correction function of Pt100 thermal resistance sensor, supports the linear correction function of humidity sensor, and supports the introduction and saving of multi-point temperature correction values in a single channel.
- **Communication Function** Supports connection to PC via data cable, supporting professional database management software, intelligent data management, real-time curve display of temperature and humidity information of each channel, test data of each channel: marked center point, fluctuation, uniformity, change rate, current detection progress, equipment Status, etc., supports multiple inspection instruments to carry out testing work at the same time, and the data is processed independently, effectively improving work efficiency.
- **Simple And Fast Connection Method** The wiring method uses standard connectors as connectors, making sensor wiring easier and faster. The temperature and humidity interfaces have anti-misplugging functions, effectively ensuring the reliability and performance indicators of system connections.
- **Built-in Large-capacity Lithium Battery, Low Power Consumption And Long-lasting Battery Life** Built-in large-capacity lithium battery, low power consumption design, supports 30 hours of continuous operation. The charging interface is 2.1×6.4DC, with reliable connection and large charging current. It has a battery charge and discharge protection circuit, which is safe and reliable; the external power supply and the battery intelligently switch the power supply to extend the battery life. Temperature data is automatically saved to the U disk.

Software Technical Features

Simultaneous measurement of multiple devices

Inspection information management

Intelligent data reading

Intelligent breakpoint continuation

Intelligent data Management

Real-time status and curve display



Software copyright registration number
2016SR171562
2020SR0328008

Product overview

DTWX-01G Wireless recorder acquisition system is mainly developed for temperature and humidity measurement scenarios in low-temperature areas where wired equipment is inconvenient to use. It can be applied to large storage grain warehouses, tobacco warehouses, cold storage, ammunition warehouses, equipment rooms and other large areas where temperature and humidity conditions are limited. DTWX-01 has the characteristics of high precision, small size, light weight, large number of channels, data visualization, perfect specification support and so on. It has powerful function, easy to carry and easy to use.



Product overview

DTZ-300BWG Intelligent temperature humidity data acquisition logger is a freely configurable multi-function inspection unit, with 24 24-bit high-precision sampling channels, each channel can be independently configured, supporting thermocouple, platinum resistance, humidity sensor and analog four input modes. The product can be connected to the PC or mobile terminal by wired or wireless to remotely browse real-time data, which is suitable for the temperature field, humidity field, uniformity and volatility test of various temperature (humid) environment experimental equipment, industrial furnace and validation furnace.

DTWX-01G Wireless Recorder Acquisition System



- 80 channels are online at the same time, up to 250 channels
- The whole line of products can be customized according to industry and demand
- Temperature and humidity measurement in high and low temperature large space environment, support remote data monitoring, built-in storage and U disk mode.

System functions and features

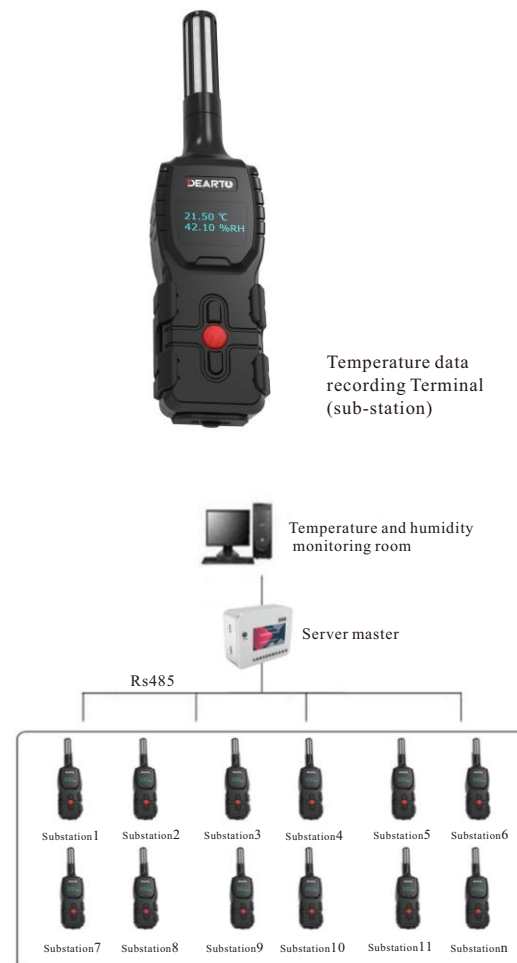
- With wireless data transmission technology, distance is no longer limited by wire points
- Using visual data processing, simple, convenient, fast
- High precision sensor, high precision, wide range
- Long endurance, can work continuously for more than 100 hours
- Small size, light weight, easy to carry
- The master station server is powerful and can work normally without the host computer
- Data and information can be exported freely to Excel files in any format
- Multi-procedure support, suitable for different types of equipment temperature field test
- A maximum of 80 channels can be online at the same time

