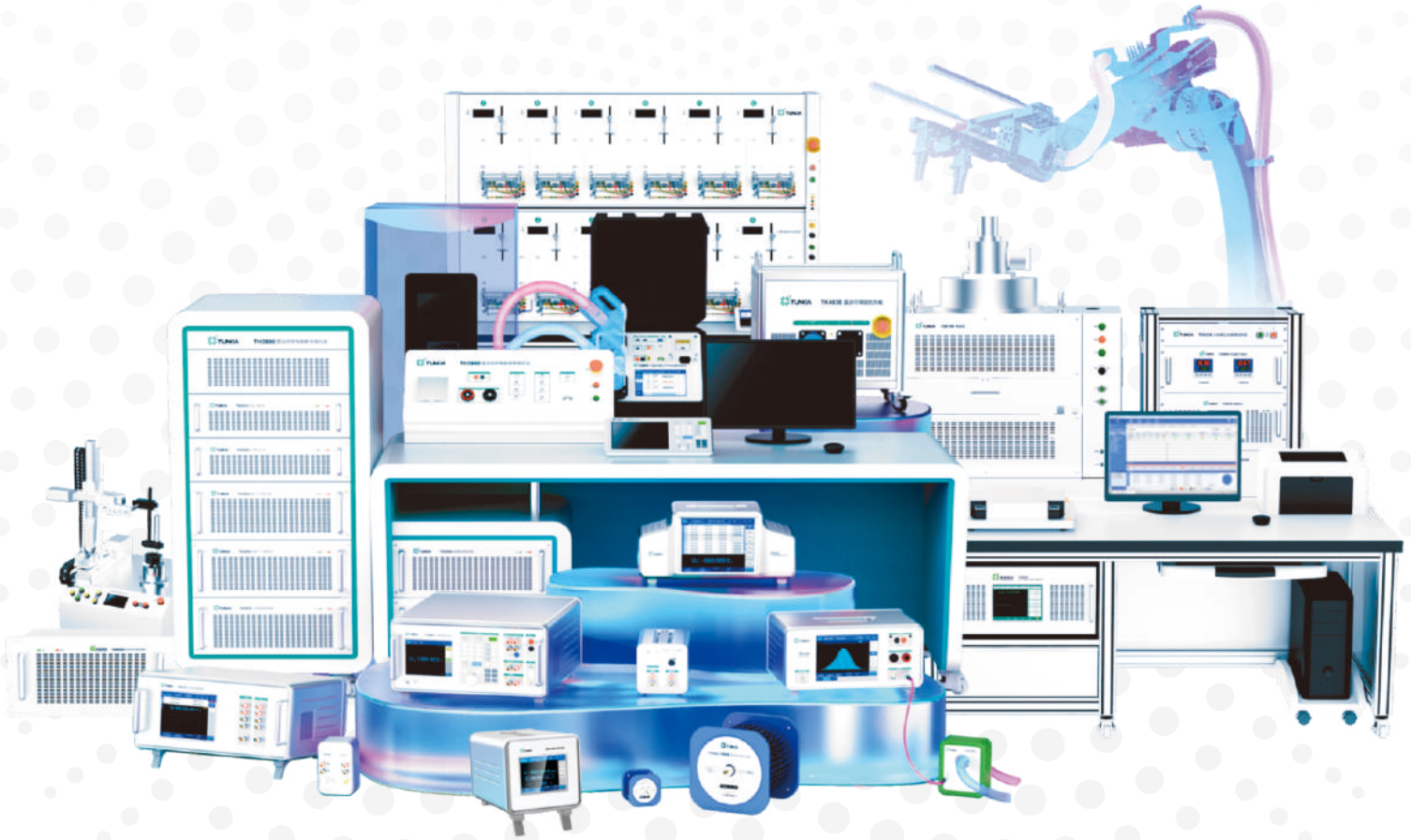
TUNKIA®



Electrical Calibration & Magnetic Measurement

Metrology | Industry | Research

Product Catalog

Tunkia Co., Ltd.
长沙天恒测控技术有限公司


TUNKIA

Company Profile

TUNKIA Co., Ltd. stands as a distinguished leader in the realm of electrical calibration and magnetic measurement, offering a comprehensive range of advanced equipment and services to meet the diverse needs of industries worldwide. From metrological calibration to the intricacies of power grid management, industrial testing, and pivotal scientific research endeavors, TUNKIA's products and technologies excel in addressing complex measurement challenges. With a global footprint extending across more than 50 countries and regions, TUNKIA serves a clientele exceeding 30,000 users worldwide, addressing complex measurement challenges with cutting-edge products and technologies.

Founded in 2006, TUNKIA has been at the forefront of the electromagnetic measurement industry for nearly two decades. Presently, the company boasts a 12,000m^2 research and development center alongside an 11,000m^2 intelligent factory. With a workforce exceeding 400 employees, including 30% dedicated to research and development, TUNKIA allocates 25% of its annual revenue to furthering innovation. This commitment underscores its deep technical expertise and robust product development capabilities.

TUNKIA has currently developed three major product series: Scientific Instruments, General Instruments, and Large-scale Equipment. The Scientific Instruments series aims to domesticate and independently control high-end instruments to break the technology stranglehold. The General Instruments series, based on precision measurement technology, provides various general-purpose testing equipment for power grids and industrial inspection, strengthening industrial quality standards. The Large-scale Equipment series applies intelligent and automated testing technology to high-end manufacturing industries such as new energy, new materials, and sensors, facilitating the advancement of intelligent manufacturing.

TUNKIA is active in domestic technical committees such as the China Metrology Technical Committee on Electromagnetic and Chinese Society for Measurement, as well as international standardization organizations like IEC and IEEE, and has participated in revising a total of 77 standards, including 3 international standards and 18 national standards. In 2022, the company was honored with the National-Level Specialized, Sophisticated, New and Distinctive “Little Giant”, making it the sole enterprise in the electromagnetic measurement field to receive this recognition.

In the future, TUNKIA will remain committed to practicality and innovation, delivering internationally acclaimed products. We will collaborate with upstream and downstream partners in the industry chain to establish a robust ecosystem for precision testing and quality control instruments.

Technical Origins 1985

R&D Investment 25% of Annual Revenue

400+ Employees 72% Undergraduates

Tunkia Research Institute Engineers 120+

22 Major Series 300 Types of Instruments

COMPANY HISTORY

1985
Origin of Technology

2006
Established Tunkia Co., Ltd

Joined China Metrology Technical Committee on Electromagnetic.

2011
Invited to participate in the National Key Technology R & D Program project

2012
Became a member of the Academic Committee of China's Silicon Steel Detection

Became a member of the Board of Directors of China's Amorphous Materials Academic Committee.

2013
Became the Vice Chairman of the Academic Committee of China's Silicon Steel Detection.

2014
Started representing China to attend the IEC/TC68 meetings.

2015
Mr. Zhou Xinhua attended the APMP meeting and presented an academic report at the TECM working group.

2016
Elected as a member of the first Committee of the Non-crystalline Alloy Application Branch of the Chinese Society for Metals.

Participate in Ministry of Science and Technology NQI, Major Instrument Special Project.

- Field calibration technology of EV charging and changing
- Development and Application of Wideband High Current Measuring Instrument
- Development and Industrialization of DC Energy Measuring and Testing Device

2017

Participated in the Chinese government's assistance program for metrology and standard projects in "One Belt One Road" countries.

2018

Became a member of the Electrical Steel Branch of the Chinese Society for Metals.

2019

Participated in an international conference organized by the Electromagnetic Professional Committee.

2020

Participated in drafting national standards/metrology regulations.

2021

Participated in the IEEE Conference - Guide for Testing Equipment for Direct Current Electrical Energy Meters.

2023

The smart factory is put into operation to realize intelligent manufacturing.

2024

Release TH1950 High Precision Multifunction Calibrator-for 8.5 digit multimeter calibration.

2025

Continuing to deepen the field of electrical and magnetic measurement and develop world-class equipment.

HONOR & CERTIFICATION

National High-tech Enterprise

National-level Specialized, Sophisticated, New and Distinctive “Little Giant”

Technology Innovation Center of State Market Regulation Management System

Certification of Intellectual Property Management System

ISO9001 Quality Management System Certification

Environmental Management System Certification

Software Enterprise Certification

Three-level Enterprise of Safety Production Standardization

3 International Standards Revision

18 National Standards Revision

24 Metrological Specifications Revision

International Standard	IEC 61007	Transformers and inductors for use in electronic and telecommunication equipment - Measuring methods and test procedures
International Standard	IEC 63300	Test methods for electrical and magnetic properties of magnetic powder cores
International Standard	IEEE P2960	Guide for Testing Equipment for Direct Current Electrical Energy Meters
National Standard	GB/T 19345.1-2017	Amorphous and nanocrystalline alloys -- Part 1:Fe-based amorphous soft magnetic alloy strips
National Standard	GB/T 19346.3-2021	Methods of measurement of amorphous and nanocrystalline alloys—Part 3: AC magnetic properties of Fe-based amorphous strip using a single sheet specimen
National Standard	GB/T 19289-2019	Methods of measurement of resistivity, density and stacking factor of electrical steel strip and sheet
National Standard	GB/T 10129-2019	Methods of measurement of magnetic properties of electrical steel strip and sheet at medium frequencies
National Standard	GB/T 39042-2020	Measurement of the magnetic properties of electrical steels by means of a single sheet tester. H-coil method
National Standard	GB/T 29318-202X	Electric energy metering for electric vehicle off-board charger
National Standard	GB/T 28569-202X	Electric energy metering for electric vehicle AC charging spot
National Standard	GB/T 3655-2022	Methods of measurement of the magnetic properties of electrical steel strip and sheet by means of an epstein frame

31 Invention Patents

29 Utility Model Patents

13 Design Patents

76 Software Copyrights

ACADEMIC ORGANIZATIONS

IEC/IC68
China
Representative

IEC/TC51
Expert

IEC/TC66
Expert

IEEE PES
Power and
Energy Society

China Metrology Technical Committee
on Electromagnetic

Chinese Society
for Measurement

China Instrument
Manufacturer
Association

China Semiconductor
Industry Association (CSIA)

China Electrical Equipment
Industry Association

Chinese Society for
Electrical Engineering

China Metrology Technical Committee for
Photovoltaic Measurement Instruments

Electrical Steel Branch of
the Chinese Society for Metals

Non-Crystalline Alloy Application Branch
of the Chinese Society for Metals

China Smart Metering
Infrastructure Alliance

Chinese Technical Committee
for Standardization of
Electrical Instruments and Meters

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KEY CUSTOMERS

Metrology Field

National Institute of Metrology. China

National Institute of Measurement and Testing Technology

Korea Research Institute of Standards and Science

Vietnam Metrology Institute

Cambodia National Metrology Center

Beijing Institute of Metrology

Shanghai Institute of Measurement and Testing Technology

South China National Centre of Metrology

Hubei Institute of Measurement and Testing Technology

Liaoning Institute of Metrology Science

Shaanxi Institute of Metrology Science

Power Industry

State Grid Corporation of China

China Southern Power Grid Company Limited

China Energy Investment

China Huaneng

China State Power Investment Corporation

China Datang Corporation

China Huadian Corporation

China General Nuclear Power Group

China Resources Power Holdings Co., Ltd.

