DEARTO Instrument·Quality Model

Professional Manufacturer of
Temperature and Humidity
Precision Calibration Instrument

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Website QR code

Website QR code

Disclaimer: The shape of the product is subject to the actual product. This manual is for reference only.

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 been recognized as a **"High-Tech Enterprise," a Shandong Provincial "Specialized, Refined, Distinctive and Innovative" SMEs, a Tai'an Gazelle Enterprise, a Shandong Innovative SME, a Technology-Based SME, and a Shandong Provincial Civil-Military Integration Enterprise.** It is also a member of the National Temperature Metrology Committee and a council member of the Shandong Metrology and Testing Society. With a professional R&D team and extensive experience in temperature and humidity calibration, the company continues to lead in its field.

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

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

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 & other countries.

CONTENT

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 Hygrograph

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 Hygrograph 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

Honor Of Qualification

Software Copyright Registration Certificate


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


Uncertainty Calculation Software


Industrial RTD Uncertainty Calculation Software


Data correction software


Digital Temperature Indicator and Regulator Verification System


Fully Automatic Photographing, Recognition and Verification System for Thermohygrometers


Temperature and Humidity Calibration Chamber Control System


Mechanical Thermohygrometer Calibration System


Digital Thermohygrometer Automatic Calibration System


High-Precision Digital Thermometer System


Dual-Channel Precision Thermometer


Temperature and Humidity Field Testing System


Automatic Temperature Field Testing System


Wireless Intelligent Temperature Field Inspection System


Wireless temperature/humidity/ pressure verification system

Automatic Verification System

Product selection navigation map

Thermocouple & RTD Automatic Calibration System

DTZ-01G Thermocouple and Resistance Temperature Detector Automatic Calibration System

DTZ-NTC Thermistor Automatic Calibration System

DTZ-01SG Noble Metal Thermocouple Wire Automatic Calibration System

DTZ-02SG Base Metal Thermocouple Wire Automatic Calibration System

Multi-Furnace Thermocouple & RTD Automatic Calibration System

DTZ-02G Multi-Furnace Thermocouple & RTD Automatic Calibration System

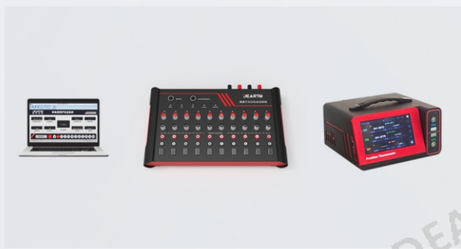
DTZ-02AG Group Furnace Automatic Calibration System for Standard Thermocouple

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

Electronic Scanning Switch Automatic Test System

DTZ-WK Electronic Scanning Switch Automatic Test System

Temperature Switch Automatic Calibration System



DTZ-TS Temperature Switch Automatic Calibration System

Thermocouple and Resistance Temperature Detector Automatic Calibration System

Overview

DTZ-01 / DTZ-02 Type automatic calibration system for thermocouples and resistance temperature detector is mainly used for the Automatic calibration and verification of temperature sensors such as working thermocouples, industrial resistance temperature detector, glass liquid thermometers, bimetallic thermometers, and pressure thermometers.This system can control 1-10 calibration furnaces simultaneously. Each calibration furnace can verify 10 thermocouples at a time. It supports the grouped verification of various industrial platinum and copper resistance temperature detector, and can verify 100 thermal resistors at a time, meeting the requirements of batch detection in a short period.

PC-Based Professional Calibration Software

Verification Items

- It supports the automatic verification/calibration of first-class (S, R, B) standard thermocouples, second-class (S, R, B) standard thermocouples, and working thermocouples (S, R, short S, short R, B, K, N, E, J, T, EA-2, Wre3-WRe25, WRe5-WRe26).
- It supports the automatic verification/calibration of various industrial platinum and copper thermal resistors (Pt100, Pt10, Pt-X, Cu50, Cu100, Cu-X, BA1, BA2) and integrated temperature transmitters (0-10mA, 4-20mA, 1-5V).
- It supports the automatic verification/calibration of thermocouple wires (SP, SN, RP, RN, BP, BN, KP, KN, NP, NN, JP, JN, EP, EN, TP, TN). The system software supports standard thermocouples of types S, R, B, and T, as well as standard platinum resistance thermometers.
- It supports the secondary verification function for Class I Type-S, Class I Type-R, and Class II Type-B working noble metal thermocouples.
- The system integrates the records from two verification cycles to generate a consolidated result report.
- It can verify/calibrate glass liquid thermometers, bimetallic thermometers, pressure thermometers, etc. through a man-machine combined approach, automatically process data, and generate record tables.

Technical Parameters

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		

Procedures / Standards

Code	Name of Procedure (Specifications)	Code	Name of Procedure (Specifications)
JJG75-2022	Regulation for Verification of Standard Platinum-Rhodium 10 - Platinum Thermocouple	JJF1098-2003	Calibration Specification for Thermocouple and Thermal Resistance Automatic Measurement System
JJG141-2013	Verification regulations for noble metal thermocouples for work	JJG130-2011	Verification Regulation of Glass Liquid Thermometer for Work
JJF1637-2017	Low-cost metal thermocouple calibration procedures	JJG161-2010	Verification Regulation of Standard Mercury Thermometer
JJF1991-2022	Calibration Specification for Short-Type Base Metal Thermocouples	JJF1909-2021	Verification Regulation of Pressure Thermometer
JJG668-1997	Verification regulations for platinum-rhodium 10-platinum and platinum-rhodium 13-platinum short thermocouples for work	JJF1184-2024	Technical specification for temperature field test of thermocouple verification furnace
JJG368-2000	Verification regulations for copper-copper-nickel thermocouples for work	JJF1908-2021	Verification Regulation of Bimetal Thermometer
JJG229-2010	Verification Regulations of Industrial Platinum and Copper Thermal Resistance	JJF1183-2007	Temperature transmitter calibration specifications
JJF1262-2010	Calibration Specification for Armored Thermocouple	AMS2750F	High temperature measurement
JJF1176-2024	(0-2300°C Calibration specification for tungsten-rhenium thermocouple	JJF1030-2023	Specification for technical performance test of constant temperature bath

PC-Based Professional Calibration Software

Calibration/Verification Scope

Verification / calibration function	Divide the typ	Grade	Remarks
Standard thermocouple	S,R,B	Class I & Class II	Standard couple
Thermocouples for work	S,R, short S and short R	Grade I & II	Noble metal thermocouple for work
	B	Grade II & III	
	K,N,E,J,T,EA-2,etc	Grade 1 , 2	Base metal thermocouple
	WRe3-WRe25,WRe5-WRe26		Working tungsten-rhenium thermocouple
Industrial resistance temperature detector	Pt100,Pt10,Cu50,Pt-X,Cu-X,Cu100	Grade AA , B , C , etc	Second line, third line, four line system
Temperature transmitter	0-10mA,4-20mA,1-5V		Voltage type, electric current type
Noble metal thermocouple wire	SP,SN,RP,RN	Standard grade (class I & II) , grade I & II	Platinum rhodium 10 alloy, Platinum rhodium 13 alloy
	BP,BN	Standard grade (class I & II) , grade II & III	
Platinum-rhodium thermocouple filament	SP , SN (pure platinum) RP , RN (pure platinum) BP : platinum-rhodium 30 alloy, BN : platinum-rhodium 6 alloy		Platinum rhodium 30 alloy
Base metal thermocouple wire	KP, KN, NP, NN, JP, JN, EP, EN, TP, TN	Grade I , II & III	Nickel-Chromium Alloy (Ni-Cr Alloy) Nickel-Chromium-Silicon Alloy (Ni-Cr-Si Alloy) Copper-Chromium Alloy (Cu-Cr Alloy)

Product Features

- Support single-furnace Automatic calibration system, double-furnace Automatic calibration system, group furnace Automatic calibration system.
- Support mixed calibration, group calibration; support a variety of models of imported digital tables and high-precision temperature measurement instrument communication protocol.
- Support independent selection of different models of calibration furnace and standard at the same time.
- Supports constant temperature sources from different manufacturers, with selectable temperature control modes for autonomous operation.
- Support a variety of thermocouple reference end processing methods, supports zero degree thermostat compensation or Automatic room temperature compensation.
- Supports temperature control using standard thermocouples, enhancing precision, speed, and stability.
- Support electronic signature function. With power-down protection function, you can choose whether to continue testing/calibration after power supply is restored according to your needs.
- The software features mandatory verification and overtemperature protection, facilitating diversified customized testing for client-specific requirements.
- Incorporates advanced professional PID algorithms, supporting self-tuning for calibration furnace PID control, with automatic parameter saving after tuning completion.
- Support multimedia sound alarms, smart prompts for startup, completion and error during the testing process.

Main Interface

Thermocouple Verification Operation Interface

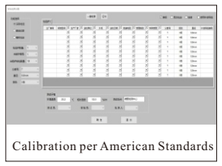
- Support automatic channel checking and filtering functions, and automatic prompts for data abnormalities.
- Support electronic signature function.
- The verification completed verification data is automatically saved to the database.
- It supports group verification/calibration functions, and can verify 100 pieces at one time, and can verify/calibrate various industrial platinum and copper thermal resistors (Pt10, Pt100, Pt-X, Cu50, Cu100, Cu-X) in 10 groups to improve detection efficiency.
- It supports the input of transmitter (0-10mA, 4-20mA/1-5V) information, and independently edit the detected information such as the upper temperature limit, lower temperature limit, accuracy, compensation wire, current transmitter load resistance, etc.
- It supports mixed verification/calibration functions. Each verification furnace can set the measured index number and the number of inspections separately. The same verification furnace can verify/calibrate the thermocouples with different index numbers, and automatically process data and result judgment.
- It supports summary and display of operating status information of multiple verification furnaces, which facilitates viewing and management of the verification process. You can view the current temperature, set temperature, temperature change rate and current process of the verification furnace.
- It supports fully automatic verification, realizes automatic temperature control, data monitoring, data collection and data processing, automatically generates reports and saves records; supports database search query.
- The system is better than the requirements of JJF1098-2003 "Calibration Specifications for Automatic Measuring Systems for Thermocouples and Thermoresistances".
- Statistical management is integrated and multi-threaded, with compatibility and self-diagnosis capabilities.
- The system software is compatible with operating systems such as Windows 2000, XP, Windows 7, Windows 8, Windows 10, etc., and is practical, professional and open, and can be compatible with supporting equipment from different manufacturers.
- The core technology has completely independent intellectual property rights, and is independently developed in accordance with relevant national verification regulations and standardized standards. It also has dynamic simulation verification scenarios to provide customers with comprehensive after-sales and upgrade guarantees.

Exclusive Features

- Supports the US standard verification and complies with the requirements of the US standard "AMS2750F Aerospace Materials Standard High Temperature Measurement" and the ATSM US material standard ATSM E230/E230M-23.
- Supports the merging verification of the low-temperature section and high-temperature section of the thermocouple, automatically selects the constant temperature source and standardizer, and automatically merges the original report; automatically selects the standard platinum resistor as the standardizer below 300℃, and automatically selects the standard thermocouple in the high-temperature area, without manual modification of the standardizer type.
- The content of the inspected information title is customized; the inspected information title entries are rich (factory number, specifications and models, manufacturers, inspection unit, appearance, inspection date, insulation resistance, management category, special management) can be independently selected and defined to meet the needs of different customers.
- Intelligent search function: You can search with one click intelligently based on the inspected sensor information (check completion time, check category, score number, level, check certificate number, and whether you pass).
- It supports custom settings at the sensor level under inspection to facilitate customers' requirements for sensor accuracy screening.
- Quick copy function: The original verification record supports one-click quick copying to the inspected information.
- Compensation wire database management function, prefabricated compensation wire correction parameters, quickly select compensation wires according to the number and automatically enter correction values.
  According to the tolerance calculation method on the procedure, the corresponding tolerance is automatically generated when adding measurement temperature points outside the procedure.
- After the verification is completed, the thermocouple level will be automatically determined based on the detection of the thermocouple error.
- Automatically update the inspected diameter information after checking armor
- Supports free setting of 10 temperature detection points, and the high and low temperature detection points automatically switch standard devices and constant temperature sources.
- During the verification process, the system software has the automatic correction function of temperature control deviation to ensure the accuracy of the detection process data.
- During the verification process, the results can be selected based on the options that the data being tested is unqualified and the data repeatability is poor.
- It is equipped with PC-end Detu Thermotech Calculator software/WeChat APP mini program to realize the automatic temperature calculation of various common sensors such as working thermocouples, industrial thermocouples, standard thermocouples, standard platinum resistors, temperature transmitters, thermistors, etc.


Multimedia Audio Alarm


User-Defined Information


Calibration per American Standards


Furnace Configuration Interface


Temperature Scale Conversion Software

Software Copyright Registration Number			
	2013SR024368	2016SR107593	2022SR0308254
	2015SR104859	2016SR107498	2022SR0301664
	2015SR105857	2020SR1061905	2022SR0299401

DEARTO Instrument · Quality Model

Professional Reports & Custom Certificate Generation

- Automated Generation of Verification, Calibration, and Custom Original Test Records。
  The verification record table can be customized to facilitate the quick search of original verification records of different types and contents.
- Supports trace modification of the original verification record table, automatically calculates the verification conclusion after modifying the original data, and automatically record and save it to the database for subsequent review and traceability.
- The standardized format Word certificate will be automatically issued after the verification is completed.
- The Word version verification/calibration certificate function can be previewed.
- Custom Word Certificate Template, customers can customize Word Certificate Information.


Thermal Engineering Calculator

Uncertainty Analysis and Evaluation

- Supports automatic calculation of thermocouple and thermal resistance uncertainty, displays uncertainty component summary table and supports viewing all calculation processes of each component
- Equipped with professional automatic testing software for uncertainty repeatability.
- Supports automatic testing and verification system thermocouples, low-temperature thermocouples, and thermoresistance repeatability; supports use as standard building tools to generate uncertainty component summary tables and uncertainty evaluation reports in Word format.
- It is equipped with PC-end Detu Thermal Calculator Software/WeChat Mini Program, providing a variety of commonly used calculation formulas for industrial thermocouples, industrial thermocouples, standard thermocouples, standard thermocouples, temperature transmitters, and thermistors.