Server (master) function

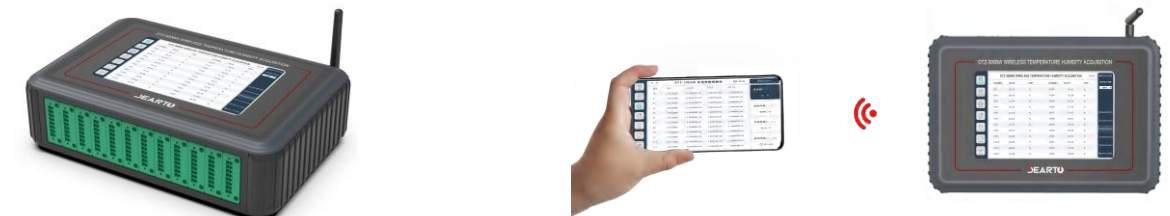
- Data storage Function**
Data can be automatically saved to the local USB disk for data processing after data recording is completed
- Real-time data display function**
The server (master station) has a user interface that can display the data of each working channel in real time after starting data recording.
- Channel work setting function**
It can select channels freely for data recording, intelligently distinguish channels that cannot work properly, and delete the channel from the working channel of the server (master station), effectively avoiding the impact on the efficiency of data collection and ensuring the simultaneity of data collection.
- Data recording terminal can go online automatically**
Server (master station) is automatically connected to the temperature and humidity data recording terminal upon startup, without complex Setting.

Temperature and humidity data recording terminal (sub-station) function

- Real-time display of temperature and humidity data
- Electric quantity display function
- Number display function
- Data correction function
- It can be separated from the server (main station) to carry out the detection work alone
- Support data correction, effectively improve measurement accuracy



DTZ-300BWG Intelligent Temperature Humidity Data Acquisition Logger



PC or mobile users can use Google Browser to log in to the device and remotely view real-time data

Product features

- 7 inch industrial color touch screen display, supporting 24 high precision 24-bit sampling channels.
- Each of the 24 channels can be independently configured for thermocouple, platinum resistance, humidity sensor and analog input mode.
- Each channel provides independent built-in cold end temperature sensor, independent sampling, modular design, temperature measurement accuracy is better than 0.1°C.
- You can edit and configure sensor and sampling-related parameters, such as sensor type, range, sampling time, and sampling interval.
- All 24 channels can be calibrated and corrected independently by single point, piecewise linear or least square method.
- Display, store, and output multiple data formats such as voltage, resistance, temperature, and humidity, Provides encryption algorithm support to encrypt data files, effectively improving security.
- Support RS232, wired network and wireless network communication, can be connected to PC or mobile terminal.
- It provides 24 5V power supply to facilitate the connection of humidity sensor.
- Provides 8 GB internal storage space for data storage. Data can be exported through a USB port.

Power supply	12VDC 2A
Communication interface	Rs232 , LAN , Wireless
Shell material	Aluminum alloy + ABS
Boundary dimension	250mm×170mm×70mm
Instrument weight	1.6kg
Environmental conditions	(5 to 35) °C (0 to 85)%Rh
Storage environment	(0 to 70)°C (0 to 100)%Rh

Technical indicators

Range	Measuring Range	Display resolution	Accuracy	Sampling rate	Sampling mode	Output data type	Note	
K	-200°C to 1300°C	0.01°C	0.5°C	0.2S/ 24channel	24 channels of simultaneous sampling!	Configurable Voltage value Temperature value	It conforms to the ITS-90 temperature scale	
J	-200°C to 900°C		0.5°C					
T	-200°C to 400°C		0.5°C					
E	-200°C to 1000°C		0.5°C					
N	-200°C to 1300°C		0.5°C					
B	250°C to 1820°C		0.8°C@1000°C					
R	0°C to 1768°C		0.7°C@1000°C					
S	0°C to 1768°C		0.9°C@1000°C					
Pt100	-200°C to 950°C	0.001°C	0.05°C@0°C 0.08°C@300°C 0.12°C@600°C	This ensures that the data is synchronized in full real time	Configurable Voltage value Temperature value	1mAExcitation current source		
Humidity	0%Rh to 100%Rh	0.01%RH	1.5%Rh				Configurable Voltage value Relative humidity	5V power supply output

Range	Temperature range	Display resolution	Accuracy
100mV	-10mV~100mV	0.1uV	0.01%+0.008%
1V	0~1V	0.1mΩ	0.02%+0.02%
400Ω	0Ω~400Ω	0.1mV	0.004%+0.004%

Remark:
Accuracy metric: ± (% reading + % full scale)

Product model	Channel number
DTZ-300BWG-12	12
DTZ-300BWG-16	16
DTZ-300BWG-20	20
DTZ-300BWG-24	24
DTZ-300BWG-XX	Custom

Product overview

DTRC-G Wireless real-time validation system, support wireless real-time data transmission, remote programming, convenient and easy to use, improve validation efficiency, accuracy up to $\pm 0.1^{\circ}\text{C}$. The software is specially developed for GMP and meets the requirements of FDA 21CFR Part 11. It is designed with low power consumption and can support more than 150,000 samples.



Product overview

DT Pro-G Wireless temperature/humidity/pressure sterilization can be widely used in equipment validation and environmental monitoring in pharmaceutical, food, biological, chemical and other industries. Compared with the traditional wired validation system, the probe can be conveniently and quickly arranged, and the detection point is physical constraints greatly improve validation efficiency.

DTRC-G Wireless Real-time Validation System



Wireless real-time temperature validation system

Wireless real-time temperature and humidity validation system

System functions and features

- Wireless real-time data transmission, support remote programming function, effectively provide validation efficiency.
- Software meets GMP and GSP requirements.
- Comply with FDA 21CFRPart 11.
- Data cannot be modified and can be traced.
- Comprehensive data analysis, powerful, user-friendly interface.
- System management is secure and reliable.
- Free software upgrade for life.