Guohua Power Branch of China Shenhua Energy Co., Ltd.

State Development & Investment Corporation Power Holding Co., Ltd.

China Energy Engineering Group Co., Ltd

Industrial Inspection

China Baowu Steel Group Corporation Limited

Shougang Group

China FAW Group Corporation

BYD

TESLA

HUAWEI

GREE

China Railway Engineering Group Limited

CRRC Corporation Limited

TBEA Corporation Limited

PTTX Corporation Limited

Chint Group

Shanghai Electrical Apparatus Research Institute (Group) Co., Ltd.

MultiDimensiong Technology Co., LTD.

University Research

Chinese Academy of Sciences

University of Oxford

University of Cambridge

Tsinghua University

Peking University

City University of Hong Kong

The University of Sydney

ELECTRICAL MEASUREMENT CONTENT

1 Electrical Multi-function Calibrators

2 Electrical Reference Standards

3 Resistance Standards

4 AC / DC Current Source & Meters

5 Wideband Power Source & Meters

6 DC Power & Energy Standards

7 Single/Three-phase Electrical Meters

8 Single/Three-phase Energy Meters Verification Device

9 EV Charger Testers and Loads

10 Safety Instrument Testing

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12 Industrial Instrument Calibration & Testing

13 Medical Metrology

MAGNETIC MEASUREMENT CONTENT

1 Magnetic Parameters Measurement and Calibration

2 Magnetic Material Testing Equipment

3 Electrical Steel Testing Equipment

Electrical Multi-function Calibrators

TH1950

High Precision Multi-function Calibrator

TH1950 is a new generation of top-level multi-function calibrator with a wider calibration range and higher calibration accuracy. It can output AC and DC voltage and current signals with excellent performance and has built-in high-stability standard resistors.

- High-precision multi-function signal output.
- Calibrate **7.5/8.5 digit** multimeters.
- Supports AC and DC current expansion output to 120 A (with TA1000).
- Excellent output stability, DCV 24h short-term stability ≤1 ppm.
- Excellent interaction performance.
- Supports various value output methods such as touch screen output, button output and rotary knob output.

Specifications

Specifications	Range	1-Year Optimal Uncertainty (k=2)
DC Voltage	±(0 ~ 1100 V)	3.5 ppm + 4 μV @20 V
DC Current	±(0 ~ 2.2 A)	35 ppm + 40 nA @20 mA
AC Voltage	200 μV ~ 1100 V,10 Hz ~ 1 MHz	42 ppm + 50 μV @20 V, 40 Hz~20 kHz
AC Current	9 μA ~ 2.2 A, 10 Hz ~ 10 kHz	103 ppm + 2.5 μA @200 mA, 40 Hz~1 kHz
Resistance	0 ~100 MΩ	6.5 ppm @1 kΩ/1.9 kΩ/10 kΩ/19 kΩ
Frequency	10 Hz ~ 1 MHz	0.005%
Interfaces	RS 232 × 1, USB × 1, LAN × 1	
Touch Screen	5-inch	
Size	432 mm(W) x 517 mm(D) x 222 mm(H)	

TH1950

TA1000

- Accuracy: 100 ppm
- Operating frequency: DC ~ 10 kHz
- Output current: 120 A (max)
- Short-term stability: 0.001%

TH1950 High-precision Multi-function Calibrator can be used with TA1000 Transconductance Current Standard Source to **expand the output current range up to 120 A.**

TD18 SERIES

Multi-function Calibrator

Function	TD1850	TD1855	TD1858	TD1860	TD1870	TD1880
DC Voltage Output	★	★	★	★	★	★
DC Current Output	★	★	★	★	★	★
DC Resistor Output	★	★	★	★	★	★
AC Voltage Output	★	★	★	★	★	★
AC Current Output	★	★	★	★	★	★
AC/DC Power Output	—	★	—	★	★	★
Pulse Frequency Output	★	★	★	★	★	★
DC Small Signal Measurement	☆	☆	—	☆	—	—
Clamp Coil	☆	☆	☆	☆	☆	☆
Capacitive Output	—	—	—	—	—	☆
Thermal Resistor Output	—	—	—	—	☆	☆
Thermocouple Output and Measurement	—	—	☆	—	☆	☆
Calibration Simulation Meter	★	★	★	★	★	★
Remote Control Adjustment Box	☆	☆	—	☆	—	—

★: Standard function ☆: Optional function —: Not support

Specifications	TD1850	TD1855	TD1858	TD1860	TD1870	TD1880
DUT	3.5	3.5	4.5	4.5	5.5	6.5
DC Voltage	1100 V,500 ppm	1100 V, 500 ppm	+1020, -10.4 V,110 ppm	±1100 V, 85 ppm	±1020 V, 52 ppm	±1020 V, 11 ppm
DC Current	22 A/33 A, 500 ppm	22 A/33 A, 500 ppm	±10.2 A, 300 ppm	±22 A/±33 A, 150 ppm	±20.5 A, 70 ppm	±20.5 A, 87 ppm
DC Resistance	220 MΩ, 500 ppm	220 MΩ, 500 ppm	220 MΩ, 500 ppm	220 MΩ, 170 ppm	1100 MΩ, 75 ppm	1100 MΩ, 35 ppm
AC Voltage	1100 V, 500 ppm	1100 V, 500 ppm	1020 V, 500 ppm	1100 V, 500 ppm	1020 V, 200 ppm	1020 V, 117 ppm
AC Current	22 A/33 A, 500 ppm	22 A/33 A, 500 ppm	10.4 A, 1000 ppm	22 A/33 A, 500 ppm	20.5 A, 200 ppm	20.5 A, 250 ppm
Sine Wave Frequency	1100 Hz, 100 ppm	1100 Hz, 100 ppm	20 kHz, 100 ppm	1500 Hz, 100 ppm	500 kHz, 100 ppm	500 kHz, 50 ppm
Touch Screen	5.6 inches	5.6 inches	4.3 inches	7.0 inches	7.0 inches	6.4 inches
Weight	about 18 kg	about 19.5 kg	about 9.5 kg	about 25 kg	about 25 kg	about 24 kg
Size (excluding handles and feet)(W * D * H, unit: mm)	475*400*190	475*400*190	210*365*266	450*505*203	444*510*205	440*462*206

Calibrate 6 ½ DMM

Calibrate 4 ½ DMM

Calibrate 5 ½ DMM

Calibrate 3 ½ DMM

TD1880

Precision Multi-function Calibrator

TD1880 is the most popular type of precision multi-function calibrator with high accuracy . It can calibrate digital multimeters (6 ½ DDM), AC/DC voltmeter, AC/DC ammeter, DC ohmmeter, frequency meter, AC\DC power meters, temperature meters, clamp ammeter, capacitance meters etc.

- Accuracy: 10 ppm
- DCV Output: ±(0 ~ 1020 V)
- DCI Output: ±(0 ~ 20.5 A)
- ACV Output: 1 mV~1020 V
- ACI Output: 29 μA~ 20.5 A
- RES Output: 0 Ω ~ 1100 MΩ
- F Output: 1 Hz ~ 2 MHz
- Pulse Output: 2 MHz

TD1870

Multi-function Calibrator

TD1870 is the cost-effective type of precision multi-function calibrator. It can calibrate digital multimeters (5 ½ DDM), AC/DC voltmeter, AC/DC ammeter, DC ohmmeter, frequency meter, AC\DC power meters, temperature meters, clamp ammeter etc.

- Accuracy: 50 ppm
- DCV Output: ±(0 ~ 1020 V)
- DCI Output: ±(0 ~ 20.5 A)
- ACV Output: 1 mV ~ 1020 V
- ACI Output: 29 μA ~ 20.5 A
- RES Output: 0 Ω ~ 1100 MΩ
- F Output: 1 Hz ~ 2 MHz
- Pulse Output: 2 MHz

TD1860

Multi-function Calibrator

TD1860 is a multi-function calibrator with wide range and high stability. It can calibrate digital multimeters (4 ½ DDM), AC/DC voltmeter, AC/DC ammeter, DC ohmmeter, frequency meter, AC\DC power meters, AC/DC transducer, clamp ammeter etc.

- Accuracy: 100 ppm
- DCV Output: ±(10mV ~ 1020 V)
- DCI Output: ±(3 μA ~ 22 A or 33 A)
- ACV Output: 3 mV ~ 1100 V
- ACI Output: 30 μA ~ 22 A or 33 A
- RES Output: 0 Ω ~ 220 MΩ
- F Output: 1 Hz ~ 2 MHz
- Pulse Output: 2 MHz

TD1858

Portable Multi-function Calibrator

TD1858 is a portable multi-function calibrator and very suitable for on-site calibration. It can calibrate digital multimeters (4 ½ DDM), AC/DC voltmeter, AC/DC ammeter, DC ohmmeter, frequency meter, temperature meters, clamp ammeter etc.