Uncertainty Component Calculation Process

Professional version of automatic testing system software

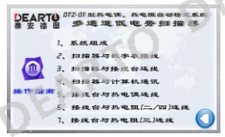
- Automatically complete the "Calibration Specification for Automatic Measuring System of Thermocouple and Thermoresis Resistance" parasitic potential and channel data difference test.
- Automatically test low-potential scanner/scanning conversion switch (standard thermocouple automatic system, working thermocouple automatic system, industrial thermoresistive automatic system), automatically perform data acquisition, automatic calculation and result judgment, objectively ensuring the accuracy and working efficiency of the detection data.
  1) Supports automatic testing of all series of low potential scanners。
  2) Automatic channel data check, real-time communication check, abnormal prompts, automatic repeated tests, and resume operation before testing.
  3) Intelligent testing process control, automatic completion of parasitic potential project testing.
  4) Intelligently guided data difference between channels to test the project, prompting users to switch signal sources in time through pop-up windows and voice.
  5) The verification data is displayed in real time, making it easy to view in time.
  6) The verification data is saved in real time. After the system exits abnormally or stops manually, the data verification can be continued.
  7) When continuing the calibration, you can reselect the calibration start position.
  8) Supports simulation verification, which facilitates systematic learning and demonstration.
  9) Supports exporting test data to Excel and WPS record files.


Uncertainty Components Data Interface


Automatic Test Software Operation Interface

Exclusive Features of Low-EMF Scanner

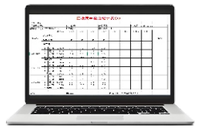
- Low potential scanner adopts 7-inch LCD control display：
  It can monitor the standard, the inspected channel position and status in real time, and switch the standard and inspected channel position; it can carry out verification/calibration work when it is disconnected from the upper computer.
- Convenient and fast query function: Built-in quick guide to how to use the product, customers can query the system instructions at any time, including practical functions such as standards, inspection, inspection procedures and maintenance.



Overview

DTZ-01S Noble Metal Thermocouple Wire Automatic Calibration System is a fully automatic metrology and testing platform tailored for the production and manufacturing process of noble metal thermocouple wires. Its core technology focuses on noble metal platinum-rhodium wire/platinum-rhodium thin wire thermoelectric potential measurement, paired platinum-rhodium thermocouple calibration, standard platinum-rhodium thermocouple calibration, and industrial noble metal thermocouple calibration/verification.

DTZ-01S Noble Metal TC Wire Automatic Calibration System



PC-Based Professional Calibration Software

Features / Advantages

Flexible and compatible with multiple types of thermocouples	Compatible with standard thermocouples (S, R, B, ST), single-stage noble metal wire positive/ negative pole independent and bipolar pairing test.
Support simultaneous batch detection of positive and negative pole pairs	It can simultaneously measure the thermoelectric potential of 8 positive platinum-rhodium wires and 8 negative platinum-rhodium wires with high precision. Relying on multi-channel parallel processing technology, it greatly shortens the test time of a single batch and significantly improves the batch verification efficiency.
Support bipolar method and homonymous method simultaneous calibration	It can simultaneously perform forward and reverse polarity sequence verification and same polarity comparison on two sets of thermocouples, and realize measurement result review, abnormal diagnosis and dynamic optimization of production process parameters based on multi-dimensional data cross analysis.
Integrated high temperature furnace segmented PID smart temperature control	A multi-stage PID algorithm is used for adaptive adjustment of the temperature rise process in the low temperature section to achieve precise control and fluctuation suppression of the entire temperature range. The real-time current monitoring and load protection mechanism effectively avoids the risk of overload burning, ensuring the stability of the calibration process and the safety of the equipment.
Optimizing the adaptive interface of multi-channel low potential scanner	Automatically adapt to the bipolar method and the same-name pole method measurement mode to achieve dual-mode synchronous measurement function, simplify the operation process and eliminate measurement errors caused by wiring differences.
Optimizing the linear temperature rise control of palladium spot furnace	Design a high-precision temperature control algorithm based on national standards to ensure that the heating process strictly meets the linear rate requirements, accurately reproduce the palladium point platform, and ensure the stability and consistency of the Pt/Rh filament thermoelectric potential measurement benchmark.
Support manual verification and multi-dimensional data fusion	Provides a fully parameter-adjustable manual operation interface, compatible with single/batch data acquisition modes, supports forward and reverse test data fusion analysis, eliminates system deviations through multi-dimensional error compensation algorithms, meets personalized testing needs and improves measurement accuracy.
Support non-uniformity test of specified temperature points	Based on the multi-probe array, the thermoelectric potential data of each point is collected synchronously at the target temperature point, and the spatial distribution analysis algorithm is combined to identify the material inhomogeneity defects, accurately evaluate the thermoelectric potential stability of platinum-rhodium wire, and effectively ensure thebatch consistency and process reliability of wire.
Full process unattended Automatic verification	Integrate multi-threaded control architecture and embedded algorithms to achieve full-link automation from temperature field control, real-time monitoring of multi-channel data to smart processing and Automatic generation of calibration reports that meet specifications. Reduce manual intervention through industrial control-level stability assurance, and significantly improve detection efficiency and result consistency.
Smart report generation and output	Automatically generate test record sheets, support the export of original records, realize standardized management and convenient output of test data, and meet the requirements of standardized verification process.
Visual monitoring interface	Integrated multi-source data fusion display module, real-time presentation of system operation status, calibration point temperature, multi-channel synchronous acquisition data and error analysis results, providing a graphical operation interface and smart prompt function to ensure that users can intuitively control the entire detection process.
Dynamic tracking and historical backtracking of temperature curves	Real-time updates of temperature change curves, support for viewing historical curve data, help users intuitively analyze temperature change trends, and provide visual reference and data traceability capabilities for the calibration process.

Overview

DTZ-WK Electronic Scanning Switch Automatic Test System is mainly used for switching and collecting signals from RTD and thermocouple temperature sensors, which is suitable for industrial scenarios that require batch multi-point temperature measurement. DTMC-mK301-WK scanning switch device provides an efficient and accurate solution for fast switching and data reading of multi-channel temperature signals with its excellent performance and unique features.
The DTMC-mK301-WK scanning switch device, as a functional extension of the mK301 high-precision thermometer, enables real-time monitoring of multi-channel and multi-type temperature signals while simultaneously displaying the electrical measurement and temperature data of each channel.

DTZ-WK Electronic Scanning Switch Automatic Test System

PC-Based Professional Calibration Software

mK High Precision Thermometer

Electronic Scanning Switch

Features / Advantages

Flexible scenario applicability	It supports manual and automatic detection modes.
Low parasitic potential and fast channel switching	Parasitic potentials are all ≤0.2μV, and turn-on/turn-off time is less than 100ms for each channel.
Supports channel expansion for batch calibration	Configure 8 inspected channels and reserve expansion interface, support cascade function, can realize 32 inspected channels at the same time, to meet the needs of batch testing.
Compatible with multiple types of sensor signal detection	Automatically complete the real-time conversion of electrical measurement value/temperature value and display it synchronously in the main interface of mK301; support two/three/four-wire resistance, S/R/B/K/N/J/E/T/We3/We5 thermocouples with multi-types signal detection.
Built-in CJC cold end auto-compensation	It can Automatically correct the temperature change of the cold end to eliminate measurement errors and ensure accurate measurement of thermocouple signal conversion.
Multi-mode free switching	Supports three-wire resistor with one lead/two leads, two/four-wire resistor, and free switching of galvanic mode.
Automatic calculation and real-time display of three-wire resistance	Three-wire resistance with one lead/two leads results are Automatically calculated and displayed in real time on the mK301 thermometer main interface.
Support RS232 communication	RS232 communication interface for efficient data transfer and system integration.
Supports quick wiring of multiple interfaces	Provide 4mm banana head quick plug, U-type welding plug quick wiring and conventional terminal three wiring methods to adapt to the needs of different scenes, enhance the detection efficiency.

Product Application

Thermal Resistor Automatic Test System

DTMC-mK301-WK Electronic Scanning Switch is deeply integrated with the mK301 High-Precision Thermometer, forming a complete 2/3/4-wire resistance measurement system when paired with a standard reference device and a constant temperature source.The system supports flexible manual/automatic dual-mode operation, adapting to diverse testing scenarios. It synchronously displays real-time resistance measurements and corresponding temperature values, with built-in algorithms ensuring precise conversion. All data is directly presented on the mK301 main interface, enabling end-to-end efficient processing—from signal acquisition to result analysis.

Thermocouple Automatic Test System

DTMC-mK301-WK Electronic Scanning Switch, deeply integrated with the mK301 High-Precision Thermometer, forms a complete thermocouple measurement and calibration system when combined with a standard reference device, constant temperature source, reference junction compensator, and Pt100 sensor.This system supports full-range thermocouple signal detection (types S/R/B/K/N/J/E/T/We3/We5), automatically performing real-time conversion between electrical measurements and temperature values. All data is synchronously displayed on the mK301 main interface, enabling fully automated processing from signal acquisition to result output—ensuring high-precision, multi-type temperature measurement for diverse application needs.

DTZ-NTC Thermistor Automatic Detection System

Overview

DTZ-NTC Thermistor Automatic Detection System reshapes the thermistor testing experience with innovative technology, integrating multi-channel low potential scanner, digital multimeter, professional computer software and thermostatic oil (water) bath to create an unmanned testing platform for the whole process. Through the optimization of smart algorithms, the system can accurately adapt to all kinds of thermistor parameters, covering a wide range of work scenarios, and realizing full-cycle Automatic management from data collection to quality analysis. Built-in industrial-grade data analysis module supports standardized report generation and remote monitoring functions, providing efficient solutions for sensor calibration, batch verification and quality control with high reliability and flexible scalability, and helping to upgrade product accuracy in the era of smart manufacturing.

Product Features

Customizable Sensor Configuration for Testing

Supports user-defined configuration of 6 parameters including thermistor model, instrument ID, manufacturer, client organization, and custom fields, with hybrid detection capability.

Tested Sensor Configuration Interface

Standard Device Intelligent Management

The system supports custom standard device serial number, grade, specification model, manufacturer, factory number, traceability unit, certificate number, verification date, and valid date information, and can be included with up to 9 standard device information. You can directly select the corresponding number during inspection, so as to realize standardized management and convenient call of standard device information, and improve the accuracy and efficiency of the verification process.

Standard Device Intelligent Management Interface

Flexible Operation Mode Selection

The system supports actual operation, simulation and demonstration operation. The simulation demonstration runtime software can be used for demonstration and learning, and supports up to 10 sets of thermistors to detect simultaneously.

Centralized Temperature Test Point Management

The system supports free setting of up to 8 temperature points.

Temperature Point Centralized Management System

End-to-End Intelligent Monitoring & Visualization

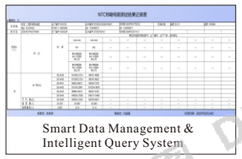
The main interface of the system dynamically displays the current temperature, set temperature, temperature difference, measurement times, digital table reading, temperature change rate, and running time key parameters, real-time monitoring of the detection process and data visualization to ensure accurate and efficient operation.

Dynamic Temperature Profile Tracking

The curve interface updates the standardizer temperature in real time to view historical curve changes.

Personalized Auxiliary Function Configuration

The testing software can provide calibration of the standard retest Rtp value, and the data acquisition test can be selected according to customer requirements. The expression of the header text in the record table supports custom input.



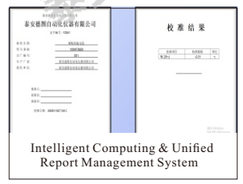
Smart Data Management & Intelligent Query System

Smart Data Management & Efficient Query System

The detection data can be automatically saved and recorded, and the running data can be viewed in real time. The record table can record the collected data information of each sensor to be detected and automatically calculate the temperature deviation.

Intelligent Computing & Integrated Report Management

Automatically calculates the action temperature error and generates test results and certificates, supporting the export, viewing, switching, retrieval and printing of certificates. At the same time, the original test data is automatically saved to the folder, supporting export, viewing and reference, realizing intelligent processing and standardized management of the test data, and improving verification efficiency and convenience.



Intelligent Computing & Unified Report Management System

PC-Based Professional Calibration Software

Features / Advantages

Multi-channel fast and synchronized detection function	Support multi-channel parallel measurement, data acquisition difference between channels ≤ 1mΩ, measurement repeatability ≤ 3mΩ, and single-channel turn-on/off time is less than 100ms, to ensure that the batch test data is accurate and stable, and significantly improve detection efficiency and consistency.
Highly accurate measurement adaptability	The system is perfectly compatible with high-precision digital multimeters and digital bridges (accuracy better than ±0.1%), and through hardware-level signal optimization, it ensures that the measurement error of resistance parameters is strictly controlled to meet the needs of demanding scenarios, such as precision electronic component inspection and industrial-grade quality control.
Compatible with multiple types of digital multimeters	Supports seamless connection with a variety of precision digital multimeters, flexible adaptation of different types of instruments to meet the needs of diverse testing scenarios, and comprehensively enhance the versatility and expandability of testing equipment.
Precise temperature field control technology	This system is based on PID temperature control algorithms to achieve high-precision temperature control, thermostatic bath temperature control accuracy of ± 0.1 ℃ (beyond the regulation of ± 0.5 ℃ indicator requirements), the tank temperature uniformity error is as low as ± 0.01 ℃ (breakthrough regulation limits ≤ ± 0.5 ℃), can be for thermistor testing to build a super-stable temperature field environment, to protect the test data of high repeatability and long-term stability.
Efficient multi-group / synergy detection technology	Supports up to 10 groups of thermistors for synchronized testing, compatible with different B-value parameters, realizing multi-batch mixed testing, significantly improving batch processing efficiency and meeting the needs of diversified application scenarios.
Standardizer Quick Configuration	Built-in standardizer information library, support up to 9 standardizer parameter storage and one-key call, no need to repeat the calibration can be quickly switched during the test, significantly improve the efficiency of batch testing and ease of operation.
Data sampling frequency customization	Flexible setting of test data collection frequency, to adapt to different test scenarios on the data density and efficiency needs, to ensure accurate matching of the experimental requirements.
Real-time temperature profile visualization and monitoring	Support the dynamic display of temperature control curve during the testing process, presenting the temperature change trend and stability intuitively, facilitating real-time monitoring of the testing process and ensuring the precision of temperature field control, enhancing the credibility and traceability of the experimental data.
Smart Document Management and Automatic Processing Platform	Support record table title customization, test reports and certificates of one-key generation and Excel export, built-in fast search function, flexible adjustment of document templates, efficient processing of data and convenient traceability of the results, fully optimize the user operating experience and work efficiency.