Technical indicators

Name	Wireless real-time temperature validator	Wireless real-time temperature and humidity validator	Wireless real-time temperature and pressure verification instrument
Product model	DTRC-1G	DTRC-2G	DTRC-3G
Wireless transmission mode	Bluetooth	Bluetooth	Bluetooth
Wireless transmission distance	20m	20m	20m
Measuring range	$-90^{\circ}\text{C} \sim 150^{\circ}\text{C}$	Temperature: $-40^{\circ}\text{C} \sim 85^{\circ}\text{C}$ Humidity: 0%RH~100%RH	Temperature: $-40^{\circ}\text{C} \sim 140^{\circ}\text{C}$ Pressure: 0~600kpa(absolute pressure)
Accuracy measurement	$\pm 0.1^{\circ}\text{C}$	Temperature: $\pm 0.1^{\circ}\text{C}$ Humidity: $\pm 2\%RH$	Temperature: $\pm 0.1^{\circ}\text{C}$;Pressure: ± 0.1 (Full range)
Display resolution	0.01 $^{\circ}\text{C}$	Temperature: 0.01 $^{\circ}\text{C}$ Humidity: 0.01%RH	Temperature: 0.01 $^{\circ}\text{C}$ Humidity: 0.01kpa
Record the frequency	1s ~ 18h	1s ~ 18h	1s ~ 18h
Data recording capacity	64000	Temperature: 32000 ; Humidity: 32000	Temperature: 32000 ; Pressure: 32000
Battery	1700mAh/3.6V high temperature lithium batter		
Probe size	$\phi 24\text{mm} \times 78.6\text{mm}$	$\phi 25.8\text{mm} \times 74.6\text{mm}$	$\phi 25.8\text{mm} \times 89.2\text{mm}$
Material	316L stainless steel +PEEK		
Protection grade	IP68 (Completely waterproof)	IP50 (Dustproof or waterproof)	IP68 (Completely waterproof)

DT Pro Wireless Temperature/Humidity/Pressure Sterilization



Function

- The system consists of a wireless recorder (temperature, humidity, pressure), a data reading workstation, and wireless validation software.
- The system includes wireless validation software, wireless validation probes, data readers, etc. The wireless validation probe has its own battery, which is set up by wireless validation software and data reader, and then placed in the device under test to continuously record the situation in the device, and then read the data through the wireless validation software and perform statistical analysis of the data. Form a report.
- The data reading workstation is divided into a single-hole workstation and a 10-hole workstation. The universal USB serial port is used to connect to the computer, and data communication can be carried out conveniently, efficiently and safely.
- The software realizes data collection, data analysis and report generation, meets FDA 21 CFR Part 11, and supports electronic signature of documents. Support custom stages and verify each stage to generate stage validation report.

Features

- Both Chinese and English versions can be switched.
- Comply with FDA 21CFRPart 11 regulations.
- With data audit tracking function, with three levels of authority (freely assignable authority).
- It has data statistical analysis functions, including large and small values, average value, span, temperature difference at the same time, F0 value test, etc., and can be freely selected according to needs.

Scenes to be used



The system can be applied to GMP pharmaceutical industry, GSP industry, biological industry, medical industry, food industry, transportation industry.

GMP	Steam sterilizer validation / water bath sterilizer validation, rubber plug washer validation / aluminum lid washer validation, freeze dryer validation / cryogenic refrigerator validation, constant temperature and humidity chamber validation / stability incubator validation
GSP	Cold storage validation / refrigerated truck validation, refrigerator / incubator validation, cool storage /normal temperature storage validation
Biological	Stirred fermentation tank validation, culture tank validation, process development data
Food	Pasteurization validation, sterilization tunnel validation, rotary freezer validation, blast freezer validation, cold room validation
Transport	Cold chain process tracking, cabin temperature detection
Medical	High temperature sterilization testing, steam sterilization testing, medical supplies testing

Implemented procedures and specifications

Serial number	Regulation code	Procedure name
1	GBT 30690-2014	The sterilization effect monitoring method and evaluation requirements of small pressure steam sterilizer
2	PDA TR1-2007	Damp heat sterilization validation
3	JJF 1366-2012	Calibration Regulations for Temperature Data Collector
4	JJF 1101-2003	Code for Calibration of Temperature and Humidity of Environmental Test Equipment
Related regulations	"Pharmaceutical Production Quality Management Standards" (revised in 2015) "Guidelines for Pharmaceutical Production validation" (2003 edition) FDA 21CFRPart11 Clause EN285-2006 (German Standard) EN554: 1994 (German Standard) HTM2010 (British Standard)	