- Accuracy: 100 ppm
- DCV Output: +(10 mV ~ 1020 V), -(10 mV ~ 10.4 V)
- DCI Output: ±(10 μA ~ 10.2 A)
- ACV Output: 10 mV ~ 1020 V
- ACI Output: 10 μA ~ 10.4 A
- RES Output: 1 Ω ~ 220 MΩ
- F Output: 1 Hz ~ 2 MHz
- Pulse Output: 2 MHZ
- Weight: 9.5 kg

TD1850 / TD1855

Multi-function Calibrator

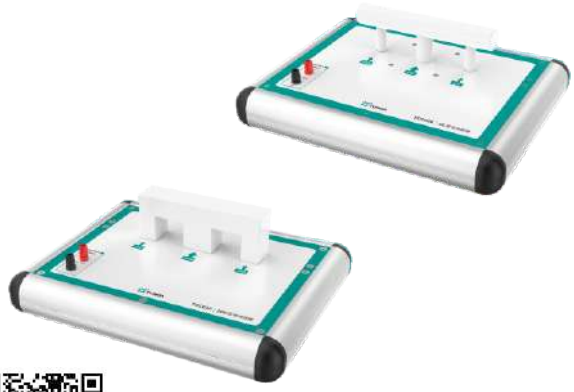
TD1850 Series is a basic yet comprehensive multi-function calibrators with wide range. It can calibrate digital multimeters (3 ½ DDM), AC/DC voltmeter, AC/DC ammeter, DC ohmmeter, frequency meter, AC\DC power meters, AC/DC transducer, clamp ammeter etc.

- Accuracy: 500 ppm
- DCV Output: 20 mV ~ 1100 V
- DCI Output: 2 μA ~ 22 A\33 A
- ACV Output: 20 mV ~ 1100 V
- ACI Output: 200 μA ~ 22 A\33 A
- RES Output: 10 Ω ~ 220 MΩ
- F Output: 1 Hz ~ 2 MHz
- Pulse Output: 2 MHz

TD1020

Current Coil

TD1020 is a series of current coils with equivalent ampere turns method principle, and applied for calibrating clamp ammeters combined with AC\DC standard source.



- Equivalent Current Output: 1100 A / 2200 A
- Max Current Input: 22 A rms / 44 A rms
- DC Accuracy: 0.3%
- AC Accuracy: 0.3%@50Hz，0.5%@400Hz
- Frequency: DC，45 Hz ~ 400 Hz

TD1050

Clamp Meters Calibration Device

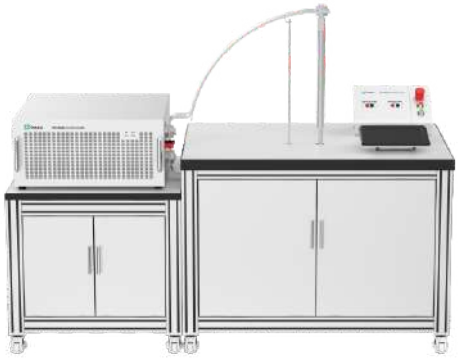
TD1050 can accurately calibrate multi-function clamp meters by single-turn method. It integrates AC/DC high current standard source, AC/DC voltage standard source, and resistance standard source, and also has AC/DC power output function.

- Accuracy: Class 0.05
- DCI Output: 10 mA ~ 1050 A/2100 A
- ACI Output: 10 mA ~ 1020 A/2050 A
- DCV Output: 20 mV ~ 1100 V
- ACV Output: 1 V ~ 825 V
- Frequency: 40 Hz ~ 400 Hz
- RES Output: 10 Ω ~ 220 MΩ
- AC/DC Power Output

TD1000

Clamp Meters Calibration Device

TD1000 can accurately calibrate multi-function clamp meters by single-turn method. It integrates AC/DC high current standard source, AC/DC voltage standard source, and resistance standard source.

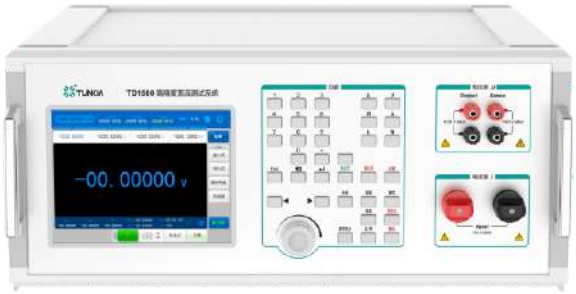


- Accuracy: Class 0.05/Class 0.1
- ACI Output: 20 mA ~ 1100A
- ACV Output: 1 V ~ 825 V
- DCI Output: 10 mA ~ 22A
- DCV Output: 20 mV ~ 1100 V
- Frequency: 45 Hz ~ 65 Hz
- RES Output: 10 Ω ~ 11MΩ

TD1500

High-precision DC Standard Source

TD1500 is a wide range, multi-function, high-precision DC standard source. It can directly output DC voltage, current, power and energy with high stability and high accuracy, which is suitable for verification or calibration of various types of DC measuring instruments.



- Accuracy: Class 0.01 / Class 0.02 / Class 0.05
- DCV Output: 1 mV ~ 1100V/1150 V, 10 μ V ~ 4.4 V
- DCI Output: 1 μ A ~33 A / 120 A
- DCV Measurement: 10 μ V ~ 4.4 V
- Verification of DC electricity meter.
- Secondary signal measurement of the transmitter.

Electrical Reference Standards

TH0100 / TH0104

Advanced DC Voltage Reference Standard

TH0104 is a set of DC voltage reference standards, consisting of four TH0100 , which can be used to calibrate precision DC voltage meters or source. It has the characteristics of high stability, high accuracy, high-drive capability,low temperature-drift,small size for easy portability. It is especially suitable for maintaining the traceability of national standards, and transferring it.

- Reference DCV Output: 10V, 1V, 0.1V
- Stability: ±0.3μV/V (10V, 30Days)
- With the built-in battery power supply, it can work continuously for 72 hours.
- Strong load capacity, 10V voltage output can drive a maximum current of 12mA.
- Calibrate high-precision multi-function calibrators and digital reference multimeters.

TH0110

Programmable DC Voltage Reference Standard

TH0110 is an ultra-precise DC voltage reference with high stability, high accuracy, low temperature drift and small size. It can detect ADC chip linearity, calibrate high-precision DC Voltmeter, the digital nanovoltmeter and the potentiometer.

- DCV Output Range: ± (0 ~ 10 V)
- Reference DCV Output: 2.5 V / 4.096 V / 5 V / 10 V
- Typical short-term stability: 0 2 ppm/min
- Resolution: 1 nV (8 bits).

TH0150

Wideband Voltage Divider

TH0150 is a set of wideband voltage dividers to realize the voltage measurement of wide frequency or complex waveform, which is suitable for calibrating wideband voltage sources, voltmeters, voltage dividers, transformers and other equipment.

- Nominal Voltage Input: 10 V ...1 kV
- Nominal Voltage Output: 1 V (customizable)
- Frequency: DC ~ 100 kHz
- Optimal Proportion Uncertainty of DC: 20 ppm
- Optimal AC/DC Difference: 5 ppm@53 Hz
- Optimal Phase Displacement: 2 μrad@53 Hz

TH0170

Precision DC High Voltage Divider

TH0170 can convert DC high voltage to 10 V voltage output, which is matched with high precision digital voltmeter and suitable for the power industry and metering laboratory to establish DC high voltage source/meter calibration and testing standards .

- Nominal Voltage Input: 1 kV ... 50 kV
- Nominal Voltage Output: 10 V
- Uncertainty: 30 PPM.

TH0180

Precision AC/DC High Voltage Divider

TH0180 is a set of five precision AC/DC high-voltage dividers of different ranges that convert high AC and DC voltages to 5 V output, maintaining accurate proportions and minimal phase shifts. It can establish AC/DC high voltage/current power/energy measurement system.

- Nominal Voltage Input: 1 kV ... 35 kV
- Nominal Voltage Output: 5 V
- Frequency: DC ~ 10 kHz
- Uncertainty: 30ppm

TH0190

Handheld Precision Voltmeter

TH0190 is a handheld precision AC current pressure gauge that can accurately measure the range of 20 mV ~ 10 V small-signal voltages, and the AC voltage measurement capability is better than 8 digit semi-high-precision standard digital multimeter.

- Frequency: DC, 40 Hz ~ 10 kHz.
- DC Measurement Uncertainty: 30 ppm.
- AC Measurement Uncertainty: ppm@53 Hz.
- 2~64th Harmonic Measurement
- DC Ripple Measurement Function

TH0195

AC/DC Voltage Measuring Standard

TH0195 can measure AC voltage of 7 ½ digit multimeter. It accurately measures small voltage signals from sensors/transformers (current output type can be converted to voltage by resistance), coaxial shunts, and other equipment , to measure AC and DC high current or high voltage.

- Voltage Measurement: 10 mV ~ 7 V@AC, 10 mV ~ 10 V@DC
- Frequency: DC, 1 mHz ~ 10 kHz.
- Accuracy: ± (0.003% * reading + 0.001% * range) @ 3V.
- 2nd ~ 128th Harmonic Measurement
- DC Ripple Measurement Function

TH0400

Precision Coaxial Current Shunt

TH0400 is a series of 14 precision coaxial shunt devices of different range. It can measure wideband current ,which is suitable for calibrating wideband current/power source, transformers, sensors, etc.

- Frequency: DC ~ 100 kHz
- AC/DC Difference: ≤ 30 ppm@53 Hz
- Optimum phase displacement: 5 μrad
- Nominal Current Input: 1 mA ...100 A
- Nominal Voltage Output: 1 V (customizable)
- Annual Variation: typical 5 ppm, max18 ppm

TH0410

High Frequency Coaxial Shunt

TH0410 is a set of nine precision AC/DC shunts of different ranges. It can be used in voltage high-speed sampling system or with high-precision meter, to measure wideband or complex waveform current or calibrate wideband current sources, transformers, sensors, etc.