Software Copyright Registration Number 2022SR0299401

DTZ-TS Temperature Switch Automatic Calibration System

Overview

DTZ-TS Temperature Switch Automatic Calibration System is an smart testing platform that deeply integrates multidisciplinary technologies, adopting three core technologies: professional software algorithms, high-precision temperature measurement terminals and fully Automatic testing architecture.The system is designed for industrial temperature switches and temperature control components, and realizes unattended testing from raw data collection, multi-dimensional feature analysis to smart certificate generation through Automatic testing process, which ignificantly improves the efficiency of metrological testing and reliability of the results.The system consists of four parts:1. Based on mK-level temperature control precision DTMC-mK301G thermometer 2. Smart precision thermostat bath .3. Temperature switch scanner .4. Integrated calibration management software, forming a “perception-analysis-execution” closed-loop system.

Product Features

Full parameter customization

Support the user to set the calibration temperature, acquisition times, stabilization time, temperature distance, temperature rate, temperature switch type, number, model, temperature tolerance and manufacturer and other basic information, to provide a highly flexible configuration of the detection parameters, to meet the needs of diversified testing and personalized operating experience.

Smart management of standardizer information

The system supports the customization of the standard apparatus number, grade, model, manufacturer, factory number, calibration location and expiration date and other information, and can be programmed into a number of standard apparatus number, calibration directly select the corresponding number can be achieved standardized management of standard apparatus information and convenient call to enhance the accuracy and efficiency of the calibration process.

Smart monitoring and visualization of the whole process

The main interface of the system dynamically displays the current temperature of the standard and the thermostat tank, the set temperature, the temperature difference, the number of calibrations, the number of readings on the digital meter, the rate of temperature rise and fall, the inspected temperature point and the system running time and other key parameters, which achieves all-around real-time monitoring of the inspection process and data visualization, ensuring accurate and efficient operation.

Smart temperature control and real-time tracking of task status

The system Automatically determines the temperature switch status and accurately controls the temperature rise and fall of the thermostat tank, while the task bar real-time display of key information such as warm-up time, temperature rise time, temperature fall rate, interruption status and task completion, etc., realizing the smart management and dynamic monitoring of the testing process and ensuring the operation to be efficient and transparent.

Dynamic tracking and history of temperature profiles

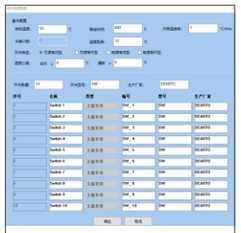
Temperature change curve real-time update, you can view the history of the curve changes.The curve interface updates the temperature data of the standardizer and the thermostat bath in real time.

Smart computing and reporting integrated management

Automatically calculate the action temperature error, on-off temperature difference and effective range, and generate calibration results and certificates, and support the export, viewing, switching, retrieval and printing of certificates.At the same time, the original test data is Automatically saved to the folder, supporting export, view and reference, realizing the smart processing and standardized management of test data, and improving the efficiency and convenience of testing.

Smart data management and convenient inquiry

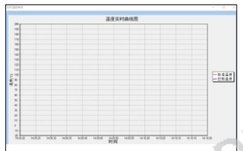
The system is equipped with a variety of keyword search function, which is convenient for users to query the history records at will.Detection data can be Automatically saved and recorded, and running data can be viewed in real time.The record table can record a number of information of each inspected temperature switch, including action temperature, average value of action temperature, error of action temperature, recovery temperature, average value of recovery temperature, difference of on-off temperature, and uncertainty calculation data, etc.



Test Sensor Configuration Interface

Intelligent Data Management & Efficient Query System

Intelligent Monitoring & Visualization Dashboard



Real-time Temperature Profile Tracking System

Intelligent data management and query

PC-Based Professional Calibration Software

Temperature Switch Automatic Calibration System

mK High Precision Thermometer

Features / Advantages

Flexible adaptation of multiple types of temperature switches	Compatible with various types of temperature switches such as active switches, passive switches, normally closed switches, normally open switches, etc.
Smart integration of equipment components	Temperature switch scanning device can be real-time power supply for the inspected switch, support manual and Automatic two test modes, and through the channel indicator lights synchronously display the switch action status, realizing the smart integration of power supply, test and status reminder to enhance the inspection efficiency and operation intuition.
Highly accurate multi-channel data acquisition	Equipped with high-precision smart multi-channel pyrometer, the resolution of the standardizer data reading up to 0.0001; configuration of 10 channels at the same time calibration, to ensure the high accuracy and reliability of temperature measurement, to meet the stringent requirements of precision calibration.
Integrated standardized uncertainty calculation module	Strictly follow the metrological verification regulations "JJF 1632-2017 Temperature Switch Temperature Parameter Calibration Specification", built-in synthetic standard uncertainty and extended uncertainty automation calculation engine, Automatic implementation of the extended operation, to ensure that the results of the measurement uncertainty in full compliance with the mathematical model required by the regulations (k = 2), and to provide a traceable record of the computation process and the verification of the report generation function.
Smart temperature control and condition detection integration	Real-time detection of changes in the state of the temperature switch and precise control of the temperature rise and fall. process of the thermostat tank, realizing the synchronous automation of temperature regulation and switch detection, ensuring efficient and accurate calibration process.
Integrated smart temperature rate control	Adopt PID regulation algorithm to implement dynamic rate constraints (≤1℃/min) for the heating/cooling process, through real-time power adjustment and temperature gradient monitoring, to ensure a smooth and controllable temperature change process, to avoid measurement errors caused by violent temperature fluctuations, and to meet the stringent requirements of the metrological calibration regulations for the rate of heating and cooling.
Enhanced temperature field stability control	Multi-order PID algorithm with real-time temperature feedback regulation mechanism is adopted to ensure that the system reaches the specified fluctuation threshold within the set time (≥10min) after entering the steady state from the heating stage, and maintains long-term stability through dynamic compensation strategy to meet the technical requirements of the metrological verification regulations on the stabilization time.
Real-time data and status monitoring	The interface displays and updates the standardizer data and task status in real time, providing intuitive operational feedback and dynamic information, ensuring that the user is always in control of the calibration process and key parameters, and enhancing operational convenience and transparency.
Dynamic tracking and history of temperature profiles	Real-time update of the temperature change curve, support for viewing the historical curve data, to help users visualize and analyze the temperature trend, providing visual reference and data traceability for the calibration process.
Easy wiring and remote expansion	Adopt simple wiring design, support ultra-fast sensor wiring, and reserved extension cable interface, to meet the needs of long-distance testing, significantly improve the convenience of field operation and adaptability of the test scenario.
Smart report generation and output	Automatically generates the testing record sheet, supports the export and printing of original records and calibration certificates, realizes the standardized management and convenient output of testing data, and meets the demand of standardized calibration process.
Efficient history search	Support a variety of keyword search function, users can quickly query the history records, to achievethe accurate positioning of data and flexible access to enhance the efficiency and convenience of data management.
Multi-protocol communication compatible	Support RS232, RS485, Type-C and other communication modes to ensure seamless connection and data transmission with various devices, meet the communication needs of diversified industrial scenarios, and enhance system adaptability and expandability.

mK High Precision Thermometer

Overview

mK High Precision Thermometer is a new generation of multi-channel super thermometer developed for the field of temperature measurement and calibration and precision temperature measurement. It integrates high-accuracy electrical measurement technology, smart interactive technology and industry needs to fully solve the measurement and calibration needs of laboratory and field temperature sensors.mK high-precision thermometer can measure RTD, thermocouples, thermistors, temperature transmitters, DC current and DC resistance, and DC voltage signals. It supports ITS-90 temperature scale and IEC60751 standard, has built-in thermal conversion software, supports sensor parameter management and smart sensor management functions, and has a wide range of uses in power, petrochemical, measurement, metallurgy, biopharmaceuticals, scientific research and other work. It is an ideal choice in the field of temperature measurement and calibration.

Temperature index			
Type	Grad-uation	Temp.range	Accuracy
SPRT	Pt25	-189℃~961℃ -200℃ 660℃	0.006℃ @-200℃ ; 0.006℃ @0℃ ; 0.015℃ @100℃ 0.020℃ @300℃ ; 0.030℃ @600℃
PRT	Pt100	-189℃ 961℃ -200℃ 740℃	0.003℃ @-200℃ 0.003℃ @0℃ 0.015℃ @100℃ 0.020℃ @300℃ 0.030℃ @600℃
TC	K	-270℃ 1370℃ -100℃ 1300℃	0.06℃ @600℃ 0.09℃ @1000℃
	N	-270℃ 1300℃ -200℃ 1300℃	0.05℃ @600℃ 0.08℃ @1000℃
	J	-210℃ 1200℃ -100℃ 900℃	0.03℃ @300℃ 0.05℃ @600℃
	E	-210℃ 1000℃ -90℃ 700℃	0.02℃ @300℃ ; 0.05℃ @600℃
	T	-270℃ 400℃ -150℃ 400℃	0.02℃ @300℃
	R	-50℃ 1760℃ 0℃ 1760℃	0.1℃ @300℃ 0.1℃ @600℃ 0.09℃ @1000℃
	S	-50℃ 1760℃ 0℃ 1760℃	
	B	250℃ 1820℃ 300℃ 1800℃	0.12℃ @1000℃ 0.1℃ @1500℃
Remsrks: Does not include the sensor's own deviation			

Function	Type	Description
Channels	3	CH 1 & CH2 in front CH3 in rear
Input	CH1/CH2	TC/RTD
	CH3	Current
Input Connectors	PTD	Thermal resistor (front panel) Lemo EPG.1B.306.HLN 6-pin connector Thermal resistor (rear panel) 4mm Low thermal binding post
	TC	Mini Thermocouple Connectors(ASTM E 1684-05)
Drive current	SPRT/PRT	1mA(±0.1%)(Automatic reversing)
Cold Junction Compensation, CJC		Built-in cold junction compensation, CH1 and CH2 can be used as cold junction compensation, and the cold junction compensation temperature can be input
Cold Junction Compensation Accuracy		±0.1℃
Smart Sensors	SPRT/PRT	Support
Sensor Management Quantity		100 Pcs
Sensor Management		ITS-90 IEC60751(2008) Callendar-van Dusen Steinhart-Hart B Value,Multinomial
Supported sensor types	RTD	SPRT Pt25 Pt100 Platinum resistance Pt100 Pt1000 Pt-X Copper resistor Cu50 Cu100 Cu-X Nickel resistor Ni50 Ni120 Ni1000 Thermistor 0-40K
	TC	Standard Thermocouple: S B; Industrial Thermocouples: K N J E T R S B We3 We5
	Transmitter	Temperature transmitter: 0-20mA/4-20mA
Temperature and humidity conditions	Storage: -10℃~50℃, relative humidity <75%RH (no condensation); Operation: 15℃~30℃, relative humidity less than 75%RH (no condensation); Calibration: 20℃±1℃, relative humidity less than 40%RH (no condensation)	

mK High Precision Thermometer

PC-Based Professional Calibration Software

DTZ-TS Temperature Switch Automatic Calibration System

Intelligent Conversion Platform

DTMC-mK301-WK Electronic Scanning Switch

Product Selection Sheet

Model	DTMC-mK301G-PRT	DTMC-mK301G	DTHPA-mK301G
Multi-channel temperature meter	●	●	●
DC multimeter			●
Sensor testing		●	
SPRT/RTD Measurement	●	●	●
RTC/TC Measurement		●	●
Transmitter	●	●	●
Thermistor Measurement	●	●	●
Temperature switch test		●	
Constant temperature source test	●	●	●
Electronic scanning switch	●	●	●
Smart Sensors	●	●	
Smart Junction Box	●	●	
Thermal Calculator	●	●	●
Sensor Management	●	●	●
Data storage	●	●	●
Smart Communications	●	●	●

Technical Parameters

Electrical test indicators					
Applicable Models				DTMC-mK301H	DTMC-mK301
Channel Type	Range	Input range	Resolution	Accuracy 1 year	
SPRT	120Ω	0Ω~125Ω	0.01mΩ	15ppm+3ppm	30ppm+5ppm
PRT	100Ω	0Ω~110Ω	0.01mΩ	15ppm+3ppm	30ppm+5ppm
PRT	400Ω	0Ω~410Ω	0.01mΩ	15ppm+3ppm	30ppm+5ppm
PRT	4KΩ	0Ω~4.1KΩ	0.1mΩ	30ppm+6ppm	30ppm+6ppm
TC	30mV	0mV 35mV	10nV	40ppm+20ppm	60ppm+20ppm
TC	100mV	0mV~115mV	10nV	40ppm+20ppm	60ppm+20ppm
Transmitter	25mA	0mA~30mA	0.001mA	0.02%	0.02%
Remarks : The test environment temperature specification conditions are 1 hour warm-up time; The environment temperature is 20℃±1℃;The environment relative humidity is 40%RH.					