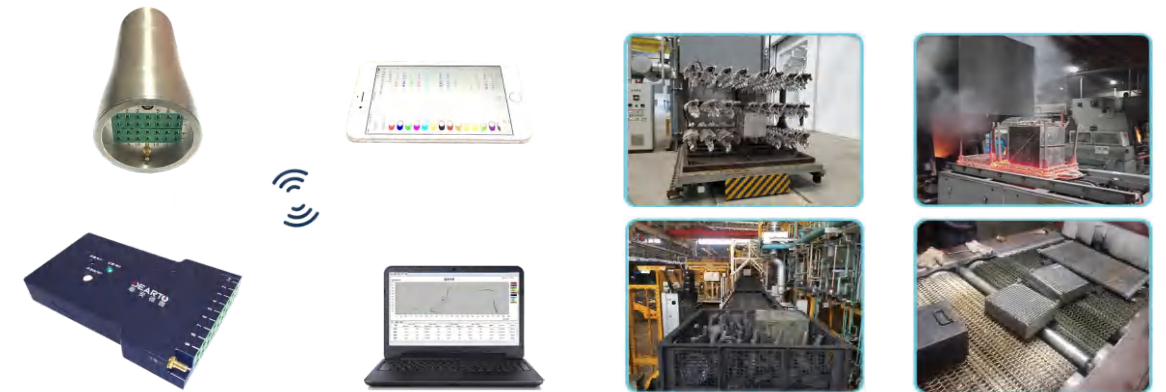
Product overview

DTZ-500G Wireless furnace temperature test system is composed of high temperature measuring instrument, heat insulation box, high temperature thermocouple and wireless terminal. The working principle is to heat the furnace temperature tracker and the painting workpiece simultaneously in the furnace, record the curing temperature of the workpiece and the temperature of the furnace gas during the painting process in real time, and display it in real time through the mobile phone, iPad or PC. In this way, the variation of temperature and the uniformity difference of furnace temperature in the production process can be understood.

Technical indicators

Specification	Temperature Verifier		Temperature humidity tester	Temperature pressure tester
Model	TDLA	TDLB/TDLC(Flexible probe)	MDLA	PDLA
Operating temperature	-90°C to 150°C (Expandable to 400°C with heat insulation box)	-50°C to 150°C (Expandable to 400°C with heat insulation box)	-40°C to 125°C	-40°C to 140°C
Range	-90°C to 150°C	-50°C to 150°C	0 to 100%RH	0 to 100psi 0 to 6.894Bar (Absolute pressure)
Resolution	0.01°C	0.01°C	0.01°C	0.008psi
			0.01%RH	0.01kpa
Accuracy	Low temperature accuracy ±0.2°C below -50°C -50-150°C accuracy +/- 0.1°C	±0.1°C	±0.1°C	±0.1°C
			±2%RH	Pressure ±0.1% full scale
Sensor	Pt100 Class 1/3 DIN	Pt100 Class 1/3 DIN	Temperature:PT100 Humidity:capacitive	Strain
Capacity (recording points)	64,000	64,000	32000 each	32000 each
Record frequency	1s to 18h	1s to 18h	1s to 18h	1s~18h
Battery Life	36 months	36 months	36 months	36 months
Communication method	RS 485 Contact	RS 485 Contact	RS 485 Contact	RS 485 Contact

DTZ-500G Wireless furnace temperature test system



Technical indicators

DTZ-500G Wireless Furnace Temperature Test System					
Measuring points	18channels	Accuracy	±0.4°C	Sensor	K, N, S, T
In furnace time	Customized according to usage scenarios		RAM	8GB (large memory, data can be stored permanently)	
The sampling period	1s to 60s (Can be set according to test requirements)				
Battery	Rechargeable lithium polymer battery ,2200mAh can be used continuously for 50 hours, can be used after 15 minutes of fast charging. If wireless is turned on, it can last for 13 hours on one charge.				
Computer requirements	Windows 98, 2000, XP, vista, win7, etc., can be connected to print out the temperature curve				
Incubator size	Customized according to usage scenarios				
Instrument description	The main chip of the instrument: the original high temperature host chip imported from the United States Insulation material: Nano insulation material imported from Germany Shell: high temperature resistant, corrosion resistant stainless steel Thermocouple Sensor: National Standard I See the technical solution for specific parameters according to the usage scenario				

DTEL-15G Multifunctional process signal calibrator

Product features

- At the same time output and measurement of V, mV, mA, Ω, Hz and other standard signals, as well as a variety of thermocouple (TC) and a variety of thermal resistance (RTD) temperature signal accurate simulation and measurement.
- The host has built-in pH (acidity) meter validation function.
- RTD measurement with custom PRT function, input platinum resistance corresponding to R0, A, B, C and other parameters can be used as A high precision thermometer.
- It can calibrate temperature meter, transmitter, recorder and other secondary instruments, and has the function of analog transmitter.
- 4~20mA output and measurement at the same time of direct 24V power distribution, and can provide 24V DC independent power supply mode.
- When the calibration transmitter measures its circuit signal, it can intuitively display the current parameters and corresponding temperature or pressure parameters without conversion.
- Large backlit LCD screen, full Chinese operation menu, complete functions, convenient for all on-site thermal signal detection and calibration.
- The highest accuracy grade of electrical signal is 0.01, and the factory internal control accuracy is ±0.005%FS.
- Good stability, the instrument internal temperature system automatic correction, minimum temperature coefficient ±0.0003%FS/°C.
- Maximum seven-digit display, high output and measurement resolution (mV resolution: 1μV, Ω resolution: 1mΩ).
- Compact size, easy to carry, anti-seismic and anti-fall silicone shell, to avoid accidental fall loss.
- Fully enclosed film touch button, 500,000-1 million ultra long service life.
- Support omega (thermal resistance) signal two, three, four line output and measurement.
- All signals can automatically step and ramp output, and can set any step (ramp) point and step (ramp) time.
- It can record on-site detection data in real time and realize paperless recording function.
- External high precision cold end compensation probe, can be manually or automatically cold end temperature compensation and setting.
- Using high capacity polymer rechargeable battery, continuous working time of more than 10hours.
- Standard gold-plated test line, less introduction of contact potential and contact resistance, to ensure high precision calibration.