- Frequency: DC ~ 1 MHz
- AC/DC Difference: ≤ 30 ppm @53Hz
- Optimal Phase Displacement: 5 μrad
- Nominal Current Input: 20 mA ...10 A
- Nominal Voltage Output: 1 V (customizable)
- Annual Variation: typical 5 ppm, max 18 ppm

TH0420

Reference Coaxial Current Shunt

TH0420 is a set of ten precision coaxial shunts with ultra-low power coefficients. Such as TH0420-100A even under 100 W power conditions, its power coefficient is not more than 10 PPM, very suitable for a wide range of AC and DC current rapid measurement.

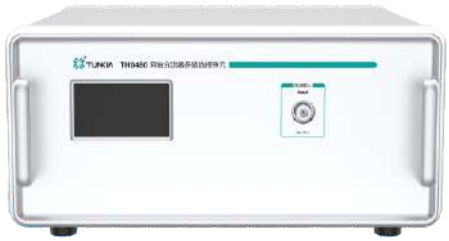
- Frequency: DC ~ 100 kHz
- AC/DC Difference: 5 ppm @53Hz; 10 ppm @1kHz; 25ppm @100 kHz
- Optimal Phase Displacement: 5 μrad
- Nominal Current Input: 0.1A...100A (customizable)
- Nominal Voltage Output: 1 V or 0.5 V
- Annual Variation: typical 5 ppm, max 16 ppm
- Ultra Low Power Factor

TH0460

Coaxial Shunt Multiplexing Unit

A precise and efficient channel selection/switching device for coaxial shunt. Using super sensitive, high efficiency, polarization sealed relay technology, so as to eliminate relay effect of the apparatus itself.

- Frequency: DC ~ 100 kHz
- AC/DC Difference: ≤ 30 ppm @53Hz
- Optimal Phase Displacement: 5 μrad
- Nominal Current Input: 1mA ~ 20 A
- Nominal Voltage Output: 1 V
- Annual Variation: typical 5 ppm, max 16 ppm
- Ultra Low Temperature Coefficient, Power Coefficient



TH0470

Precision Wideband Buffer

TH0470 is a precision buffer that converts high internal resistance signals into low-impedance outputs, with good AC/DC difference and phase displacement performance, suitable for precision measurement of voltage, current, phase, power and other electrical parameters in wideband.

- Typical AC/DC Difference: 3 ppm
- Typical Phase Displacement: 3 ppm
- Maximum Frequency: 100 kHz/1 MHz
- Impedance Input: 10 MΩ // 20 pF
- Voltage Input: 7 V
- Gain Value: 1

TH0475

High Frequency Voltage Isolation Buffer

TH0475 is a precision buffer that is specifically designed to convert high-impedance signals to low-impedance outputs. It has excellent AC-DC coupling and phase displacement performance, and is an essential instrument for the output of voltage-to-voltage (V/V) and current-to-voltage (I/V) precision converters.

- Maximum Frequency: 100kHz ~ 1 MHz
- Impedance Input: 5 MΩ
- Voltage Input: 0.05Vrms ~ 1.2Vrms
- Gain Value: 1

TH0480

Resistance Time Constant Standard

A time constant resistance standard, nominal resistance 1Ω, nominal output voltage 1V. It has good AC/DC difference and phase displacement index, and time constant calibration uncertainty reaches 0.1ns.

- Typical AC/DC Difference: 1 ppm
- Typical Phase Displacement: 1μrad
- Frequency: DC, 50Hz - 100 kHz
- Maximum working current: 2A
- Resistance Time Constant: better than 5ns

TH0490

Bisector Current Ratio Standard

TH0490 is a series of bisector current ratio standards. It can divide the input wideband current into two equal parts before output. The ratio difference and phase displacement of the second current are very small.

- Nominal Current Input: 2A/20 A
- Frequency Range: 45Hz~100 kHz
- Amplitude Error : better than 10ppm
- Phase Angle Error : better than 20μrad

TH0500

Precision Current Transformer

TH0500 is a series of precision current conversion standards that use precision DC current comparator to convert AC/DC currents(0.1 A ~ 20 kA) into small-signal voltage or current. The secondary output can be connected to corresponding measuring instruments to achieve various measurement applications.

- Direct connected type with the input current of 0.1 A…200 A.
- Through-core type with the input current of 500 A…20 kA.
- Secondary output signal is optional for current (I / I) or voltage (I/ V)
- I/I: Optimum uncertainty of 0.2ppm
- I/V: Optimum uncertainty of 10 ppm
- Frequency: DC, 10Hz - 5 kHz

TH0540

Precision Current Transducer

TH0540 is a series of I/I type precision AC/DC current transducer, which have the good linearity, low zero drift, fast response, and low temperature influence coefficient. It can expand the current measurement range of the instrument, realize the precise conversion measurement of AC and DC current.

- Direct connected type with the input current of 1A... 1kA.
- Through-core type with the input current of 200 A... 2 kA.
- DC Uncertainty: 5 ppm
- AC Uncertainty: 200 ppm@53 Hz
- Frequency: DC~ 5 kHz

TH0600

Precision AC Current Transformer

TH0600 precision AC current transformer is based on wideband current transformer technology. It can convert nominal current from 0.1 A to 10 kA AC current into a voltage or current output in a certain proportion and maintains a high proportion uncertainty.

- Direct connected type with the input current of 0.1 A... 200 A
- Through-core type with the input current of 500 A... 10 kA.
- The secondary output signal is optional for voltage (I/V) or current (I/I).
- Type I/I: Optimal ratio uncertainty of 5 ppm
- Type I/V: Optimal ratio uncertainty up to 10 ppm
- Frequency: 40 Hz~2.5 kHz.

TH0680

Multiplexing I/V Selection Units

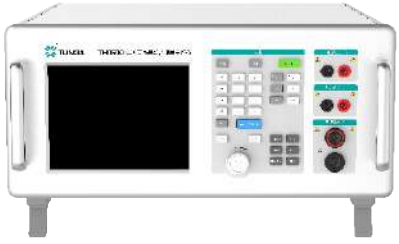
TH0680 is a high-precision line frequency current converter, equipped with multiple gear precision transformers and precision resistors, which can convert line frequency current into a 1V voltage signal output, and achieve precision measurement of line frequency current or traceable calibration of current source.

- Frequency: 45 Hz ~ 65 Hz
- Nominal Current Input: 0.5 A ~ 100 A
- Nominal Voltage Output : 1 V
- Uncertainty : 5 ppm.

TH0690

Current Transducer Integrated Measurement Analyzer

TH0690 is an intelligent instrument designed for the comprehensive performance evaluation of current transformers. It can accurately detect the electrical characteristics such as the ratio error (k) and phase displacement (δ) of I/I and I/V type current transformers. It can also measures the AC magnetic characteristics of the transformer core.



- Frequency: 45 Hz ~ 65 Hz
- Accuracy: 50 ppm
- Drawing current or frequency characteristic curve through software
- Multi-frequency point measurement of ratio error and phase displacement
- Multiple parameters of the magnetic properties measurement and curve drawing.

TH0780

Multiplexing V/V Selection Units

TH0780 is a high-precision power frequency voltage converter with a built-in multi-range precision voltage transformer. It can convert high power frequency voltage to 1V output voltage signals, enabling precise measurement of power frequency voltages or source voltage traceability calibration.

- Frequency: 45 Hz ~ 65 Hz
- Nominal Voltage Input: 60V ~ 480V
- Nominal Voltage Output: 1 V
- Uncertainty: 5 ppm.

TH1000

Ultra-stable Precision Current Source

TH1000 is a precision DC current standard source, which is a constant current source with ultra-low noise, high precision, high linearity, and better adjustment fineness.

- Optimal Uncertainty: ± 15 μA/A
- DCI Output: ±(0~110 mA)
- Maximum Load Voltage: 10 V
- Rise time < 10 ms, built time < 20 ms.
- Constant Current Output Ripple Factor: <0.001%

TH1200

Nanovoltmeters Calibrator

TH1200 is an instrument that uses the standard source method to calibrate the nanovoltmeter. It is equipped with a highly stable voltage reference standard and has extremely low temperature drift. This product is characterized by low noise, high accuracy, high resolution, and low temperature drift.

- Standard voltage output: 1μV~110V
- Uncertainty: 6 ppm@10 V
- Typical Stability at mV Output: 10 nV/min
- 8-digital, Minimum Resolution: 1 nV
- Constant Temperature Control Technology

TH2000

Vector Voltage Analyzer

TH2000 is a high-precision vector voltage analyzer, measuring the ratio error and phase displacement between two channel voltage. It also testing various electrical parameters, such as voltage, current, frequency, phase, harmonic, power, etc. TH2000 is suitable for wideband electrical measurement scenarios.

- Dual channel voltage measurement: 0.5 mV ~ 6 V
- Frequency: DC, AC 10 Hz ~ 20 kHz
- Uncertainty of voltage and power: 50ppm and 100ppm
- Uncertainty of phase displacement: 0.0005°
- 2^{nd}~256^{th} Harmonics Measurement
- Display harmonic content, total harmonic distortion and spectrum diagram.

Resistance Standards

TH0200

Standard Resistance Measuring Device

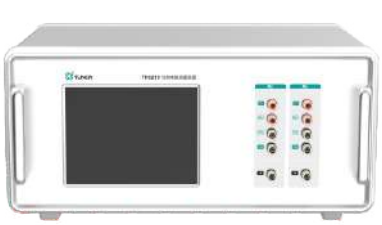
TH0200 is a resistance measuring device with high precision and wide range, it's applied for the measurement, comparison, transmission, verification of standard resistance by using DC comparator Bridge.

- Current Output: 10 μA ~ 10 A.
- Resistance Measurement: 1 mΩ ~ 100 kΩ (customizable).
- Uncertainty: 10 ppm.
- Built in standard resistance for reference.
- Measurement mode: Precision / Quick.