Category	Indexing number	Temperature range	Corresponding to English	Corresponding coefficient			Corresponding freezing point		
Standard platinum resistors	SPRT	0 660.323	SPRT	a7	b7	c7	Tin WSn	Zinc WZn	Aluminum WAI
		0 419.527		b8	b8		Tin WSn	Zinc WZn	
		0 231.928		a9	b9		Tin WSn	Indium WIn	
		-189.834 0		a4	b4		Argon Triple Point War	Mercury Triple Point Whg	
		0 156.5985		a10			Indium Win		
		0 29.7646		a11			Gallium Melting Point Wga		
		-38.8344 29.7646		a5	b5		Gallium Melting Point Wga	Mercury Triple Point Whg	
Industrial Thermal Resistance	PT 100	-200 850	RTD						
	Cu100	-50 150							
Standard thermocouple	S	300 1300	RTC						
	B	0 1820							
Industrial thermocouple	S	-50 1760	TC						
	R	-50 1761							
	B	0 1820							
	K	-270 1370							
	N	-270 1300							
	E	-270 1000							
	J	-210 1200							
	T	-270 400							
	Tungsten rhenium WRe3、WRe5	0~2310	TC-WRe3						
		0~2311	TC-WRe5						

General Indicator

Screen	7-inch high-definition touch screen
Resolution	Temp. （0.1 0.00001℃ optional ） Electrical testing 0.01mΩ ; 10nV
Number of channels	Front panel : 2 Channels Rear panel : 3 Channels
Data storage capacity	Built-in 8G storage, all stored data are time-stamped
Communication interface	COM2
Language	Chinese, English
Power supply requirements	110V±10% 220V±10% AC voltage shift pulley
Product size	270mm×260mm×145mm
Weight	Weighing of single host (3.39Kg) Host + accessories (4.32Kg) Host + accessories + packaging (6.93Kg) Junction box (0.15Kg)

Procedures / Codes

Code	Name of Procedure (Specifications)	Code	Name of Procedure (Specifications)
JJG 75-2022	Standard Platinum-10% Rhodium/Platinum Thermocouples	JJG 167-1995	Standard Platinum-30% Rhodinum/Platinum-6% Rhodium Thermocouple
JJG 229-2010	Verification Regulation of Industry Platinum and Copper Resistance Thermometers	JJG 229-2010	Verification Regulation of Standard platinum resistance thermometer
JJG 141-2013	Verification Regulation of Working precious metal thermocouples	JJG 141-2013	Verification Regulation of industrial platinum-copper resistors
JJF1379-2012	Calibration Specification of Thermistor Thermometers	JJF1379-2012	Tungsten-rhenium thermocouple wire and indexing table
JJF 1587-2016	Calibration Specification for Multimeter "	JJF 1587-2016	Calibration Specification for Base Metal Thermocouples

DEARTO Instrument · Quality Model

Product Function

mK Class Precision Thermometer

- Resolution 0.0001 ° C
- Accuracy (at 0 ° C for SPRT) 6ppm

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/fixed 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

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

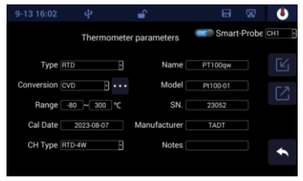
- Built-in thermal calculator
- Built-in ITS-90 fixed point information

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

Thermometer list

ITS-90



Sensor Management Function

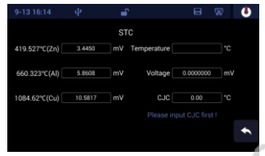
Smart Junction Box Functions

Triple-Channel Display Interface

Main Functional Modules

Sensor Testing

- Supports simultaneous connection of two standard platinum resistance thermometers (PRTs).
- Supports simultaneous connection of two standard thermocouples.
- Compatible with various thermocouple types, multiple RTDs (Resistance Temperature Detectors), and temperature transmitters.

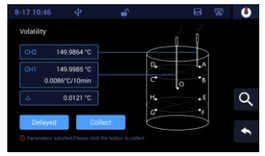


Standard thermocouple settings

Automatic Testing of Thermostatic Bath Technical Performance

- Connect the mK301 high-precision thermometer to the sensor, place the sensor (fixed thermometer, mobile thermometer) in the constant temperature tank, and then perform verification and testing after configuring the basic information. During the test, it supports automatic data collection, automatic calculation, and automatic judgment, and supports exporting the test results in file format.
  The function complies with the requirements of the "JJF1030-2023 Technical Performance Test Specification for Constant Temperature Calibration".
- Data management functions:
  historical record summary, supports filtering data by year; view specific detection data of a record; supports exporting and deleting selected files.
  Test function:
  The volatility test supports independent selection of acquisition methods.
  Uniformity test:
  Automatically calculate the horizontal temperature difference value and the working area temperature difference value.
- Cooling rate deviation test:
  Automatically generate conclusions, test data supports viewing and saving
  data export and test report: After the test record is saved, it can be viewed in "Data". Supports USB insertion and export files. Automatically generate test reports based on detection data

Constant temperature bath uniformity test



Constant temperature bath fluctuation test interface

Automatic testing of electronic scan switches

- DTMC-mK301-WK electronic scanning switch automatic testing is mainly used to switch and collect signals from thermoresistance and thermocouple temperature sensors, and is suitable for industrial scenarios where batch multi-point temperature measurement is required. With its excellent performance and unique functions, the DTMC-mK301-WK scan switch device provides an efficient and accurate solution for the rapid switching of multi-channel temperature signals and data reading. It can realize manual/automatic switching and data reading of multi-channel and multi-type temperature signals. It is used in conjunction with mK301 high-precision thermometer, and can view and synchronize the electrical measurement and temperature data of the channel in real time on the thermometer touch screen interface.

Electronic scanning switch device

High-precision DC multimeter mode

- DTHPA-mK301 high-precision thermometer DC multimeter mode is suitable for various standard temperature laboratories, and is used for high-precision temperature or electrical signal measurement, verification furnace/constant temperature tank temperature field test, and multi-channel temperature signal acquisition and recording application scenarios.

Overview

DTMA-101 Portable Thermometer is a professional instrument developed based on advanced temperature measurement technology. This product deeply integrates the actual application needs of the domestic temperature measurement field, supports a variety of probe types, and can meet the precision temperature measurement needs in scenarios such as laboratory scientific research and industrial process control. The device has practical functions such as Automatic data calibration and historical data tracing, providing users with reliable temperature measurement solutions.

DTMA-101 Portable Thermometer

Features / Advantages

Smart capacitive touch screen	It adopts advanced capacitive touch technology, multi-function window display and easy operation.
Multi-point correction function	Supports 8-point correction, the correction value can be remembered and automatically matches the sensor.
Multi-point correction function	Display the latest 250 data curves in real time to facilitate users to analyze trends.
Data Display	Supports display of ℃, K, ≤ and Ω, and displays maximum, minimum, average and volatility in real time.
Calibration mode	Supports 3-to-8-point calibration mode to ensure measurement accuracy.
Alarm alarm function	When the value exceeds the set value, it has an alarm function to remind users in a timely manner.
Anti-touch design	Prevents accidental touch or error modification of device parameters, supports locking the current data and stops refreshing, making it convenient to record data.
Calibration mode	Supports users to set data collection intervals in custom settings to meet the needs of different application scenarios.
Comply with international standards	It supports ITS-90 international temperature standard, supports 385 (alpha=0.00385), 3911 (alpha=0.003 911), 3916 (alpha=0.003916) and 3926 (alpha=0.003926) platinum resistors, ensuring high compatibility and reliability of the equipment.
Customized sensors	Supports customization of sensors according to user needs to meet the needs of special application scenarios.

Technical Parameters

Temperature measurement range		-200 ℃~800 ℃
Connection		Four - wire system
Resistance measurement range		0Ω-400Ω
Resistance display resolution		0.0001Ω
Sensor type		Industrial platinum resistance Pt100 Standard platinum resistance(Pt25)
Resistance measurement accuracy: ±(% of reading + % of range)		0.0020+0.0010 24 hours 0.0040+0.0010 1 year
Temperature measurement accuracy	-100 ℃	±0.008 ℃
	0℃	±0.010 ℃
	100 ℃	±0.012 ℃
	200 ℃	±0.014 ℃
	300 ℃	±0.016 ℃
	400 ℃	±0.018 ℃
	500 ℃	±0.020 ℃
	600 ℃	±0.022 ℃

Overview

DTMC series smart six-channel precision thermometer is a multi-channel, multi-function thermometer based on modular design, the whole series support four configurations: dual-channel, four-channel, six-channel & eight-channel, channels support free combination respectively optional platinum resistance measurement module, TC measurement module or thermistor measurement module, with high precision, wide sensor coverage, rich functions & many other advantages.

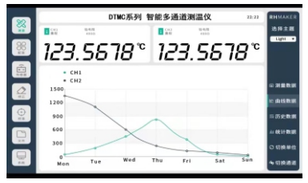
DTMC Six-channel Precision Thermometer

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
Thermocouple	100mV	-100mV to 100mV	0.1uV	15ppm+8ppm	15ppm+15ppm	3ppm
Platinum resistance	100Ω	0Ω to 125Ω	0.1mΩ	4ppm+4ppm	4ppm+8ppm	1ppm
	400Ω	0Ω to 400Ω	0.1mΩ	4ppm+4ppm	4ppm+6ppm	1ppm

Model	Channel number
DTMC-2G	2
DTMC-4G	4
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			
	S	-50°C to 1768°C	0.25°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

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.

DTSW-G Precision Digital Thermometer

DTSW-2G Industrial Grade Digital Thermometer

DTSW-1G Stick Type Digital Thermometer readout

Data Correction Software

DTSW-LcG Precision Digital Thermometer

Digital Thermometer Management Software

Technical indexes

Name	DTSW-G Stick Type Digital Thermometer				Digital Thermometer	
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℉~122℉)	
Data storage	16,000 sets of data (with time stamp)		Host working environment		−10°C ~50°C(14℉~122℉)	
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℉~140℉) 5%RH-80%RH (Without condensation)	

DTS-CTG SeriesSmart Calibration Bath

Overview

DTS-CT Smart Precision Calibration Bath adopts large-screen capacitive screen for smart control & smart human-computer interaction interface, which is convenient & practical to operate. Using dual-chamber side-stirring technology, through smart PID adjustment, the constant temperature bath can achieve an ideal uniform environment, which can meet the verification/calibration of temperature sensors such as various low-temperature TCs, industrial thermal resistance, pressure thermometers, bimetal thermometers, and glass liquid thermometers.

Technical indicators

The heating and cooling speed is adjustable	Adjustable rate of temperature rise and fall, free to set the rate of temperature rise and fall. According to the set rate of temperature rise and fall, the temperature rises and falls at a uniform speed to meet the verification/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 power-on intelligent replenishment to the ideal level; compatible with both manual and automatic replenishment modes; real-time monitoring of the liquid level, alarm and automatic shutdown when the liquid level is low.
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 cycleSupports 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		3kw
Size (DxWxH)		660×540×1120				700×590×1120		800×600×1000
Weight		95kg			115kg	155kg		200kg

Intelligent precision thermostatic bath Accessory list

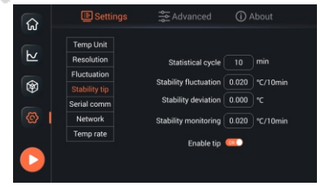
Specifications	Precision thermostatic oil flange (The opening size can be customized)	Precision low temperature thermostatic flange (hole size support customization)	Working medium
Picture			
Specification	14-hole stainless steel insert disc	17-well epoxy board insert disk	Methyl silicone oil/antifreeze

Intelligent Accurate Security

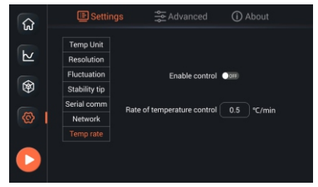
- Temperature control rate is adjustable Set heating rate freely
- Active smoke extraction system Create a healthy smoke-free environment
- Intelligent man-machine interface The operation is simple
- Real-time curve display Automatic calculation of volatility
- Intelligent rehydration Low level alarm 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

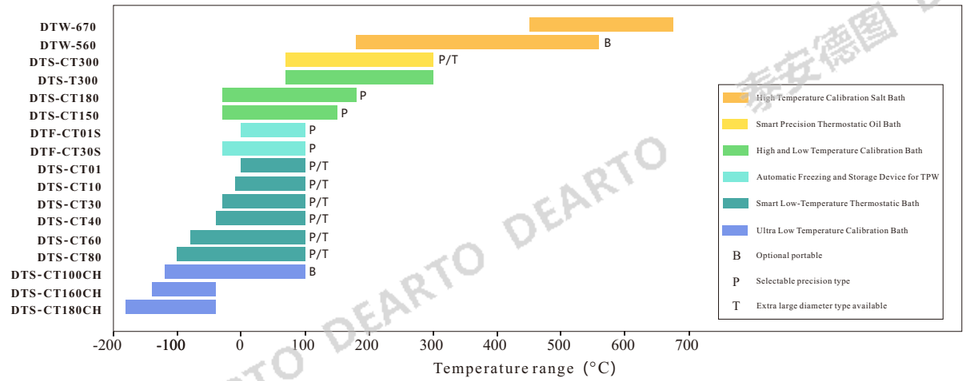


Stability tip



Temperature control rate is adjustable

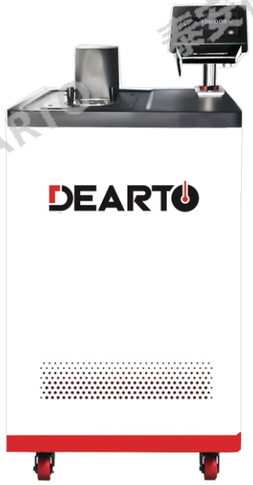
Product Selection Sheet

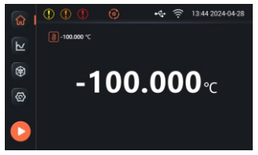


Overview

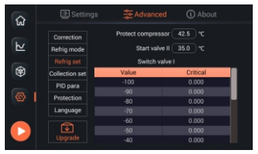
DTS-CH Low temperature calibration bath is a new product developed according to customers' ultra-low temperature sensor detection requirements.Touch screen control and operation, fully intelligent human-computer interface, control is more convenient, simple and practical, to provide users with precisionQuasi-constant 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。

Ultra-Low Temperature Calibration Bath





Operation window（-100℃）



Advanced Settings

Technical indicators

Specifications		Compact type		Ultra-low Temperature Intelligent Precision Temperature Calibration Baths		
Model		DTS-CT100CH-BG	DTS-CT60CH-BG	DTS-CT100CHG	DTS-CT160CHG	DTS-CT180CHG
Range		-100°C to100°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

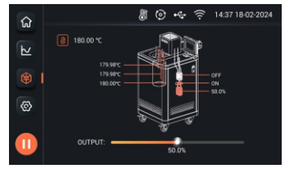
DTS-CT300TG Can circulate rapidly to raise and lower temperature oil bath cooling speed, from 300°C to 100°C about 15 minutes, with return measurement function.

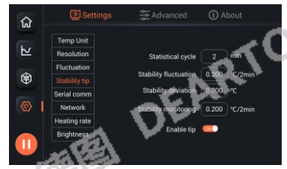
Specifications		High and Low temperature Calibration Baths (Precision)		High and Low temperature Calibration Baths (Smart model)		**Smart Rapid Heating and Cooling Circulator Calibration Oil Bath**
Model		DTS-T150G	DTS-T180G	DTS-CT150G	DTS-CT180G	DTS-CT300TG
Range		-20°C to150°C	-20°C to180°C	-20°C to150°C	-20°C to180°C	70°C to 300°C
		-30°C to150°C	-30°C to180°C	-30°C to150°C	-30°C to180°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

Overview

DTW-G High Temperature Calibration Salt Bathis 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.

DTW-G 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**		

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.