DTEL-15G Multifunctional process signal calibrator

Software function

1. Mark the time and slope between any two points.
2. Temperature annotation at any time point.
3. Any position, any range of curve scaling display.
4. Temperature difference curve display in any time range.
5. Complete furnace database (SMT)/temperature control program (heat treatment), equipment database.
6. Complete process analysis report PWI.
7. Simulation curve function, process optimization, test date and time.
8. Can directly print the test report or output

Features

- The use of imported TF memory chip, accident will not lose data.
- Store 8G data at the same time, more than automatic coverage; One-button operation, manual, temperature, time start, easy to use.
- Independent development of all Chinese data setting and analysis software, operation at a glance.
- Support wireless connection through PC or mobile terminal, real-time display of temperature curve data.

Temperature measurement process

- According to the customer's requirements and the use environment, use a furnace temperature tracking device for temperature measurement. After connecting the thermal power puppet, put it in the heat insulation box and cover the heat insulation box to prevent heat leakage. Open your mobile phone, iPad, or desktop computer, control the furnace temperature tracking instrument in real time, and analyze the temperature data in real time. After the heat treatment is over, after the heat insulation box is cooled, take out the recorder.

DTBR-G Black body radiation source is mainly used to calibrate radiation thermometers, infrared thermal imagers and other radiation temperature measuring instruments. The main technical indexes of the black body radiation source are the emissivity of the black body cavity, the uniformity of the target surface, the stability of temperature control and the stability of the radiation temperature of the cavity.

Spherical Blackbody Radiation Source



DTBR-S50G	Low Temperature	-50°C to 100°C
DTBR-S30G		-30°C to 100°C
DTBR-S800G	Medium Temperature	50°C to 800°C
DTBR-S1200G	High Temperature	100°C to 1250°C
DTBR-S1600G		500°C to 1600°C

Tube Blackbody Radiation Source



DTBM-50NG	Low Temperature	-50°C to 80°C
DTBM-30NG		-30°C to 80°C
DTBM-550G	Medium Temperature	50°C to 550°C
DTBM-700G		50°C to 700°C
DTBM-1200G	Medium Temperature	100°C to 1200°C
DTBM-1500G	Ultra high Temperature	500°C to 1600°C
DTBM-2500G		800°C to 2500°C
		800°C to 3000°C

Portable Blackbody Radiation Source



DTBM-20NG	Low Temperature	-50°C to 80°C
DTBR-T50BG	Normal Temperature	30°C to 50°C
DTBM-20NG		-20°C to 650°C
DTBM-500BG	Medium Temperature	PT + 10°C to 500°C
DTBM-500MG		50°C to 500°C

Calibration Device For Ear Temperature/ Frontal Temperature/Body Temperature Instrument



DTME-50G	Ear Temperature/Frontal Thermometer Calibration Device
DTSE-50G	Thermometer Calibration Device

DTBR-G Blackbody Radiation Source

Technical indicators

Specification	Low Temperature Blackbody Radiation Source		Medium Temperature Blackbody Radiation Source		High temperature Blackbody Radiation Source
Model	DTBR-S50G	DTBR-S30G	DTBR-S800G	DTBR-S1200G	DTBR-1600G
Temperature range	-50°C to 100°C	-30°C to 100°C	50°C to 800°C	100°C to 1250°C	500°C to 1600°C
Emissivity	Superior to 0.998		Superior to 0.998		Superior to 0.998
Mouth	Φ65mm(Support customization)		Φ65mm(Support customization)		Φ50mm
Cavity shape	Spherical		Spherical		Spherical
Stability	≤0.1°C/10min		≤(Largest of 0.1°C and 0.1%t)/10min		≤(Largest of 0.1°C and 0.1%t)/10min
Power	3.0KW		4.0KW		6.5KW
Target surface uniformity	≤0.15°C		≤(0.15°C and 0.15%t were the largest)		≤(0.15°C and 0.15%t were the largest)
Resolution	0.01°C		0.1°C		0.1°C
Dimension	850×550×1100mm		550×600×800mm		730×780×1470mm
Net weight	About 100Kg		About 60Kg		About 150Kg
Specification	Low Temperature Blackbody Radiation Source		Medium Temperature Blackbody Radiation Source		
Model	DTBM-50G	DTBM-30G	DTBM-550G	DTBM-700G	
Temperature range	-50°C to 80°C	-30°C to 80°C	50°C to 550°C	50°C to 700°C	
Emissivity	Superior to 0.995		Superior to 0.995		Superior to 0.995
Mouth	Φ65mm		Φ65mm		Φ65mm
Stability	≤(largest of 0.1°C and 0.1%t)/10min		≤(largest of 0.1°C and 0.1%t)/10min		≤(largest of 0.1°C and 0.1%t)/10min
Power source	220VAC 50Hz		220VAC 50Hz		220VAC 50Hz
Power	3KW		3KW		1.2KW
Target surface uniformity	≤(0.15°C and 0.15%t were the largest)		≤(0.15°C and 0.15%t were the largest)		≤(0.15°C and 0.15%t were the largest)
Resolution	0.1°C		0.1°C		0.1°C
Dimension	300×215×280(mm)		240×375×290(mm)		300×450×370 mm
Net weight	About 6Kg		About 6.5Kg		about 15Kg
Specification	High Temperature Blackbody Radiation Source			Ultra-high Temperature Blackbody Radiation Source	
Model	DTBM-1200G	DTBM-1500G	DTBM-1600G	DTBM-2500G	
Temperature range	100°C to 1200°C	500°C to 1500°C	500°C to 1600°C	800°C to 2500°C(vacuum) 800C to 3000C(Vacuum, inflation)	
Emissivity	Superior to 0.995			Superior to 0.99	
Mouth	Φ50mm			Φ50mm / Φ25mm(3000°C)	
Stability	≤(largest of 0.1°C and 0.1%t)/10min			Operating temperature 0.1% t°C/10min	
Power	2.0KW			5.5KW	
Target surface uniformity	≤(0.15°C and 0.15%t were the largest)			≤ 0.15% t°C of operating temperature	
Dimension	300×530×370			Furnace: 1150×500×1330 Transformer: 650×570×745 Temperature control device: 600×600×1420	
Net weight	About 20Kg			About 120Kg	
				About 500Kg	