TH0210

Standard Resistance Measuring Device

TH0210 is a DC comparator bridge designed for the automatic measurement and display of the ratio of two resistances to high accuracy. It's applied for the measurement, comparison, transmission, verification of standard resistance.



- Current Output: 100 μA ~ 3.2 A
- Resistance Measurement: 1 mΩ ~ 100 kΩ (customizable)
- Uncertainty: 0.5 ppm ~ 3 ppm (External Primary Standard Resistor)
- Test Period: about 4.5 minutes

TH0240

Standard Resistance Multiplexer

TH0240 is a precise resistance channel-switch device, integrates ultra sensitive, high efficiency, polarized sealed relay, which can eliminate the self-heating effect in the relay. It has ultra-low thermal potential and contact resistance.

- 10 channels 4-wire terminals.
- Sealed Relays with 3 A Carrying Capacity.
- Copper Tellurium Terminal.
- Insulation Resistance> 10^{12} Ω.

TH0260

Precision Resistance Analyzer

TH0260 is a measuring instrument used to analyze the characteristics of DC precision resistance. It's applied for resistance manufacturers to perform detailed performance analysis.

TH0260-H

TH0260-L

- TH0260-L (low value)/TH0260-B (high value):
- Maximum Current Output: 100 A/100 mA
- Maximum Voltage Test: 20 V/1000 V
- Measuring Range: 100 μΩ ~ 10 kΩ /100 Ω ~ 1 GΩ (customizable)
- Uncertainty: 3 ppm
- Test Items: short-term overload, long-term life, power factor, thermoelectric potential.

TH0300

High Power Resistance Standard

TH0300 is a series of reference high power resistance standards, it's applied for precise AC and DC current measurement at high power conditions.

- Nominal Resistance: 0.1 Ω ~ 10 Ω
- Maximum Operating Current: 11 A
- Long-term Stability: 5 ppm/year
- Temperature Coefficient: 1 ppm /℃
- Low Thermoelectric Potential Terminal

TH0310

Resistance Standard

TH0310 is a series of precision standard resistors, suitable for measuring a wide range of precision current, it can also be applied for calibrating multi-function calibrators, high precision digital multi-meter, etc.

- Nominal Resistance: 1 mΩ~100 MΩ (customizable)
- Long-term Stability: 5 ppm/year (typical)
- Temperature Coefficient: 1 ppm/℃
- Low Thermoelectric Potential Terminal

TH0320

Reference Resistance Standard

TH0320 is a series of precision standard resistors, suitable for measuring a wide range of precision current, it can also be applied for calibrating multi-function calibrators, high precision digital multi-meter, etc.

- Nominal Resistance: 1 Ω~10 MΩ (customizable)
- Long-term Stability: 3 ppm/year (typical)
- Temperature Coefficient: 0.2 ppm/°C
- Low Thermoelectric Potential Terminal

TH0340

AC Resistance Standard

TH0340 is a series of reference temperature-controlled AC resistance standards. It's suitable for calibrating AC impedance meters (LCR).

- Nominal Resistance: 1 Ω~10 kΩ
- Long-term Stability: 5 ppm/year
- Temperature Coefficient: 0.2 ppm/°C
- Battery Supply

TH0350

DC Bridges Calibrator

TH0350 is a precision DC Bridges Calibrator with wide range of analog resistance. It can calibrate Resistance instruments of class 0.02 and below, including single and double arm bridges, digital bridges, digital micro-ohmmeter and DC resistance meters.

- DCI Measurement: 1 mA~11A
- Resistance Analog Range: 100 μΩ~11 MΩ
- Uncertainty: 50 ppm
- Adjustment Fineness: 5nΩ
- 2-wire and 4-wire Resistance Modes

TH0360

High-precision DC Resistance Meter Calibrator

TH0360 can simulate wide range of DC standard resistances, and calibrate single-arm bridges, double-arm bridges, high-precision DC resistance meters, and digital micro-ohmmeters.

- DCI Measurement: 20 mA~ 22 A
- Optimal Measurement Uncertainty for Current: 40 ppm
- Resistance Analog Range: 0 Ω ~ 1.1 GΩ
- Optimal Measurement Uncertainty for Resistance: 20 ppm
- 2-wire and 4-wire Resistance Modes

TD1400

Loop Resistance Tester

TD1400 is a portable instrument dedicated to measuring the loop resistance and contact resistance of switches, circuit breakers, copper-aluminum busbars and other equipment, with an accuracy of Class 0.2/ Class 0.5 available.

- Resistance Measurement: 0.01 mΩ ~ 180 mΩ;
- DCI Output: 2A~100A /200 A
- ACV Input: 198 V ~ 253 V
- Built-in micro printer for on-site printing of test results.

TD1450

Analog Standard Resistor

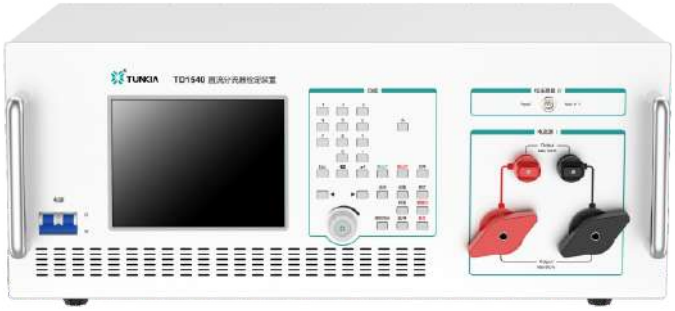
TD1450 is an instrument that accurately simulates DC or AC standard resistance, and is suitable for calibrating loop resistance testers, DC resistance testers, ground on-resistance testers, and other DC or AC low impedance instrument.

- Accuracy: Class 0.02/ Class 0.05
- Maximum current measurement: 60 A /120A/240A/ 600A
- DC Resistance Analog: 1 μΩ ~ 200 Ω
- AC Resistance Analog: 30 μΩ ~ 150 Ω
- Current Ripple or Harmonic Measurement Function

TD1540

DC Shunt Verification Device

TD1540 is a set of instrument specially used for calibrating DC shunt, which is composed of DC standard large current source and precision DC voltmeter. It has wide measuring range, high precision, high stability and good safety performance.



- Accuracy: Class 0.02 / Class 0.05
- DCI Output: 1 mA ~ 600 A
- DCV Measurement: 10 μV~11 V
- Resistance Measurement: 200 nΩ~6 Ω
- Measuring resistance, basic error, and drawing R (t), R (I) curve.
- Professional Test Software

TD2100

DC Shunt Verification Device

TD2100 is a device specially used to quickly verify DC shunt. It adopts modular design and is composed of multi meter position verification platform, DC high current standard source, precision DC voltmeter, multi-function measurement and control unit, verification software, etc.

- Accuracy: Class 0.02 / Class 0.05
- DCI Output: 0.5 A ~ 600 A
- DCV Measurement: 100 μV~ 11 V
- Resistance Measurement: 200 nΩ~6 Ω
- 3/6 Meter Positions Test Bench
- Shunts Manual/Automatic Crimping Device
- Measuring resistance, basic error, and drawing R (t), R (I) curve.
- Temperature Measurement, recording the highest temperature point and thermal balance time of the shunt.

AC / DC
Current Source & Meters

TH0520

Precision Current & Voltage Measurement Standard

TH0520 is a Current and Voltage Measuring instrument that directly measures currents up to 2 A or voltage to 10.5 V, mated to precision I/V, V/V conversion standards, current sensor can be set AC DC high current or high voltage measurement system.

- DCI Measurement: 10 μA~2 A (Uncertainty: 50 ppm)
- DCV Measurement: 10 mV~10.5 V (Uncertainty: 30 ppm)
- Frequency: DC, 40 Hz~5 kHz
- Equipped with a dedicated current sensor measurement interface.
- Set the sensor ratio to directly display the primary charge.
- Support DC Ripple, 2nd~64th Harmonic Measurement

TH0530

Precision Through-core Ammeter

TH0530 is a wide measurement range, high measurement accuracy, small and portable ammeter, using wideband current comparator technology, suitable for measuring wideband high current in the field, or for calibrating AC and DC high current sources and ammeters.

- Max Current Measurement: 1 kA/2 kA
- Frequency: DC ~ 1 kHz
- Accuracy: Class 0.005 / Class 0.01
- Through-core and Direct Measurement
- The aperture of Φ 70 mm
- Analog I/V output mode is supported

TH0630

Precision Through-core AC Ammeter

TH0630 is a wide measurement range, high measurement accuracy, small and portable AC ammeter, using wideband current transformer technology, suitable for measuring AC high current in the field, or for calibrating AC current sources and ammeters.

- Max Current Measurement: 1 kA/2 kA
- Frequency: 40 H z ~ 400 Hz
- Accuracy: Class 0.005/Class 0.01
- AC Harmonics and Distortion Measurement
- Display of Current Waveform And Spectrogram

TH1300

DC High Current Sensor & Shunt Calibration System

TH1300 can be fully automatic programmable output high precision, high stability, wide range of DC current, which can calibrate DC shunts and high-precision current sensors. It provides a reliable technical guarantee for the establishment of high-precision current and resistance transmission system for high-level metrology laboratories.

- Bipolar High Current Source: 0.1 mA~10 kA
- High Stability and Accuracy: the short-term stability can reach 2.5ppm/min, 8ppm/h
- Absolute accuracy of ±50 μ A/A.
- Calibrating DC shunts with resistance value of 0.1 μΩ~100 kΩ
- Automatic calibration, saving of the original data and export/printing of calibration certificate.

TA1000

Transconductance Current Standard Source

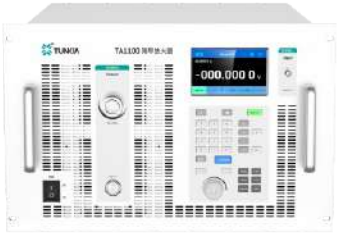
TA1000 is a high-precision and high-stability wideband current source. It can output wideband current with the built-in signal generator directly. It can also be used as a wideband transconductance amplifier to accept AC/DC Voltage/current signals from any calibrator, signal generator or power supply.