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					
Model		DTS-300G	DTS-95G	DTS-01G	DTS-10G	DTS-30G	DTS-60G	DTS-80G	DTS-100CHG
Range		70°C to300°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	≤0.01°C					
	Axial	≤0.01°C	≤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	≤0.01°C	≤0.01°C
Stability (10°C/min)	±0.01°C/30min	±0.01°C/30min	±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			

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.

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 preservator, 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			

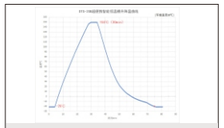
DTS-B Portable Smart Calibration Baths

Overview

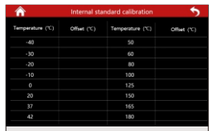
DTS-BG Portable intelligent calibration bath is a kind of high precision and automatic temperature calibration device. The bath is compact in structure, light in weight, easy to carry and durable. Suitable for all kinds of industrial thermal resistance, low temperature thermocouple, armored thermocouple,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

DTS-B Portable Smart Refrigerated Calibration Bath

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



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



Multi - temperature point automatic correction, calibration.

Real-time display of temperature curve and fluctuation.

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
		-20°C to 180°C	-30°C to 180°C			-40°C to 180°C
Control mode	Touch screen					
Display resolution	0.001°C					
Display accuracy	±0.2℃					
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.					

DTS-300B Portable Smart Heating Calibration Oil Bath

Design Patent

Ultra-Portable

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℃	±0.2℃	±0.2℃	±0.2℃
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		φ60mm×250mm	
Size	425×220×370mm		400×185×331mm	
Working medium	Silicone oil(L30-300)		Silicone oil(L30-300)	

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.

DTL Thermocouple Calibration Furnace Series

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	Range(°C)	Chamber size(mm)	Note
1	Standard Thermocouple Calibration Furnace	DTL-600BG	300 to 1300	φ20×600	Temperature range and furnace size can be customized as required
2	Low-cost Thermocouple Calibration Furnace	DTL-600G		φ40×600	
3	Precious meta Thermocouple Calibration Furnace	DTL-600EG			
4	Thermocouple Calibration Furnace-Custom Made	DTL-600TG		φ60×600	
5	Short Type Low-cost Calibration Furnace	DTL-300G		φ40×300	
6	Short Type Precious meta Calibration Furnace	DTL-300BG		φ20×300	
7	Ultra short Thermocouple Calibration Furnace	DTL-150G		φ40×150	
8	High Temperature Thermocouple Calibration Furnace	DTL-HG	800 to 1700	φ30×600/φ50×600	
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	

Tnermocouple 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℃ to 1300℃		300 ℃ to1300℃		300℃ to 1300℃	300 ℃ to1200℃
Chamber size（mm）	φ40×600	φ40×300	φ20×600		φ20×300	φ40×1000
Temperature field distribution	Equipped with temperature qualization block, the effective working area within 30mm axis, the temperature difference between any two points is not more than 0.5℃, the radial radius is not less thanWithin the range of 14mm, the absolute temperature difference between any two points of the same section is not more than 0.25℃.	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℃.	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℃/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℃/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℃/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℃.
Rules and regulations for imple mentation	“JJF1184-2024 Technical specification for temperature field test of thermocouple Calibration Furnacee” “JJF1637-2017 Calibration specification for low cost metal thermocouples” “JJF 1262-2010 Calibration specification for armoured thermocouples” “JJF1991-2022 Calibration specifications for short-type intact metal 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

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	φ30×600/φ50×600(mm)(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.		

Supports custom tungsten-rhenium thermocouple verification furnace

Multi-Temperature Zone Thermocouple Calibration Furnace

Short Base metal Thermocouple Calibration Furnace

Base metal Thermocouple Calibration Furnace

Standard Thermocouple Calibration Furnace

Thermocouple Annealing Furnace

Multi-mode Autonomous Selection

Smart Dry Block Temperature Calibrator Series

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 Smart Dry Block Temperature Calibrator
DT-ETC Micro Dry Block Temperature Calibrator

DTG Low Temperature Smart Dry Block Temperature Calibrator

ETC-150 Micro Dry Block Temperature Calibrator

ETC-400 Micro Dry Block Temperature 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		Medium		High Temperature		Micro	
Model	DTG-150G	DT-ULT100G	DTG-660G-A	DTG-660-B	DTG-1200G-A	DTG-1200G-B	ETC-150G	ETC-400G
Range(℃)	-30 to 150	-100 to 40	50 to 660	50 to 660	300 to 1200	300 to 1200	-10 to 150	50 to 400
Stability	±0.15	±0.5	±0.2	±0.1	±0.4	±0.2	±0.1	±0.1
Display resolution	0.01	0.01	0.01	0.01	0.1	0.1	0.1	0.1
Power input	400	800	650	650	2200	2200	230	350
Radial uniformity	≤0.2	Support customization	≤0.3	≤0.15	≤1.0	≤0.8	≤0.2	≤0.2
Standard insert apertures(mm)	φ4.5 φ6.5 φ8 φ10				φ6.5 φ12		φ4 φ6 φ7	φ4.5 φ8、φ6.5 φ10
	Please indicate the insertion depth of the sensor under inspection and the outer diameter of the sensor under inspection when ordering (supports customization)							
Immersion (well) Depth	170	Support customization	150				120	110
Size (mm)	330×170×320		285(L)×170(W)×335(H)				230×180×125	220×160×100
Power supply	220V / 50Hz ; 110V / 60HZ							

DTG-MU Smart Electrical Testing 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)		

DTBH Ice Point Cell

DTBH automatic zero-degree thermostat is a device that can provide a stable and accurate zero-degree temperature field for a long time for the thermocouple reference end. The equipment's technical indicators are fully in line with the "JJF1637-2017 Calibration Specification for Integrated Metal Thermocouple". The cooling rate is fast, and it only takes 15 minutes to drop from room temperature 25℃ to 0℃. It is fully automatic and requires no operation after starting the machine. It can be used stably. It has a touch panel, which is convenient to operate, silent design and noise-free.

Technical Indicators

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	

DT1000G Thermocouple Cleaning Annealing Unit

DT1000G thermocouple cleaning annealing device is designed in accordance with the "JJG75-2022", "JJG167-1995", "JJG141-2013", "JJG668-1997" validation regulations, and the standard and working precious metal thermocouples are energized cleaning and annealing before validation.

Technical indicators

- 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)

DTD-02G Glass Liquid Thermometer Reading Device

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.

Product features

- 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.

Execution standard

- JJG161-2010 "Standard mercury thermometer"
- JJG 130-2011 "Vitreous thermometer for working use"
- JJG 131-2004 "validation regulation of electric contact glass mercury thermometer"
- JJG 618-1999 "validation regulation of high precision glass mercury thermometer"
- JJG 207-92 "validation regulation of glass liquid thermometer for meteorological use"

DEARTO Instrument · Quality Model

DJ-201T Smart Conversion Platform

- Support access to the temperature transmitter function:
  2 line current type temperature change (4-20mA)
  4 line current type temperature change (4-20mA)
  Voltage type temperature change (0-5V/0-10V);
- Support for 10-way thermocouple socket interface;
- Support for RS485 communication interface;
- Support for the two-wire/three-wire/four-wire system of Automatic conversion of RTD function, the calibration of three-wire system of resistance to heat in the process of measurement Automatically Completing the function of switching between two leads and one lead during the calibration of three-wire RTD. Meet the 'JG229-2010 industrial platinum, copper RTD calibration regulations', and at the same time make thermocouple, RTD calibration wiring more convenient, beautiful, without the need for cumbersome repeated wiring.

Real-time display of
temperature control curve

DTK-AI Smart Temperature Controller

DTK-AI Smart Temperature Controller is primarily designed for temperature regulation in thermocouple verification furnaces. It enables precise temperature control for single or multiple constant-temperature devices, featuring a capacitive smart touchscreen.The controller's performance complies with the technical requirements of the following verification regulations:
JJF1637-2017 JJG141-2013 JJG75-2022
JJG668-1997 JJG368-2000

Features & Advantages

- Capacitive Touchscreen Smart HMI (Human-Machine Interface) Multi-functional window display One-touch operation with simplified controls.
- Full-range Temperature Resolution of 0.01°C 3 adjustable resolution settings: 0.01°C, 0.1°C, 1°C
- 14-point Temperature Calibration & Correction Automatic 14-point calibration and correction for precise temperature control
- Adjustable Heating Rate Programmable uniform heating to ensure stable and controllable temperature transitions. Real-time Curve Display Live display of historical temperature curves.
- Customizable Data Acquisition User-defined intervals for curve data collection.
- PID Parameter Configuration Supports both auto-tuning and manual parameter adjustment.
- Stability Monitoring Real-time operation data display for clear system status visualization.
- Bilingual Interface (Chinese/English) Language switching for international applications.
- Over-temperature Protection Automatic shutdown when exceeding preset safety limits.
- Multiple Communication Options USB, WiFi, WLAN, and serial port connectivity.
- Temperature Unit Conversion Switchable among °C, °F, and Kelvin (K) units.

Humidity calibration

Product selection navigation chart

High Temp. & High Humi. Smart Calibration Chamber

DTHTH	Temperature Range : -40℃ ~ 180℃
DTHTH-85	Double 85 Verification : 85%RH @ 85℃
DTHTH-95	Double 95 Verification : 95%RH @ 95℃

Oversized Smart Temp. & Hum. Calibration Chamber

DTLH-2RH	Hum. range: 5 %RH 98 %RH
	Temp. range: -46 ℃ 65 ℃/70 ℃/ 80 ℃
DTLH Series	Hum. range: 10 %RH 98 %RH
	Temp. range: -46 ℃ 65 ℃/70 ℃/ 80 ℃
DTSL Pro	Unattended - Digital Thermo-Hygrometer Automatic Calibration System
DTSL Pro	Unattended-mechanical thermo-hygrometer automatic calibration system

Standard Smart Temp. & Hum. Calibration Chamber

DTLH-1RH	Hum. range: 5 %RH 98 %RH
	Temp. range: -8 ℃ 65 ℃
DTLH Series	Hum. range: 10 %RH 98 %RH
	Temp. range: -8 ℃ 65 ℃ / 70 ℃

Portable Humidity Generator

TADT-atm	Temp./Humidity/Pressure Integrated Control Generator
TADT-1	Working volume 5L
TADT-2	Working volume 9L
TADT-3	Working volume 1.5L

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 Smart Calibration Chamber

APP Curve Display

Control Interface

Blockbuster recommended **Temperature range**

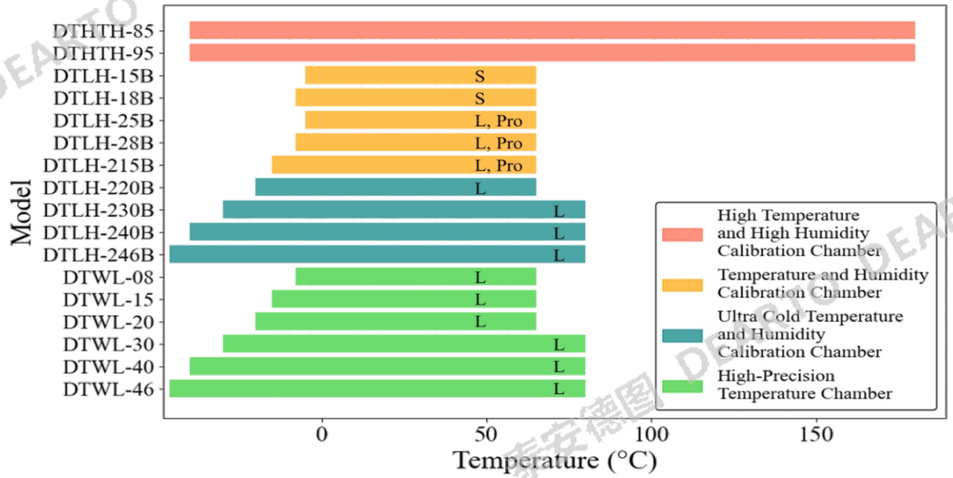
-46°C to 80°C

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

Product selection table



High Temp. & High Humi.Smart Calibration Chamber Technical Parameters

Model	DTHTH-85	DTHTH-95
Temp. range	-40 ℃ 180 ℃	-40 ℃ 180 ℃
Temp. resolution	0.01 ℃	0.01 ℃
Hum. range	10%RH ~ 95%RH (20°C ~ 95°C); (Achieves dual 85, dual 95 verification); (Customization supported)	
Hum. resolution	0.01 %RH	
Temp.stability	≤ ±0.05 ℃/30min @(Temperature only) ≤±0.1 ℃/30min@(Open humidity)	
Temp.uniformity	≤0.2 ℃ @ 5 ℃~50 ℃ (Testing by JJF1564-2016) 0.6 ℃ @ 50 ℃~80 ℃ (Testing by JJF1101-2019)	
Hum.stability	≤ ±0.5 %RH/30min	
Hum.uniformity	≤0.8 %RH 20℃(Testing by JJF1564-2016)	
Temp. change rate	≤0.2 ℃/min	
Hum. change rate	≤0.8 %RH/min	
Weight	Approx.460Kg	
Display screen	7-inch high-definition touch screen	
Power	AC 380V±5% 50Hz , Max Power 7kW , Rated Power 5kW	

DTHTH High Temp. & High Humi. Smart Calibration Chamber

Double 85 Verification :
85%RH @ 85℃
Double 95 Verification :
95%RH @ 95℃

New product recommendations Range

-40℃~180℃

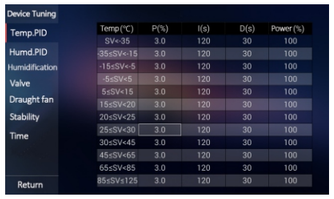
DTLH Smart Temp. & Hum. Calibration Chamber Technical Parameters