Product overview

DTBF-50G Portable black body radiation source is designed for human body temperature measurement application, infrared NETD calibration, response rate test of small cost-effective black body. It is specially used for correcting the real-time relative temperature drift of infrared temperature rapid screening instrument, infrared thermal imaging temperature measurement alarm system and other products



Product overview

DTME-50G Ear temperature/frontal temperature/body temperature instrument calibration device is mainly used to calibrate human infrared ear thermometer, infrared frontal temperature meter and other non-contact infrared thermometer calibration. This product is a high precision automatic control digital display temperature calibrator device, it has the characteristics of good temperature stability, uniform temperature field, high temperature control precision, low noise, good reliability, long life.

Portable Blackbody Radiation Source



Technical indicators

Specification	Portable Blackbody Radiation Source		
Model	DTBM-20NBG	DTBM-500BG	DTBM-500MG(Non-point source)
Temperature range	-20°C to 150°C	PT+10°C to 500°C	50°C to 500°C
Emissivity	Better than 0.995	Better than 0.995	Better than 0.995
Mouth	Φ65mm	Φ50mm	Φ120mm
Temperature stability	±0.1°C	≤(The greater of 0.1°C and 0.1%/10min)	±0.10 °C, 50 °C When /± 0.30°C, 300 °C When /± 0.40 °C, 500°C When
Power supply	220V AC 50Hz	220VAC 50Hz	220VAC 50Hz
Power	350W	500W	500W
Target plane uniformity	±0.15°C	≤(The greater of 0.15°C and 0.15%)	±0.10°C, 50°C When /± 0.60 °C, 300°C When /± 1.00 °C, 500°C When
Temperature resolution	0.01°C	0.1°C	0.1°C
Overall dimensions	200×320×280	260×200×260(mm)	260×200×360(mm)
Net weight	8.3Kg	6Kg	About 10Kg

Specification	Portable Blackbody Radiation Source		Double Cavity Black Body Radiation Source
Model	DTBF-T50BG	DTBR-FM3050G	DTBR-ST500G
Temperature range	30°C to 50°C	30°C to 50°C	-20°C to 500°C, -20°C to 100°C, 50°C to 500°C -20°C to 650°C; 50°C to 650°C(Optional)
Emissivity	Better than 0.995	Better than 0.95	Better than 0.995
Mouth	Φ60(mm)	70×70(mm)	Φ65mm, Φ50mm(Optional)
Temperature stability	≤0.01°C/30 min	±0.05°C/30min	≤0.1%/10min, (The greater of 0.1°C and 0.1%/10min)
Power supply	220V ± 10% 50Hz	220V AC 50Hz	220V AC 50Hz
Power	100W	60W	850W
Working temperature	10°C to 32°C, No condensation	0°C to 40°C	0°C to 40°C
Ambient temperature coefficient	±0.01 °C/10 °C (Typical values)	±0.01 °C/10 °C (Typical values)	/
Overall dimensions	358×154×251(mm)	140×250×180(mm)	380×220×320(mm)
Net weight	8.3Kg	2.5Kg	About 15.0Kg

DTME-50G Calibration Device For Ear Temperature/ Frontal Temperature/Body Temperature Instrument




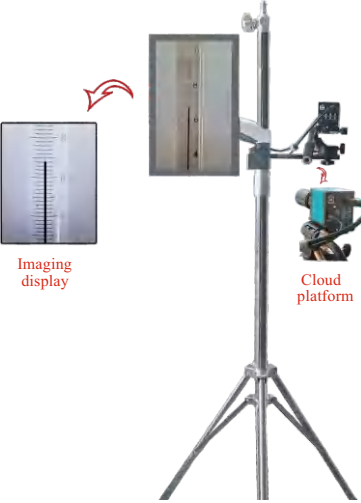


Product features

- Adopting double - chamber side stirring method, temperature field uniformity is good.
- Intelligent PID control, with good temperature field stability and uniformity.
- Adopt high resolution display instrument, resolution 0.001°C.
- Imported compressor, stable and reliable performance, optimized refrigeration system cooling faster.
- RS-232 / RS-485 communication interface optional, can realize computer control.