- Accuracy: Class 0 .01
- Frequency: DC ~ 10 kHz
- Maximum Current Output: 120 A
- Short-term Stability: 0.001%

TA1100

Transconductance Amplifier

TA1100 is a high-precision, high stability wideband current standard source, with built-in signal generator, which can directly output wideband current. It can also be used as a wideband transconductance amplifier to receive AC and DC voltage signal input from any calibrator, signal generator or power supply, and transconductance output wideband current.



- Accuracy: Class 0.05
- Frequency: DC ~ 100 kHz
- Maximum Current Output: 100 A
- Short-term Stability: 0.004%
- Maximum Compliance Voltage: 7 Vrms @ AC, 7 V @ DC

TA1200

High Frequency Transconductance Amplifier

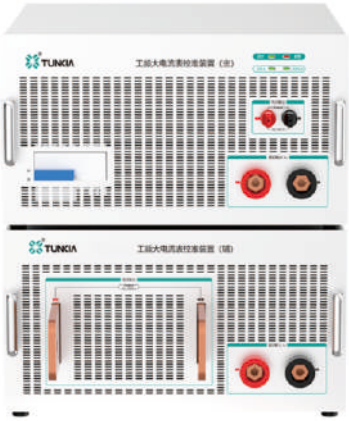
TA1200 is a high-precision, high-stability wideband constant current source with a frequency of up to 1 MHz and a linear output of current in a transconductance mode of operation, suitable for calibrating the frequency response bandwidth characteristics of high frequency current transducers or testing current transducers.

- Current output range: 1 mA to 10.5 A
- Frequency: DC & 10 Hz to 1 MHz
- Short-term Stability: 0.004%/min @ DC, 0.05%/min @ 100 kHz, 0.1%/min @ 1 MHz
- Operation mode: constant current (CC) and transconductance (TA)
- Voltage Input at TA mode: 0.2 V to 2 V
- Maximum Load Voltage: 7 Vrms

TA1300

AC Current Standard Source

TA1300 is a series of AC current standard source devices, which can output high stability and high accuracy AC high current, suitable for calibrating AC ammeters, current transformers, current sensors and other equipment.



- Supports combined outputs from multiple module sources up to 6 kA.
- Maximum Fundamental Frequency: 65 Hz / 400 Hz / 1kHz optional.
- Accuracy: Class 0.02 / Class 0.05
- Harmonic Output Function

TA1500

AC/DC Current Standard Source

TA1500 is a series of AC current standard source devices, which can output high stability and high accuracy AC current large current, suitable for calibrating AC current ammeters, current transformers, Current sensors and other devices.

- Supports combined outputs from multiple module sources up to 6 kA.
- Frequency: DC, 10 Hz ~ 65 Hz/400Hz/1kHz
- Accuracy: Class 0.02/ Class 0.05
- Bipolar DC current
- Harmonic Output Function

TD1090

Through-core AC I/V Converter

TD1090 through-core AC I/V converter uses the through-core measurement method to convert AC high current into small voltage, realizing accurate measurement of AC high current, which can be applied to calibrating AC high current sources, current transformers and other devices.

- Nominal current input: 1 kA or 2 kA
- Nominal voltage output: 1 V
- Frequency: 40 Hz ~ 400 Hz
- Accuracy: Class 0.005/Class 0.01
- The primary input is electrically isolated from the secondary output.

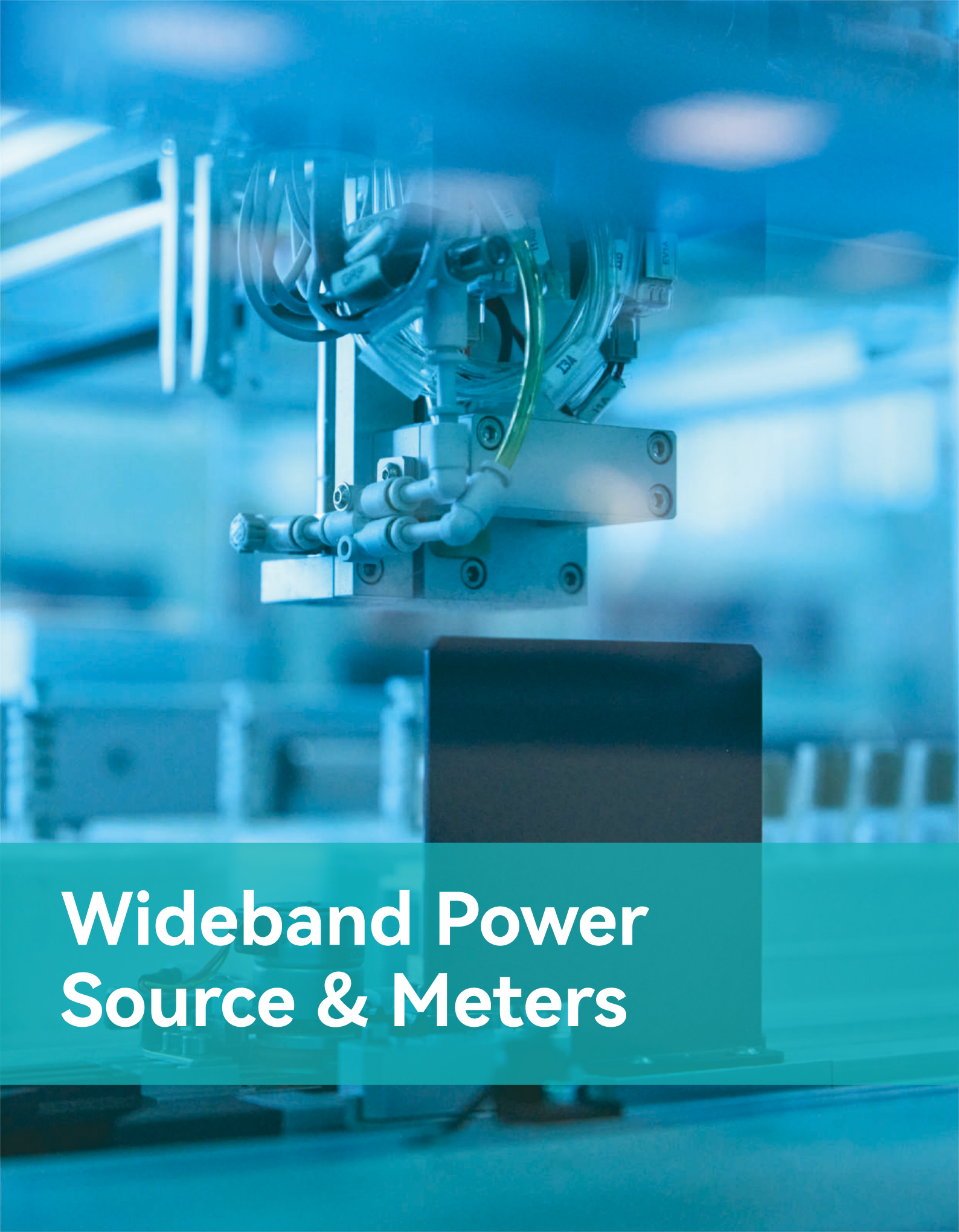
TD2010

DC High Current Standard Source

TD2010 is a set of DC high current standard source equipment, using modular design, multiple current output units in parallel, which has high accuracy, good stability, high reliability. It can calibrate and measure DC current sensor/shunt.

*Reference only

- Support multiple module source superposition output, current output up to 15 kA.
- Accuracy: Class 0.01/ Class 0.02/ Class 0.05
- Typical Peak Stability: 15 ppm/h , Variance Stability: 6 ppm/h
- DCV Measurement: ±(10mV~12V)
- DCI Measurement: ±(1 mA~1.1 A)



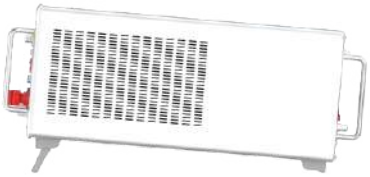
Wideband Power Source & Meters

TA2000

AC Power Calibrator

TA2000 is a high-precision AC power source with wide range, which is applied for calibrating AC power meters. The optional electrical energy function can be used for testing single-phase AC energy meter.

- Accuracy: Class 0.02/Class 0.05
- ACV output: 0.3 V ~ 1100 V
- ACI output: 0.3 mA ~ 110 A
- AUX output: 0.5 mV ~ 5.5 V
- Frequency: 40 Hz ~ 70 Hz/1500 Hz



TA2100

Wideband Power Calibrator

TA2100 is a wide range, high-precision, high-stability wideband power calibrator, the instrument can output DC voltage, current and power, and has a dual voltage output mode, suitable for calibration power analyzer, AC / DC power meter, voltmeter, ammeter and other electrical measuring instruments.

- Power Accuracy: Class 0.05
- ACV / DC V Output : 0.3 V ~ 1020 V
- ACI / DCI Current Output: 0.5 mA ~ 20.5 A
- AUX output: 2.5 mV ~ 5.5 V
- Frequency: 5 Hz ~ 100 kHz

TA3000

AC Power Measurement Standard

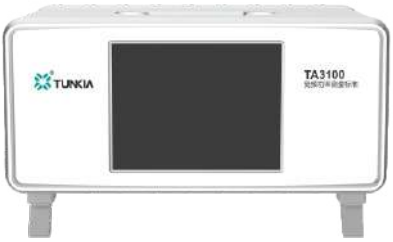
TA3000 is a high-precision wideband AC parametric measurement standard that simultaneously measures multiple amounts of electricity in an AC loop such as: voltage, current, frequency, phase, harmonics, active power/energy, reactive power/energy, apparent power, power factor, etc.