Specifications		Standard		Oversized		
Model		DTLH-15BG	DTLH-18BG	DTLH-25BG	DTLH-28BG	DTLH-215BG
Performance indicators	Temp.range	-5 ℃ to 65 ℃	-8 ℃to 65 ℃	-5 ℃to 65 ℃	-8 ℃ to 65 ℃	-15 ℃to 65 ℃
	Temp.resolution	0.01 ℃		0.01 ℃		
	Humidity range	10 %RH 95%RH 20 ℃ **(Customizable: 5 %RH 95 %RH(20 ℃)**				
	Resolution	0.01 %RH		0.01 %RH		
	Temp .stability	≤ ±0.05 ℃ / 30min (-8 ℃ 10 ℃ ≤±0.05 ℃/ 30min (10 ℃ 30 ℃ ≤±0.10 ℃/ 30min (30 ℃ 65 ℃		≤ ±0.05 ℃ / 30min (-15 ℃ 10 ℃ ≤±0.05 ℃ / 30min (10 ℃ 30 ℃ ≤±0.10 ℃ / 30min (30 ℃ 65 ℃		
	Temp.uniformity (customizable)	≤0.2 ℃ (15 ℃ 30 ℃ ≤0.3 ℃ (-5 ℃ 60 ℃		≤0.2 ℃ (15 ℃ 30 ℃ ≤0.3 ℃ (5 ℃ 60 ℃		
	Hum.stability	≤ ±0.3 %RH /30min (5 %RH 80 %RH ≤±0.5 %RH /30min (80 %RH 95 %RH		≤ ±0.3 %RH /30min (5 %RH 80 %RH ≤±0.5 %RH /30min (80 %RH 95 %RH		
	Hum.uniformity (customizable)	≤0.8 %RH (5 %RH 80 %RH ≤1.0 %RH (80 %RH 95% RH		≤0.8 %RH (5 %RH 80 %RH ≤1.0 %RH (80 %RH 96 %RH		
	Temp.change rate	≤0.02 ℃ /min		≤0.02 ℃/min		
	Hum. change rate	≤0.3 %RH /min		≤0.3 %RH /min		
	Temp. rise speed	15→20 ℃/20min 20→30 ℃/25min 20→65 ℃/60min		15→20 ℃/30min (20→30 ℃/40min -15→15 ℃/50min 20→65 ℃/60min		
	Temp. cooling speed	20→15 ℃/30min 30→20 ℃/35min 65→20 ℃/60min		20→15 ℃/35min 30→20 ℃/40min 65→20 ℃/60min		
	Humidity rise speed(20℃)	20→80 %RH /9min 10→95 %RH/12min 5→95 %RH/15min		20→80 %RH/9min 10→95 %RH/12min 5→95 %RH/15min		
	Humidity reduction speed(20℃)	80→20 %RH/15min 95→10 %RH/25min		80→20 %RH/20min 95→10 %RH/25min		
	Workspace dimensions	520×510×500(mm)		820×800×510 mm		
	Overall dimensions	1780(H)×820(W)×965(T)		1730(H)×1045(W)×1300(T)		
	Weights	350Kg		450Kg		
	Supply power	AC 220V±5% 50Hz Peak power 5KW,Typical power 3KW				
Functional indicators	Smart programming function	No need to repeatedly set the temp.& humidity points. It can be programmed and run in turn.				
	Phone APP WiFi remote control	Equipped with mobile APP software, supporting remote control, setting, start and stop on the mobile phone; real-time reading of temperature and humidity values and equipment operation status。				
	PC remote function	Equipped with PC software (optional), featuring Ethernet/WiFi/serial communication.Supports remote control, configuration, startup,and shutdown via PC, with real-time reading of temperature, humidity values, and operational status.。				
	Stability Hint	Equipped with intelligent stability prompt function, it automatically determines the stable state based on parameters such as temperature/humidity deviation, fluctuation degree, and stabilization time. It features real-time automatic fluctuation calculation and supports customizable fluctuation calculation cycles (1min, 5min, 10min, 20min, 30min)。				
	Curve Zoom Function (with Curve Saving)	High-definition capacitive touchscreen, supporting multi-touch and free drag-to-zoom functionality for real-time viewing of both localized and overall curve details. Enables intuitive monitoring of temperature and humidity variations. Curves can be instantly captured and saved as images with a single click, facilitating maintenance, servicing, and data process documentation				
	Segmented PID Control	Both temperature and humidity support multi-stage PID control design, with customized control parameters for different setpoints. This ensures optimal control performance at every temperature/humidity point, delivering fast stabilization and superior regulation (minimal overshoot, rapid response, and low fluctuation)				
	Data Logging / Export	Equipped with onboard storage and USB export capability, the system automatically logs operational data (temperature/humidity curves) and generates formatted Excel files. Data can be exported to USB drives with one-click operation				
	Multi-point Calibration	Wide-range correction points deliver minimal deviation and excellent linearity				

DTLH Ultra Low Temperature Smart Calibration Chamber Technical Parameters

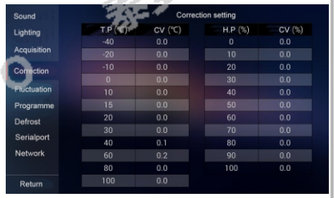
Model	DTLH-220BG	DTLH-230BG	DTLH-240BG	DTLH-246BG
Temp.range	-20 ℃to 65 ℃	-30 ℃to 80 ℃	**-40 ℃ to 65/70/80 ℃**	**-46 ℃ to 65/70/80 ℃**
Temp.resolution	0.01 ℃			
Humidity range	10 %RH 98 %RH 20 ℃ **(Customizable 5 %RH 98 %RH(20 ℃))**			
Hum. resolution	0.01 %RH			
Temp .stability	≤ ±0.05 ℃/30min		≤ ±0.05 ℃/30min	
Temp.uniformity (customizable)	≤0.1 ℃ 10 ℃ 30 ℃ ≤0.15 ℃~0.3 ℃ Other Temperatures		≤0.1 ℃ 10 ℃ 30 ℃ ≤0.15 ℃~0.3 ℃ Other Temperatures	
Hum.stability	≤ ±0.3 %RH/30min 5 %RH 80 %RH ≤±0.5 %RH/30min 80 %RH 95 %RH		≤±0.3 %RH/30min 5 %RH 80 %RH) ≤±0.5 %RH/30min 80 %RH 95 %RH)	
Hum.uniformity (customizable)	≤0.8 %RH		≤0.8 %RH	
Temp.change rate	≤0.03 ℃/min Under controlled stable conditions		≤0.03 ℃/min Under controlled stable conditions	
Hum. change rate	≤0.3 %RH/min Under controlled stable conditions)		≤0.3 %RH/min Under controlled stable conditions)	
Temp. rise speed	15→35 ℃/20min 20→80 ℃/40min		15→35 ℃/20min 20→80 ℃/40min	
Temp. cooling speed	50→15 ℃/30min 80→20 ℃/40min		50→15 ℃/30min 80→20 ℃/40min	
Humidity rise speed(20℃)	20→80 %RH/9min 10→95 %RH/15min		20→80 %RH/9min 10→95 %RH/15min	
Humidity reduction speed(20℃)	80→20 %RH/20min 95→10 %RH/25min		80→20 %RH/20min 95→10 %RH/25min	
Workspace dimensions	620×780×500		620×780×500	
Overall dimensions	1700 H ×1400 T ×1000 W		1820 H ×1682 T ×1172 W	
Weights	450Kg		500Kg	
Supply power	AC220V±5% 50Hz Peak power 5KW,Typical power 3KW		AC380V±5% 50Hz Peak power 5KW,Typical power 3KW	

Smart Application

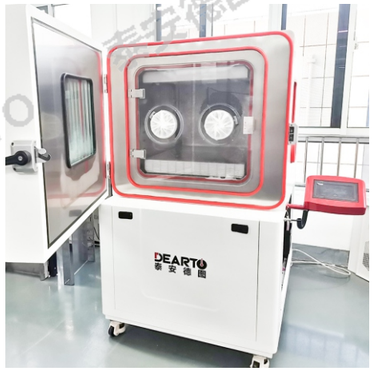


Segmented PID control

Device is self-tuning



Multipoint temperature and humidity correction



Custom Model - Features Dual-Port Transparent Inner Door Design

Standard Smart Temp. & Hum. Calibration Chamber

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 chamber inside the unique wind circuit design, to ensure that no dead air flow; using frequency conversion technology to adjust the speed of the fan, to ensure that at low speeds can still ensure that the internal temperature field is uniform.

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.

DEARTO Instrument · Quality Model

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

Etalon selection :

Specifications	Picture	Model	Temperature range	Display resolution	Precision
Precision dew point meter		Optidew 401	-40 ℃~90 ℃	0.01 ℃	Temperature: ±0.1°C Dew point: ±0.15°C
		DT-ACG	-40 ℃~60 ℃	0.01 ℃	±0.2°C (Optional0.1°C)
Digital thermometer		DTSW-Lc	-50 ℃~150 ℃	0.001 ℃	±0.05 ℃

Accessory selection

Name	Hook	Medium	Appendix
Picture			
Choose and buy information	Standard	Standard	Standard

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

DTSL Pro Thermohygrometer Automatic Calibration System

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 chamberis. 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

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.

Unattended -

Automatic positioning
Automatic photo
Automatic collection
Automatic identification
Automatic calculation
Automatic judgment

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 Thermohygrometer"
"JJF1076-2020 Calibration Specifications for Digital Thermohygrometer"
"JJF1564-2016 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.

DEARTO Instrument · Quality Model

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 auto matic 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	●	●	●	●

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.

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 emperature 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
Unifornality	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 peed 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.					

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.

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 mize	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	≤0.1°C(20°C ± 3°C)		
Humidity uniformity	≤0.5%RH(20°C ± 3°C)		
Temperature stability	±0.05°C		
Humidity stability	±0.5%RH		
Sensor test window	Combined design, support on-demand customization		

Overview

TADT-atm Temp.-Humidity-Pressure Integrated Control Generator is specially developed to meet the calibration needs of meteorological units for motor vehicle testing. TADT-atm is a high-end measuring device that accurately measures key parameters such as temperature, relative humidity and atmospheric pressure in the vehicle testing environment. It can accurately simulate the temperature, relative humidity and atmospheric pressure under different conditions to ensure the accuracy and efficiency of the calibration work of the meteorological unit; it is mainly used in motor vehicle testing stations, metrological testing organizations and scientific research institutes to help ensure the accuracy of the measurement of the meteorological unit, and then improve the accuracy of the motor vehicle testing results.

TADT-atm Temp.-Humidity-Pressure Integrated Control Generator

Temperature
Relative Humidity ↔ **Simultaneous calibration**
Atmospheric Pressure

Effective working volume : 9.3L

Features & Advantages

Integrated multi-parameter calibration	Temperature, relative humidity and atmospheric pressure can be calibrated at the same time, eliminating the cumbersome process of using multiple devices to calibrate separately, and dramatically improving calibration efficiency.
Real-time curve display	With powerful data visualization capabilities, it supports real-time display of temperature, humidity and pressure curves, which is convenient for users to intuitively grasp the trend of data changes.
Intuitive user interface	Equipped with 7 inch color LCD touch screen, the operation interface design is simple and intuitive, bringing users a convenient interactive experience.
Smart conversion software	The instrument has built-in professional humidity conversion software, which can quickly convert relative humidity, temperature and dew point temperature, providing users with more data reference.
Precision calibration function	Supports multi-point correction for temperature, humidity, and pressure to ensure the reliability of measurement data.
Communication interface	Supports RS232 or RS485 communication for easy data transmission and system integration with other devices.
Split power communication	Provide split inspected sensor power supply communication module, effectively enhance the flexibility and adaptability of the equipment to meet the use of different scenarios.
Efficient structural design	The measuring chamber is equipped with transparent window and illumination design, which is convenient for reading data of various small temperature and humidity meters; the external drying cylinder design makes the desiccant replacement can be operated online under power-on condition; the dual-area drying cylinder design supports two kinds of desiccants, namely, molecular sieve and color-changing silica gel at the same time; and the intuitive liquid level and desiccant status display is convenient for the monitoring of the status in the working process.Effective working area size: 220*275*230 (mm).
Flexible calibration point settings	Temperature calibration includes multiple calibration points such as -10℃, 0℃, 20℃, 30℃, 40℃, etc. The calibration sequence is scientific and reasonable. First calibrate the negative temperature point and then gradually increase the temperature to effectively prevent frost. The relative humidity calibration points include 30%, 50% and 80% RH, accurately cover the common humidity calibration range and meet the calibration needs of different humidity environments. The atmospheric pressure calibration points can be flexibly set according to local conventional atmospheric pressure, upper and lower limits, and fully consider the actual situation in different regions to ensure the accuracy and practicality of the calibration results.
Standardized and efficient calibration process	Preparation before calibration is simple, after warming up, put the sensor of the weather unit under calibration into the center of the calibration chamber, close the lid of the calibration chamber to start calibration.During the calibration process, after each calibration point reaches the set value and is balanced, the data is recorded at minute intervals to ensure that the calibration work is carried out in an efficient and orderly manner, providing users with reliable calibration results.

Technical Parameters

Temperature indicators		Relative Humidity indicators		Atmospheric pressure indicators	
Temperature range	-20 ℃ 50 ℃	Humidity range	5 %RH 95 %RH 20 ℃	Pressure range	50 kPa 120 kPa
Maximum allowable tolerance	≤ ±0.1 ℃	Maximum allowable tolerance	≤ ±0.8 %RH	Pressure sensor accuracy rating	0.1 level
Rate of change of temperature	≤ ±0.2 ℃/min -20 ℃~50 ℃	Humidity uniformity	≤ ±0.8%RH/min 20℃		
Temperature uniformity	≤0.1 ℃ 10 ℃~30 ℃ ≤0.2 ℃ 30 ℃~50 ℃ ≤0.3 ℃ -20 ℃~10 ℃	Humidity stability	≤0.5 %RH (30 %RH~80 %RH) ≤0.5 %RH (5 %RH 30 %RH) ≤±1.0 %RH (95 %RH)	Pressure stability	≤0.1kPa/min
Temperature stability	≤±0.05 ℃ 10 ℃~30 ℃ ≤±0.1 ℃ 30 ℃~50 ℃ ≤±0.2 ℃ -20 ℃~10 ℃	Rate of change of humidity	±0.3 %RH (30 %RH 80 %RH) ±0.5 %RH (5 %RH 30 %RH) ±0.5 %RH (95 %RH)	Offer customization services.	

Overview

The low dew point generator can continuously generate moisture at -80℃-+ 20℃ 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.