Technical indicators

Specification	Ear Temperature/Frontal Thermometer Calibration Device	Thermometer Calibration Device
Model	DTME-50G	DTSE-50G
Temperature range	0°C to 50°C(32°C-42°C)	0°C to 100°C
Display resolution	0.001°C	0.001°C
Temperature field uniformity	≤0.01°C	≤0.01°C
Temperature stability	±0.01°C/10min	±0.01°C/10min
Cavity diameter	φ10mm / φ50mm	φ130mm
Radiation coefficient	0.999	0.999
Power supply/input	220V/2kw	220V/2kw
Transition time	< 10min	< 10min
Environment temperature	15°C to 30°C	15°C to 30°C
Working medium	Antifreeze	Antifreeze

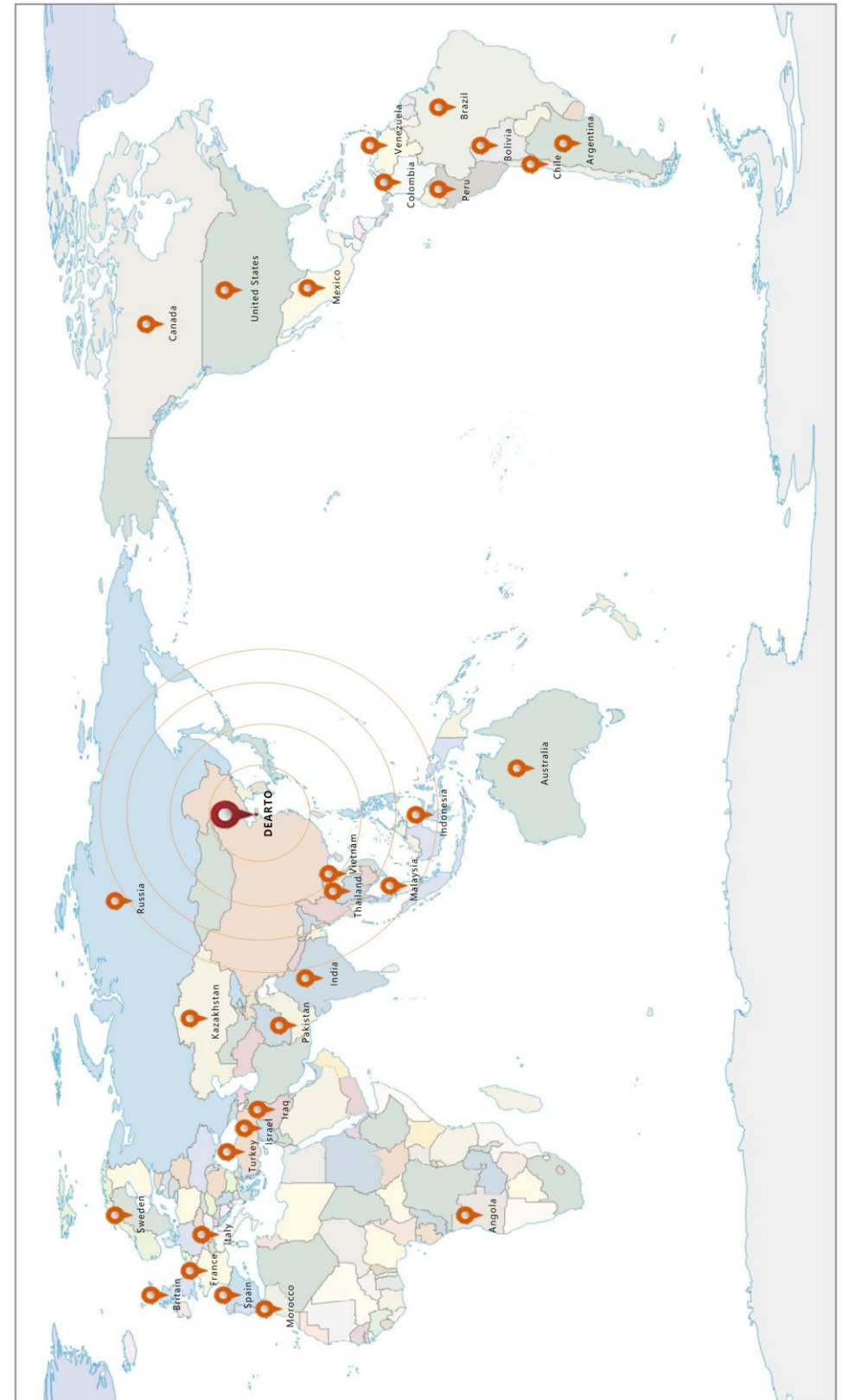
	<p>Hand Switch</p> <p>The manual transfer switch uses a specially machined low potential terminal to reduce the parasitic potential from the front-end wiring to data scanning acquisition. It can be compatible with the wiring of thermocouple, two-wire heating resistance, three-wire heating resistance and four-wire heating resistance. It can automatically complete the switching function of validation of three-wire heating resistance and eliminate the internal lead resistance of three-wire heating resistance.</p>
	<p>Thermocouple Quick Furnace Positioning Device</p> <p>The positioning device of thermocouple quick loading furnace is used for accurate positioning in the process of thermocouple validation. Gently pull the tray to make the validation furnace run along the track direction, and the thermocouple loading process can be completed quickly and accurately. The working end of thermocouple beam can be accurately sent into the center of uniform temperature field of validation furnace, and the accuracy and working efficiency of furnace positioning can be improved. The device can also be used as a whole, combining thermocouple validation furnace, precision temperature controller, support for a couple, special stand, zero temperature thermostat placement platform, compensation wire and other connections together, avoiding the tedious wiring and instrument placement problems, is the ideal supporting facilities for thermocouple validation and calibration.</p>
	<p>DT1000G Thermocouple Cleaning Annealing Unit</p> <p>DT1000G thermocouple cleaning annealing device is designed in accordance with the "JJG75-1995", "JJG167-1995", "JJG141-2013", "JJG668-1997" validation regulations, and the standard and working precious metal thermocouples are energized cleaning and annealing before validation.</p> <p>Technical indicators</p> <ul style="list-style-type: none"> Working voltage: Communication 220V±10%/50HZ Control mode: Smart touch screen Working current: 0 to 20A Accuracy of current regulation: 0.5 Scale Current display resolution: 0.1A Clean the number at the same time: 3 Time adjustment accuracy: 1min Environment temperature: 0°C to 30°C Relative humidity: ≤85%RH Overall dimensions mm : 1000(L)x460(W)x1770(H)
	<p>DTD-02G Glass Liquid Thermometer Reading Device</p> <p>DTD-02 Liquid glass thermometer reading device is a reading device for testing liquid glass thermometers. It uses CCD technology to display the scale line of the thermometer on the LCD monitor, so that the scale line can be enlarged, and it can also be used for the observation of other images.</p> <p>Product features</p> <ul style="list-style-type: none"> The reading is clear and accurate, which greatly reduces the eye fatigue caused by long observation time and avoids the occurrence of errors. Observation field is large and can be observed by one or more people at the same time. Magnification is adjustable. Adjust azimuth sensitivity. The whole set of device includes observation and display part, sensitive adjustment, easy to move. Avoid testing high temperature glass liquid temperature timing, constant temperature tank high temperature medium evaporation harmful gas, close observation of the inspectors glass liquidHealth effects when the body thermometer is calibrated. <p>Execution standard</p> <ul style="list-style-type: none"> JJG161-2010 "Standard mercury thermometer" JJG130-2011 "Vitreous thermometer for working use" JJG131-2004 "validation regulation of electric contact glass mercury thermometer" JJG618-1999 "validation regulation of high precision glass mercury thermometer" JJG207-92 "validation regulation of glass liquid thermometer for meteorological use"