- Uncertainty: Class 0.01
- Voltage Measurement: 1 V~600 V
- Current Measurement: 10mA~120 A
- Frequency: 45 Hz~1 kHz.
- Phase Uncertainty: 0.003°
- 2^{nd}~127^{th} Harmonic Measurement
- Standard Energy Pulse Input/Output

TA3100

Wideband Power Measurement Standard

TA3100 is a high-precision wideband AC parametric measurement standard, which can simultaneously measure multiple amounts of electricity in the AC loop such as: voltage, current, frequency, phase, harmonics, active power/electrical energy, reactive power/energy, apparent power, power factor, etc. It can be used with TA2100 Wideband Power Calibrator to calibrate medium and high precision power analyzers



- Uncertainty: Class 0.015
- Frequency: DC, AC 10 Hz~100 kHz.
- Voltage Measurement: 0.3 V~1020 V.
- Small Voltage Measurement: 2.5 mV~6 V.
- Voltage Measurement: 1 mA~20.5 A

TA4300

Power Quality Calibrator

TA4300 is a 3PH power quality calibrator. It integrates voltage/current output function, harmonic function, AC power output function, AC energy test function. It can test voltage fluctuate, flicker, harmonic, inter-harmonic, voltage swell, voltage dip and 3PH imbalance for power quality analyzer.

- 3PH Voltage Output: 1 V ~ 528 V
- 3PH Current Output: 0.2 mA ~ 22 A
- Frequency: 45 Hz ~ 65 Hz/400 Hz
- U-I phase: 0° ~ 360°
- Accuracy: Class 0.02
- Harmonic: 2^{nd} ~ 99^{th} output
- Inter-harmonic: 0.1 ~ 99.9 times output
- Energy Pulse Input/Output

DC Power & Energy Standards

TH3000

AC/ DC Power & Energy Measurement Standard

TH3000 is a high-precision, wide-range, multi-functional AC and DC power standard, the instrument integrates AC and DC standard voltage/current/small-signal voltmeter, AC/DC energy measurement, ripple measurement, harmonic measurement and other functions.

- Accuracy: Class 0.005
- DCV measurement: 10 mV ~ 1150 V
- DCI measurement: 10 μ A ~ 120 A
- Support the transducer to expand the current range to 500 A or more
- Small-signal DCV measurement: 0.1 m V ~ 12 V
- DC Ripple, AC 2nd ~ 63rd Harmonic Measurement

TH3900

DC Power & Energy Reference Standard

TH3900 is a DC energy reference device with an optimal measurement uncertainty of 10 ppm for power/energy. It has the characteristics of high stability, high accuracy, strong functionality and low temperature drift.

- DCI Max Measurement: 600A, Uncertainty: 6 ppm
- DCV Max Measurement: 1.15kV, Uncertainty: 8 ppm
- Voltage Stability: 6 ppm/min, Current Stability: 8 ppm/min
- Small-signal Voltage with a Minimum Output of 0.1 mV and an Uncertainty of 15 ppm
- BI/V and V/V Conversion Standards Uncertainty: 3 ppm
- Solid State Voltage Reference Annual Variation: ±1.5 μV/V.
- Quantum Voltage Calibration Function
- High Precision Constant Temperature Crystal Oscillator, Standard Second Pulse Uncertainty up to 0.5 ppm

TD1300

Precision DC Standard Meter

TD1300 is a DC standard meter, which integrates DC standard voltmeter, DC standard ammeter, small-signal voltmeter, DC energy measurement, ripple measurement and other functions. It is applicable to calibration of DC source and assessment of DC energy metering device.

- Accuracy: Class 0.01/Class 0.02
- DCV measurement: 10 mV ~ 1150 V
- DCI measurement: 10 μA ~ 120 A
- Support the transducer to expand the current range to 500 A or more
- Small-signal DCV measurement: 0.1 mV ~ 12 V
- Max DC Ripple Measurement Bandwidth: 10 kHz
- Standard Energy Pulse Input / Output

TD1310

Precision AC/DC Standard Meter

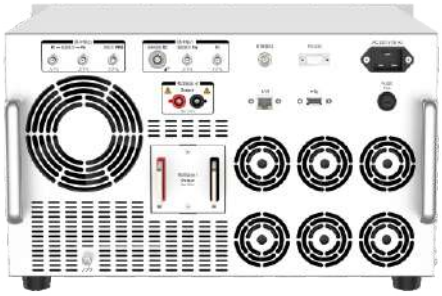
TD1310 is an AC/DC standard meter, which integrates AC/DC standard voltmeter, AC/DC standard ammeter, small-signal voltmeter, AC/DC energy measurement, ripple measurement, harmonic measurement and other functions. It is applicable to calibration of AC/DC source and assessment of AC/DC energy metering device.

- Power/Energy Accuracy: DC Class 0.01, AC Class 0.02
- Voltage/Current Accuracy: DC Class 0.005, AC Class 0.01
- DCV Measurement: 10 mV ~ 1150 V, 0.1 mV ~ 12 V (Small-signal)
- DCI Measurement: 10 μA ~ 120 A/500A (transducer)
- DC Ripple and AC 2^{nd}~63^{rd} Harmonic Measurement
- Comprehensive Statistics and Analysis of the Measured Electricity
- Standard Electric Energy Pulse Input/Output

TD1545

DC Energy Meters Verification Device

TD1545 is a multi-functional instrument dedicated to the verification and calibration of DC meter. It consists of DC voltage standard source, DC current standard source, DC small-signal voltage source, DC standard virtual power source etc. It can verify DC voltmeter /ammeter /power meter, DC shunt, and DC energy meters.



- Accuracy: Class 0.01/Class 0.02
- DCV Output: 10 mV ~ 1150 V / 1550 V, 10 μV ~ 4.4 V(small-signal)
- DCI Output: 1 mA ~ 600 A
- Standard Electric Energy Pulse Input/Output
- Portable and easy to integrate into the cabinet to form a test system
- Secondary signal measurement of transmitter

TD1548

DC Energy Meter Comprehensive Verification Device

TD1548 is a comprehensive verification device for DC energy measurement. It consists of a precision DC voltage source, a DC current source, a DC small signal voltage source, a clock calibrator, a multi-function calibration bench, and fully automatic calibration software.

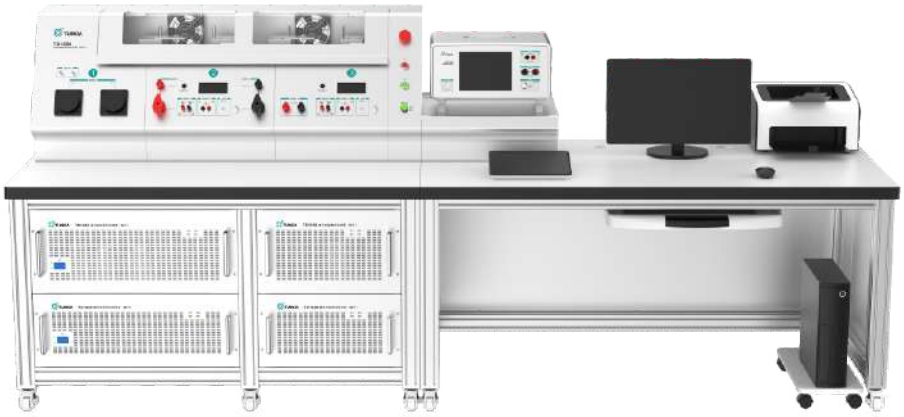
It can not only verify conventional DC electrical measuring instruments, such as DC voltmeter/ammeter/power meter, but also verify DC shunts, direct access DC energy meters and indirect connected DC energy meters, as well as electric vehicle DC charger testers.

- The voltage/circuit measurement uncertainty is class 0.005.
- The power/electric energy measurement uncertainty is class 0.01.
- DC standard voltage source: 10 mV ~ 1150 V / 1550 V (optional)
- DC standard current source: 1 mA ~ 600 A
- DC four-wire small signal voltage source: 10 μV ~ 4.4 V
- Supports the verification of three-position DC energy meters and DC shunts.
- Supports single-position electric vehicle DC charger tester calibration.
- Standard electric energy pulse input/output, used to test working errors of electric energy meters.
- Auxiliary power supply, used to provide power supply for Class A electric energy meters.
- Standard second pulse measurement, used to test daily timing errors of electric energy meters.
- Mobile measurement and control console.
- Automatic testing software.

TD1550

DC Energy Meters Verification Device

TD1550 is a platform device that can be used for the verification of DC energy meter and DC shunt. It consists of DC voltage/current standard source,DC voltmeter, multi position verification platform, verification software, etc. It can verify DC electrical measuring instruments, DC shunt, and DC energy meters.



- Accuracy: Class 0.02/ Class 0.05
- DCV Output: 10 mV ~ 1150 V / 1550 V, 10 μV ~ 4.4 V (small-signal)
- DCI Output: 1 mA ~ 600 A
- Optional 3 or 6 Meters Position
- Standard Energy Pulse Input/Output
- Auxiliary Power Supply for DC Energy Measuring
- Test the Daily Timing Error of the Energy Meter
- DC Shunt Manual/Automatic Crimping Device

TD1570

Indirect Connected DC Energy Meters Verification Device

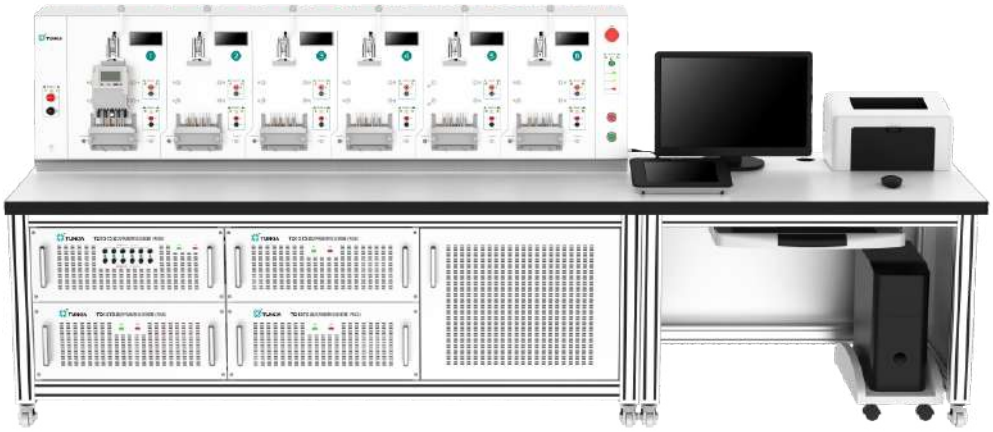
TD1570 is a device dedicated to the verification of indirect connected DC energy meters, which is composed of DC standard voltage source, DC small-signal voltage standard source, multi meter location verification platform, verification software, etc. It supports the automatic verification of indirect connected DC energy meters.