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 ≤-80℃.
- 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	≤-80℃	Range	DP: -80°C to +15°C (Upper limit is less than 5°C Ambient temperature)
Input gas pressure	0.6-0.8MPa	Stability	DP: Fluctuation ≤±0.1°C in half an hour
Output gas pressure	0.3MPa (Adjustable)	Response Time	≤1min
Operating temperature	5-40℃	Operating temperature	5℃ to 40°C
Storage temperature	-40 +50℃	Storage temperature	-40°C to +50°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±10% 50Hz	Air inlet and outlet connector	316 Stainless steel 1/4"
Power	300W	Adjustable Flow	0-10L/min
Dimension(mm)	485 ×500×260 (W×D×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℃ to +98℃	Serial Output	RS 232
Dew point measurement accuracy	±0.1℃	Power Source	22VAC 50/60Hz Power 60W
Display resolution	0.01℃	Operating Temperature	-20 to100℃ Humidness ≤95%
Repeatability	±0.05℃		
Sensitivity	±0.01℃		
Response time	Stability test for 1 minute±15℃dp		
Range	-45 to +150℃		
Precision	±0.1℃		
Withstand voltage range	Less than1.5MPa		
Screen	7 "Color Touch Screen		
Measurement display unit	℃dp ℃ %RH PPMV L/min		

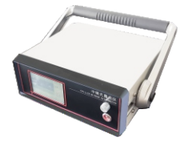
Overview

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.

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 / -50°C to 150°C
Resolution	0.001°C
Accuracy (@20°C)	≤0.05°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°C	0.01°C
Precision	Temperature:±0.1°C ; Dew Point: ±0.15°C	Temperature:±0.1°C Dew Point: ±0.2°C
Repetitive	±0.05°C	±0.05°C
Service environment	-20 °C to +50°C, Maximum 100%RH non-condensing (optional)	-20°C to 50°C;Humidity: ≤95%
Response time	1 min +10°C DP stability measurement	1 min +10°C DP stability measuremen
Main controller weight	1.5kg	4kg
Power supply	100 to 240VAC, 50 to 60Hz	22VAC, 50/60Hz; Input: 60W

Chilled Mirror Hygrometer

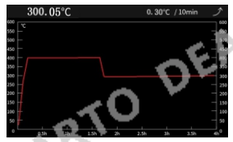
Dew point measurement range	**-80 to+20℃ -95 to +20℃**
Display resolution	0.01℃
Measurement accuracy of dew point sensor	±0.1℃(Primary Standard)
Repeatability/Sensitivity	±0.05℃ / ±0.01℃
Flow measurement	Range: 0 to 1.5L/min ; Precision: ≤±0.25%FS
Withstand voltage range	Less than 1.5MPa
Measurement display unit	℃dp ℃ %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

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

DTZ-460BG Series Surface Probe Temperature Calibrator

Wide Measuring Range
50°C~600°C

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：±0.5°C@200°C.
- Rapid rise and drop, fast and stable: it only takes 30min for room temperature to rise to 400°C.
- Temperature control and stable：±0.3°C/10min(@300°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.

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	±0.2°C/10min@ At room temperature≤ t≤100°C ±0.3°C/10min@100°C < t≤300°C ±0.4°C/10min@300°C < t≤400°C ±0.6°C/10min@400°C < t≤500°C		
Uniformity	0.3°C At room temperature≤ t≤100°C 0.7°C at 100°C < t≤300°C 1.2°C at 300°C < t≤400°C 1.8°C at 400°C < t≤500°C		
Display accuracy	±0.3°Cto ±0.5°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℉ to 140℉)； 5%RH to 80%RH(No condensation)		

Temperature And Humidity Inspection System

Product selection navigation chart

Distributed Wireless Acquisition System

DTZ-300WX	Distributed Wireless Data Acquisition System

Intelligent Temperature Humidity Data Acquisition Logger

DTZ-300BWG	Smart Temperature and Humidity Data Acquisition Logger
DTZ-300BX1609G	Temperature and Humidity Data Acquisition Logger

Temp. and Hum. Monitoring System

DTWX-01	Online Temperature and Humidity Monitoring 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

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 Aystem

Product features

- **Fast sampling speed**: single-channel sampling speed is less than 0.1 seconds; 16-channel sampling speed is less than 10 seconds.
- **Long communication distance**: Real-time transmission of temperature and humidity data over a wide range and long distance, with a communication distance ≥ 1000 meters (open environment, antenna 1.2 meters above the ground).
- **Large coverage area**: It can connect multiple measurement modules at the same time to realize comprehensive inspection of temperature and humidity in different areas, different equipment and different locations, and improve the timeliness and coverage of monitoring.
- **Flexible use**: supports group measurement, and each group is independent of each other.
- **Simultaneous correction**: complete high-precision correction of multi-module and multi-channel temperature and humidity sensors at one time.
- **Support verification procedures**: Support relevant verification procedures and automatically complete various indicator calculations without the need for host computer software.
- **Convenient data collection**: Each module can independently complete data collection and storage, save data in real time, and support data export.
- **Real-time refresh**: The single acquisition module interface can view all sampling data of the module and refresh it continuously.
- **Large storage space**: built-in 16G memory card.
- **One machine for multiple uses**: One host supports simultaneous detection of multiple experimental equipment; supports simultaneous detection of 160 temperature sensors/100 humidity sensors.
- **The sensor interface is stable**: To prevent the sensor line from disconnecting, the measurement module and the sensor are locked with fasteners.
- **Supports a variety of temperature measuring elements**: Supports thermocouple types: S, R, B, K, N, E, J, T; Thermal resistor: Pt100; Built-in Pt100 cold end compensation.
- **Low power consumption**: Intelligent sleep design maximizes the device standby time while ensuring normaloperation.
- **Alarm function**: Built-in intelligent algorithm, according to the set temperature/humidity upper limit value, when the measured value exceeds the set value, the over-limit measurement data will be displayed in red font.
- **Battery function**: built-in lithium battery, charge and discharge protection circuit; intelligent switching of internal/external power supply to extend battery life.
- **Visual operation interface**: Equipped with an intuitive and easy-to-use visual operation interface with clear interface design and reasonable functional layout.

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 ≤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℃
- The full range calibration accuracy of module +PT100 sensor is better than ±0.1 ° C at -80 ° C ~300 ° C
- Type-c charging port

DTZ-300BX1609G Temperature Humidity Data Acquisition Logger

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℃to 800℃	±0.1℃	0.01℃
	K	-200℃to 0℃	±(T×0.155%+0.05)℃	
		0℃to1372℃	±(T×0.077%+0.05)℃	
	J	-200℃to 0℃	±(T×0.15%+0.05)℃	
		0℃to 1200℃	±(T×0.065%+0.05)℃	
	E	-200℃to 0℃	±(T×0.121%+0.05)℃	
		0℃to 1000℃	±(T×0.065%+0.05)℃	
	N	-200℃to 0℃	±(T×0.180%+0.08)℃	
		0℃to 1300℃	±(T×0.065%+0.08)℃	
	R	0℃to 1768℃	±(T×0.07%+0.4)℃	
	S	0℃to 1768℃	±(T×0.07%+0.4)℃	
	B	400℃to 1820℃	±(T×0.065%)℃	
	T	-250℃to 0℃	±(T×0.10%+0.05)℃	
		0℃to 400℃	±(T×0.065%+0.05)℃	
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℃	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

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

Overview

DTWX-01G Online Temperature and Humidity Monitoring 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-01has 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.。

DTWX-01G Online Temperature and Humidity Monitoring 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

Overview

DTZ-300BWG Smart Temperature and 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.

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℃.
- 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) ℃ (0 to 85)%Rh
Storage environment	(0 to 70)℃ (0 to 100)%Rh

Technical indicators

Range	Measuring Range	Display resolution	Accuracy	Sampling rate	Sampling mode	Output data type	Note
K	-200℃ to 1300℃	0.01℃	0.5℃	0.2S/ 24channel	24 channels of simultaneous sampling1 This ensures that the data is synchronized in full real time	Configurable Voltage value Temperature value	It conforms to the ITS-90 temperature scale
J	-200℃ to 900℃		0.5℃				
T	-200℃ to 400℃		0.5℃				
E	-200℃ to 1000℃		0.5℃				
N	-200℃ to 1300℃		0.5℃				
B	250℃ to 1820℃		0.8℃@1000℃				
R	0℃ to 1768℃		0.7℃@1000℃				
S	0℃ to 1768℃		0.9℃@1000℃				
Pt100	-200℃ to 950℃	0.001℃	0.05℃@0℃			Configurable Voltage value Temperature value	1mAExcitation current source
			0.08℃@300℃				
			0.12℃@600℃				
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	0.008%+0.003%

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

Overview

DTRC Wireless real-time verification system supports wireless real-time data transmission, can be remotely programmed, easy to use, improve verification efficiency, and accuracy can reach ±0.1℃. The software is specially developed for GMP, complies with the specifications of FDA 21CFR Part 11, has a low power consumption design, and the battery can support more than 150,000 samples.

Overview

DTPro Wireless Temperature/Humidity/Pressure sterilization This system includes wireless verification software, wireless verification probes, data readers, etc. The wireless verification probe comes with its own battery, which is set up through the wireless verification software and a data reader, and then put it into the device to be tested, continuously record the situation in the device, and then read the data through the wireless verification software, and conduct statistical analysis to form a report.

DTRC-G Wireless Real-time Validation System
DT Pro Wireless Temperature/Humidity/ Pressure Validation System

Wireless Real-time Validation System

Wireless real-time temperature validation system

Wireless real-time temperature and humidity validation system

Wireless Temperature/Humidity/Pressure Sterilization

Functions / features

Wireless Real-time Validation System

- 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.

Wireless Temperature/Humidity/Pressure Sterilization

- 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.

Implemented procedures and specifications

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

Technical Parameters

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℃to 50℃	Temperature：-40℃to 85℃ Humidity：0%RH to 100%RH	Temperature：-40℃to 140℃ Pressure: 0 to 600kpa(absolute pressure)
Accuracy measurement	±0.1℃	Temperature：±0.1℃ Humidity：±2%RH	Temperature：±0.1℃ ;Pressure：±0.1(Full range)
Display resolution	0.01℃	Temperature：0.01℃ Humidity：0.01%RH	Temperature：0.01℃ Humidity：0.01kpa
Record the frequency	1s to18h	1s to 18h	1s to 18h
Data recording capacity	64000	Temperature：32000 ; Humidity：32000	Temperature：32000 ; Pressure: 32000
Probe size	φ24mm×78.6mm	φ25.8mm×74.6mm	φ25.8mm×89.2mm
	1700mAh/3.6V high temperature lithium battery		
Probe weight	91g	104g	121g
Material	316L stainless steel +PEEK		
Protection class	IP68 (Completely waterproof)	IP50(Dustproof or waterproof)	IP68(Completely waterproof)

Specification	Temperature Verifier		Temperature humidity tester	Temperature pressure tester
Model	TDLA	TDLB/TDLC(Flexible probe)	MDLA	PDLA
Operating temperature	-90°C to 150°C (Expandableto 400°C with heat insulation box)	-50°C to 150°C (Expandableto 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 Pressure ±0.1% full scale
			±2%RH	
Sensor	Pt100 Class 1/3 DIN	Pt100 Class 1/3 DIN	Temperature:PT100	Strain
			Humidity:capacitive	
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

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)	

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.

DTZ-500G Wireless furnace temperature test system

Technical indicators

DTZ-500G Wireless Furnace Temperature Test System							
Measuring points	18channels	Accuracy	±0.4℃	Sensor	K、N、S、T	Temperature measurement range	10~1300℃
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						

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 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.

Overview

The DTEL-15 series multi-function process calibrator is a high-performance instrument designed for calibrating thermal secondary instruments, pressure instruments and DCS systems. It is beautifully shaped and durable, making it an ideal tool for calibrating, maintaining and repairing thermal instruments.

DTEL-15G Multifunctional Process Calibrator

Features/Advantages

- **Multi-functional measurement and output**: It can measure and output various signals such as V, mV, mA, Ω, Hz, etc. It can also simulate thermocouple or RTD signals, measure pressure and temperature, and calibrate pressure switches.
- **Signal isolation and power supply**: Output analogue signals can be carried out at the same time and isolated from each other, 24V DC power supply is provided, which is isolated from measurement and output, 24V DC loop power supply is also provided and the mA signal of the loop is measured.
- **Friendly operation interface**: Equipped with high-resolution display, it has good human-machine interaction interface and adopts full Chinese operation interface. Flexible output modes: support step output, programmable step signal and interval time, with two modes: automatic and manual; output mA signal with two modes: mA source or analogue transmitter; output Hz signal amplitude can be set, with square wave or sine wave mode.
- **Temperature Compensation and Unit Conversion**: Cold end temperature compensation of Pt100 probe, ambient temperature tracking or constant temperature setting mode; multifunctional and programmable unit conversion function, which can convert a variety of unit quantities.
- **Data processing and other features**: can lock and unlock the value during measurement, collect the most value and calculate the average value; can store the on-site inspection data and manage it through the communication software; powerful lithium battery can continue to work for more than 12-30 hours, and can be calibrated for the output and measurement items.