<p>Digital Precision Pressure Gauge</p> <ul style="list-style-type: none"> Measuring range: -100kPa ~ 1kPa ~ 250MPa. Accuracy: ±0.02%, ±0.05%, ±0.1%, ±0.2%, ±0.5%. Measuring medium: Compatible with the sapphire phase of the pressure sensing part. Power source: four No. 5 batteries. 	
<p>Pressure Source Series</p> <div style="display: flex; justify-content: space-around;"> <div data-bbox="1717 665 1914 830">  <p>Manual pressure source</p> </div> <div data-bbox="2104 665 2361 830">  <p>Manual water pressure source</p> </div> <div data-bbox="2558 644 2806 830">  <p>Hand hydraulic source</p> </div> </div>	
<p>DTY2016 Automatic Pressure Calibration Table</p> <ul style="list-style-type: none"> Pressure range: (-0.095 ~ 0 ~ 6) MPa The medium is air (0 ~ 70 ~ 100) MPa The medium is oil or water (-0.1 ~ 6) MPa medium is air Three output connectors: external standard pressure module, and external 2 gauges; Current measurement: (0 ~ 30) mA accuracy: 0.02%R.D+0.005%F.S Voltage measurement: (0 ~ 30) V accuracy: 0.02%R.D+0.005%F.S 24V DC power supply: multiple pressure transmitters can be supplied at the same time (load ≤500mA) Switch measurement: pressure switch on and off automatic measurement Display resolution: current, voltage 6 bits, pressure 5 bits Pressure accuracy class: 0.05%F.S, 0.02%F.S Pressure control fluctuation: 0.005%F.S last digit ±0 words Power supply: AC220V+10%/50Hz Overall dimensions: 600mm×400mm×280mmWeight: About 25kg 	
<p>DTY2005 Fully Automatic Pressure Calibration System</p> <ul style="list-style-type: none"> Pressure range: micro pressure: (-20 ~ 20) kPa medium is air Air pressure: (-0.095 ~ 0 ~ 30 ~ 60)MPa medium is air Oil pressure: (0 ~ 70 ~ 100) MPa The medium is oil Water pressure: (0 ~ 70 ~ 100) MPa The medium is water Each part has three output connectors: external standard pressure module, and external 2 gauges; Current measurement: (0 ~ 30) mA accuracy: 0.02%R.D+0.005%F.S Voltage measurement: (0 ~ 30) V accuracy: 0.02%R.D+0.005%F.S 24V DC power supply: multiple pressure transmitters can be supplied at the same time (load ≤500mA) Switch measurement: pressure switch on and off automatic measurement Display resolution: current, voltage 6 bits, pressure 5 bits Pressure rating: 0.05%F.S, 0.02%F.S Pressure control fluctuation: 0.005%F.S last digit ±0 words Power supply: AC220V+10%/50Hz Dimensions: 1380mm×800mm×1200mm (can be customized according to user requirements) Weight: 120kg 	



Sales network



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