Technical Parameters

Output range	One year, ambient temperature: 20℃ ±5℃		Measurement range	Accuracy indicators ± %RD+%FS	
	Level 0.01	Level 0.02		Level 0.01	Level 0.02
10.99999 V	± 0.008 Reading 0.0001 V	± 0.015 % Reading 0.0001 V	± 59.9999 V	± 0.008 Reading 0 .0005 V	± 0.015 % Reading 0 .0005 V
1.099999 V	± 0.008 Reading 0.00001V	± 0.015 % Reading 0.00001V	± 5.99999 V	± 0.008 Reading 0 .00005 V	± 0.015 %Reading 0 .00005 V
– 99.9999 mV ~ 109.9999 mV	± 0.008 Reading 0.003 mV	± 0.015 % Reading 0 .003 mV	± 599.999 mV	± 0.008 Reading 0.005 mV	± 0.015 %Reading 0.005 mV
10 types of thermocouples ℃	See "TC Thermocouple Technical Indicators" for details	See "TC Thermocouple Technical Indicators" for details	± 1 19.999 mV	± 0.008 Reading 0.003 mV	± 0.015 %Reading 0.003 mV
30.0999 mA	± 0.01 % Reading 1 μA	± 0.015 % Reading 1 μA	10 types of thermocouples ℃	See "TC Thermocouple Technical Indicators" for details	
4000.00 Ω	± 0.008 Reading 0.04 Ω)	± 0.015 % Reading 0.04 Ω)	± 1 19.999 mA	± 0.01 Reading 1 μA	± 0.015 % Reading 1 μA
400.000 Ω	± 0.008 Reading 0.005 Ω)	± 0.015 % Reading 0.005 Ω)	± 23.9999 mA	± 0.01 Reading 1 μA	± 0.015 % Reading 1 μA
6 types of thermal resistance℃	See “RTD Thermal Resistance Technical Indicators” for details		5999.99 Ω	± 0.008 Reading 0.05 Ω)	± 0.015 % Reading 0.05 Ω)
54999.9 Hz	± 2 Hz	± 2 Hz	59999.9 Hz	± 2 Hz	± 2 Hz
5499.99 Hz	± 0.2 Hz	± 0.2 Hz	9999.99 Hz	± 0.4 Hz	± 0.4 Hz
549.999 Hz	± 0.02 Hz	± 0.02 Hz	999.999 Hz	± 0.04 Hz	± 0.04 Hz

Precision Infrared Calibrator

Product selection navigation chart

Portable Blackbody Radiation Source

DTBF-50	Normal Temp.	30 ℃ 50 ℃
DTM-20N	Low Temp.	20 ℃ 125 ℃
DTM-550B	Medium Temp.	RT+10 ℃ 550 ℃
DTM-550		50 ℃ 550 ℃

Laboratory Blackbody Radiation Source

DTR-50N	Low Temp.	-50 ℃ 100 ℃
DTR-30N		-30 ℃ 100 ℃
DTM-50N		-50 ℃ 80 ℃
DTM-30N		-30 ℃ 80 ℃
DTM-700G	Medium Temp.	50 ℃ 700 ℃
DTR-800		50 ℃ 800 ℃
DTR-1200		100 ℃ 1250 ℃

High-Temperature Blackbody Radiation Source

DTR-1700	High Temp.	100 ℃ 1700 ℃
DTM-2050		300 ℃ 2050 ℃
DTM-2350		600 ℃ 2350 ℃
DTM-2650		600 ℃ 2650 ℃
DTM-3050	Ultra High Temp.	600 ℃ 3050 ℃

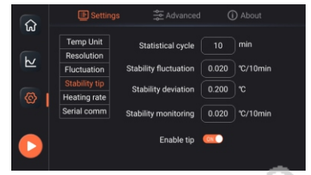
Calibration Device For Ear Temperature/ Frontal Temperature/Body Temperature Instrument

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

Overview

Portable Blackbody Radiation Source is a device that plays a key role in infrared calibration, temperature measurement and related scientific and industrial applications.It produces stable and accurate blackbody radiation to provide a standard radiation reference for the calibration of various infrared temperature measurement instruments, thermal imaging cameras and other equipment. Its high accuracy, stability and versatility are of great value in scientific research, industrial and calibration applications.

Portable Blackbody Radiation Source



Stability tips

Features / Advantages

Full-range temperature resolution 0.01℃	3-speed self-adjustment 0.01℃, 0.1℃, 1℃
6-10 point temperature calibration and correction	Automatic linear fitting of SV and PV values to ensure high precision temperature control.
Capacitive touch screen	Smart human-machine interaction interface, multi-function window display.
Adjustable rate of temperature rise	Supports uniform temperature rise according to the set value to ensure the smoothness and controllability of temperature change.
Stability tips	Real-time display of operational data, intuitive understanding of the state of the equipment
Chinese and English switching	With bilingual switching interface, adapt to internationalization needs
Over-temperature Automatic protection	Hardware and software dual protection mechanism
Communication mode	Support USB, WIFI, WLAN, serial communication
Temperature unit switching	Support ℃, ℉, K unit switching
Mobile APP control	Support remote control and real-time monitoring of equipment operating status.

Technical Parameters

Model	DTM-20NBG	DTM-550BG
Temp. range	-20 ℃to 125 ℃	RT+10 ℃to 550 ℃
Emissivity	Better than 0.995	Better than 0.995
Temp. resolution	0.01 ℃ full scale	0.01 ℃ full scale
Cavity Diameter/Depth	Φ65mm / 160mm	Φ65mm / 160mm
Cavity structure	Cylindrical cone	Cylindrical cone
Accuracy	±0.2 ℃/10min @-20 ℃≤t≤100 ℃ ±0.3 ℃/10min @100 ℃ t≤125 ℃	±0.3 ℃/10min @ RT≤t≤300 ℃ ±0.5 ℃/10min @300 ℃ t≤550 ℃
Stability	±0.10 ℃/10min @-20 ℃≤t≤100 ℃ ±0.15 ℃/10min @100 ℃ t≤125 ℃	±0.1 ℃/10min @ RT≤t≤100 ℃ ±0.1 ℃/10min @100 ℃ t≤300 ℃ ±0.2 ℃/10min @300 ℃ t≤400 ℃ ±0.2 ℃/10min @400 ℃ t≤500 ℃ ±0.3 ℃/10min @500 ℃ t≤550 ℃
Temperature uniformity	±0.10 ℃/10min @-20 ℃≤t≤100 ℃ ±0.15 ℃/10min @100 ℃ t≤125 ℃	0.10 ℃ @ RT≤t≤ 100 ℃ 0.30 ℃ @100 ℃ t≤ 300 ℃ 0.45 ℃ @300 ℃ t≤ 400 ℃ 0.60 ℃ @400 ℃ t≤ 500 ℃ 0.75 ℃ @500 ℃ t≤ 550 ℃
Heating time	25min(25 ℃→125 ℃)	35min (50 ℃→300 ℃ 58min (50 ℃→550 ℃
Cooling time	30 min(25 ℃→-20 ℃)	2h30min (300 ℃→50 ℃ 3h30min (550 ℃→50 ℃
Power	600W	1000W
Communication port	RS232/USB/WIFI/LAN	RS232/USB/WIFI/LAN
Power supply	220V AC ±10% /50Hz 5.5A	220VAC ±10% /50Hz 5.5A
Weight	约 10Kg	约 10Kg
Overall dimensions	345 L ×200 W ×360 H	345 L ×200 W ×360 H

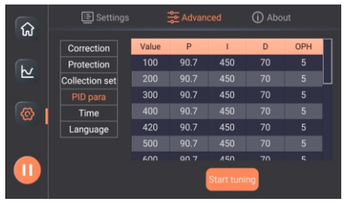
Overview

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.

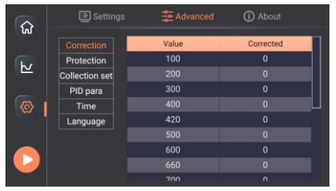
Smart Application

Real-time curve display

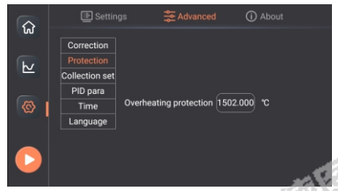
Custom switch for temperature units



PID segmentation control



Temperature modification at 6-10 points



Automatic protection for overheating

Chinese and English bilingual switching

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

Portable Blackbody Radiation Source

Technical indicators

Name	Ear Temperature/Frontal Thermometer Calibration Device	Thermometer Calibration Device	Portable Blackbody Radiation Source	
Model	DTME-50	DTSE-50	DTBF-50	DTM-3050BS
Temperature range	0°C to 50°C (32-42°C)	0°C to 100°C	30°C to 50°C	30°C to 50°C
Display resolution	0.001°C	0.001°C	0.01°C	0.01°C
Stability	±0.01°C /10min	±0.01°C /10min	≤0.01°C /30 min	±0.05°C/30min
Cavity diameter	φ10mm/φ50mm	φ130mm	Φ60(mm)	70×70 (mm)
Radiation coefficient	0.999	0.999	0.997	0.95
Power supply	220V ± 10% 50Hz	220V ± 10% 50Hz	220V ± 10% 50Hz	220V ± 10% 50Hz
Power	2kw	2kw	100W	60W
Environment temperature	15°C-30°C	15°C-30°C	10°C~32°C Typical values	0~40°C
Weight	115kg	115kg	8.3Kg	2.5Kg
Overall dimensions	660×540×1120 (mm)	660×540×1120 (mm)	358×154×251 (mm)	140×250×180 (mm)

Overview

The bold radiation source is a device that plays a key role in infrared calibration, temperature measurement and related scientific research and industrial applications. It can generate stable and accurate blackbody radiation, providing standard radiation reference for the calibration and calibration of various infrared temperature measuring instruments, thermal imagers and other equipment. Its high precision, stability and versatility have important application value in scientific research, industry and calibration fields.

Laboratory bold radiation source

Technical indicators

Specification	Low Temperature		Medium Temperature		High Temperature
Model	DTBR-S50G	DTBR-S30G	DTBR-S800G	DTBR-S1200G	DTR-1700
Temperature range	-50°C to 100°C	-30°C to 100°C	50°C to 800°C	100°C to 1250°C	**100 ℃**to **1700 ℃**
Emissivity	Superior to0.998		Superior to 0.998		0.999
Mouth	Φ65mm(Support customization)		Φ65mm(Support customization)		Φ50mm/25.4mm（1.0"
Cavity shape	Spherical		Spherical		Closed tube cavity
Stability	≤0.1°C/10min		≤(Largest of 0.1°C and 0.1%t)/10min		±0.2 °C
Power	3.0KW		4.0KW		3KW
Target surface uniformity	≤0.15°C		≤(0.15°C and 0.15%t were the largest)		Accuracy Reading 0.25%±1℃
Resolution	0.01°C		0.1°C		0.1 ℃
Dimension	850×550×1100mm		550×600×800mm		510×670×560mm
Net weight	About 100Kg		About 60Kg		80Kg

Specification	Low Temperature		Medium Temperature	
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

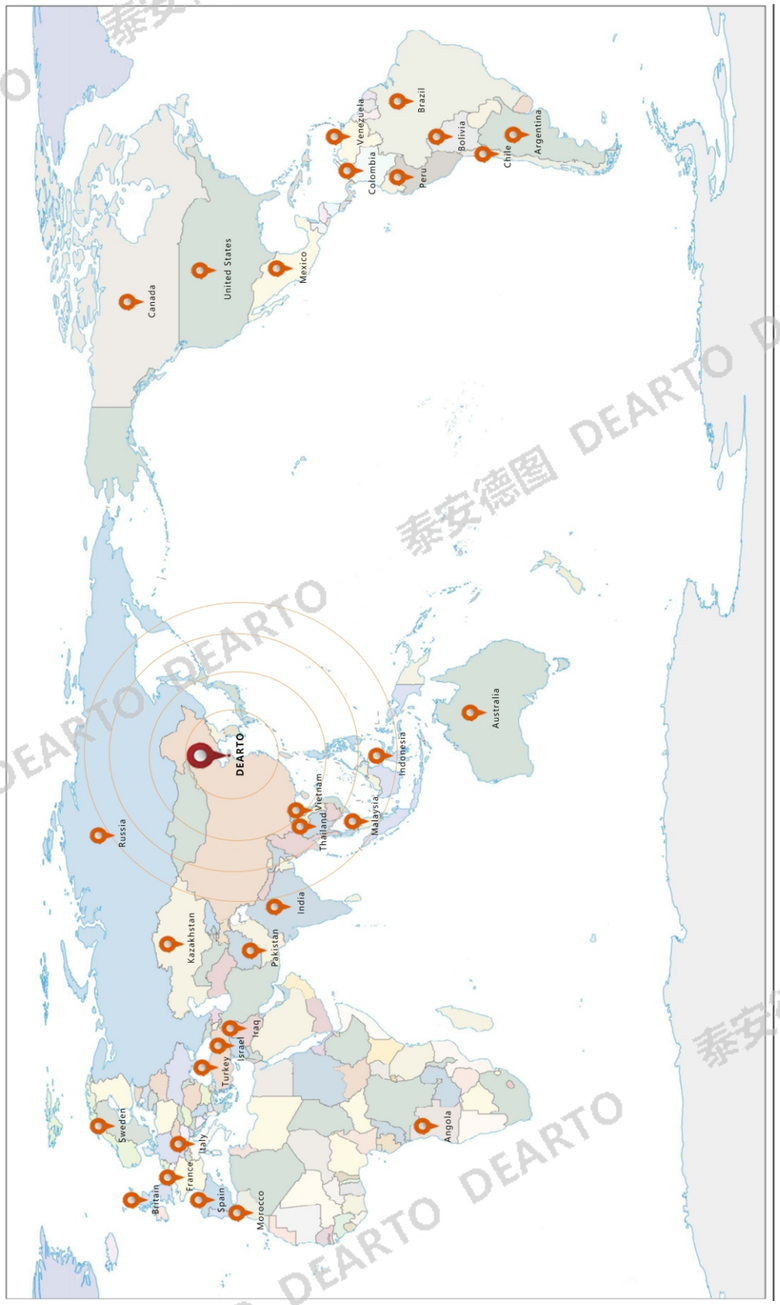
Specification	High Temperature			Ultra-high Temperature
Model	DTM-2050G	DTM-2350G	DTM-2650G	DTM-3050G
Temperature range	**300 ℃** to **2050 ℃**	**600 ℃** to **2350 ℃**	**600 ℃** to **2650 ℃**	**600 ℃** to **3050 ℃**
Emissivity	0.995 Almost flat	0.995 Almost flat		0.995 Almost flat
Mouth	25.4mm(1.0")	25.4mm(1.0")		25.4mm(1.0")
Stability	±1℃	±1℃		±1℃
Power	14KW	25KW		25KW
Target surface uniformity	Reading 0.25%±1℃	Reading 0.25%±1℃		Reading 0.25%±1℃
Dimension	600×1800×800	600×1800×800		600×1800×800
Net weight	175Kg	175Kg		175Kg

Typical Customers




中国计量科学研究院 National Institute of Metrology, China
NIMTT
中国交建 CHINA COMMUNICATIONS CONSTRUCTION
国家电网公司 STATE GRID CORPORATION OF CHINA
中国铝业网 中国铝业股份有限公司官网
中国能建 CEEC
中国电建 POWERCHINA
中国核建 NEC
中国一汽 FAW GROUP
中国石化 Sinopec
中国石油
东方电气 DEC
国药集团 SINOPHARM
华润 与您携手 改变生活
GEELY 吉利控股集团
SGS
中
WEICHAI 潍柴
BYD
蒙牛
伊利
Coca-Cola 可口可乐
Heraeus
BOE
Haier
Hisense
FOXCONN
BAOWU
COSCO SHIPPING 中远海运控股股份有限公司 COSCO SHIPPING Holdings Co., Ltd.

DEARTO Instrument · Quality Model



Sales network

Free Technical Support Free Software Upgrade 24-hour Service