- Accuracy: Class 0.05
- DCV Output: 10 mV ~ 1150 V / 1550 V, 10 μV ~ 4.4 V (small-signal)
- Optional 6/12/16 Meters Position
- Standard Energy Pulse Input/Output
- Auxiliary Power Supply for DC Energy Measuring
- Test the Daily Timing Error of the Energy Meter

TD1575

DC Energy Meters Verification Device

TD1575 is a platform device dedicated to the verification of DC energy meters, which consists of DC voltage standard source, DC current standard source, DC small signal voltage standard source (corresponding to the voltage of the shunt), multi meter position verification platform, verification software, etc. Support verification of direct connected and indirect connected DC energy meters at the same time.

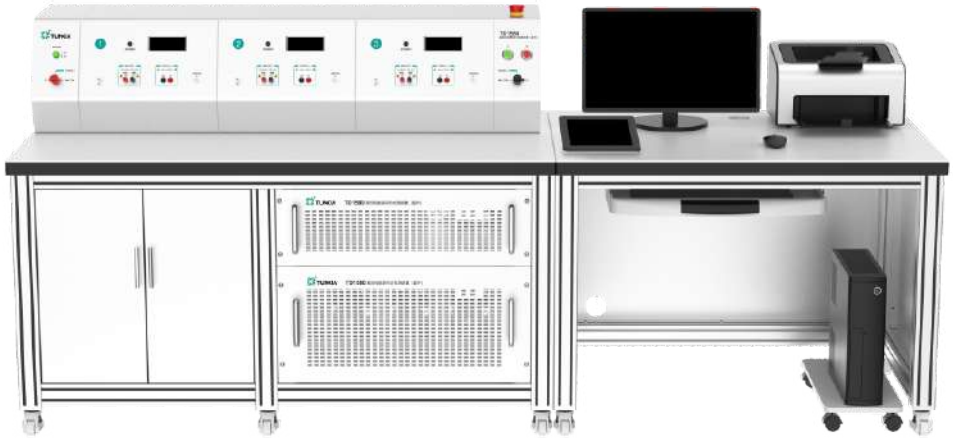


- Accuracy: Class 0.02 / Class 0.05
- DCV Output: 10 mV ~ 1150 V / 1550 V, 10 μV ~ 4.4 V (small-signal)
- DCI Output: 20 μA ~ 120 A
- Optional 6/12/16 meters position indirect connected DC energy meters verification platform.
- Standard Energy Pulse Input/Output
- Auxiliary Power Supply
- Standard Second Pulse Measurement

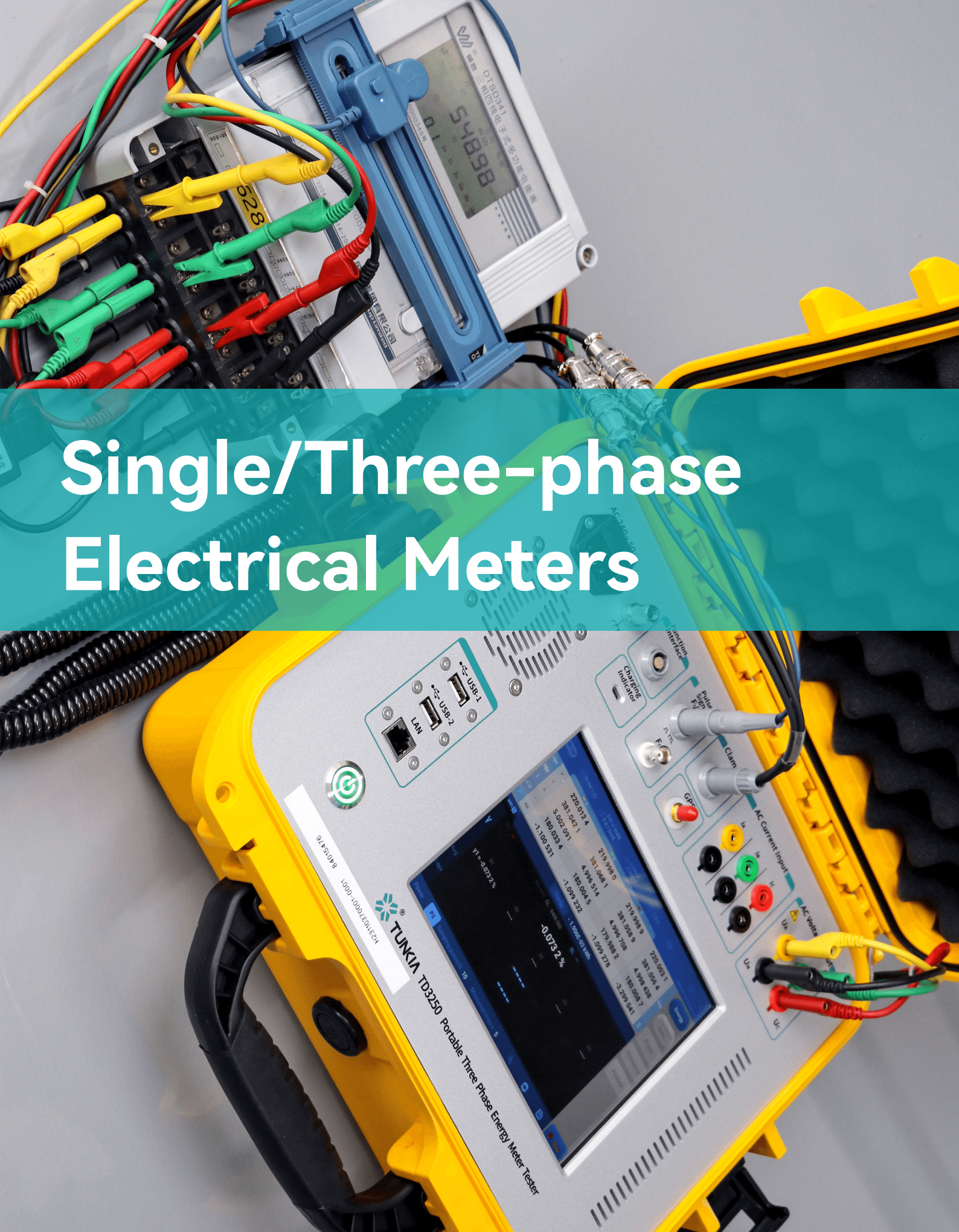
TD1580

DC Energy Meters Testing Device

TD1580 is a comprehensive equipment dedicated to the verification and type evaluation of static DC energy meter. which composed of multi-function DC standard source, DC .It is applicable to the verification of direct connected or indirect connected DC energy meters or the completion of most tests of type evaluation.



- Accuracy: Class 0.02, Class 0.05
- DCV Output: 10 mV ~ 1150V/1500 V, 10 μV ~ 4.4 V (small-signal)
- IDCI Output: 5 μA ~ 120 A/600 A
- DC /AC Output Mode for Ripple Effect Test
- Positive and Negative Voltage Output for Reverse Polarity Connection Test
- Auxiliary Power Supply for DC Energy Measuring
- Loop Current Measurement to Test the Power Consumption
- Test the Daily Reckoning Error


Single/Three-phase
Electrical Meters
TUNKIA TD3250 Portable Three Phase Energy Meter Tester

TD3100

Single-phase Multi-function Standard Meter

TD3100 is a high-precision single-phase standard instrument that can simultaneously measure multiple electrical charges in the loop such as: voltage, current, frequency, phase, harmonics, active power/energy, reactive power/energy, apparent power, power factor, etc.

- Accuracy: Class 0.02/ Class 0.05
- Voltage Measurement: 6 V~528 V (customizable)
- Current Measurement: 1 mA~120 A
- Frequency: 45 Hz~65 Hz /400Hz
- 2nd~63rd harmonic measurement.
- Support Comprehensive Statistical Analysis of the Measured Electricity
- Standard Energy Pulse Input/Output

TD3250

Portable Three-phase Energy Meter Tester

TD3250 is a portable standard meter specially used for energy meter on-site test, AC sampling etc. It integrates the functions of electrical parameter measurement, energy meter calibration, connection mode identification, harmonic analysis, waveform display, phasor diagram display, data management.

- Accuracy: Class 0.02 / Class 0.05.
- 3PH Voltage Measurement: 0 ~ 480 V.
- 3PH Current Measurement (Direct): 50 mA ~ 12 A.
- 3PH Current Measurement (Clamp): 100 mA ~ 120 A.
- Support Energy Pulse Optical/Electrical Pulse Input.
- ACV Input: 100 V~264 V

TD3300

Three-phase Multifunction Standard Meter

TD3300 is a high-precision three phase standard instrument, which can simultaneously measure multiple electrical quantities in the circuit such as: voltage, current, frequency, phase, harmonics, active power/ Electric energy, reactive power/electric energy, apparent power, power factor, etc.

- Power/energy Accuracy: Class 0.02, Class 0.05
- Voltage measurement: 6 V ~ 528 V (customizable).
- Current measurement: 0.2 mA ~ 120 A.
- Fundamental frequency: 45 Hz ~ 65 Hz (400Hz optional).
- Phase measurement uncertainty reaches 0.006° (class 0.02).
- Voltage and current support 2~63rd harmonic measurement.
- Comprehensive statistical analysis of the measured electricity.
- Phasor diagram, spectrum diagram, trend diagram and other graphic displays.

TD3310

Three-phase Multifunction Standard Meter

TD3310 is a high-precision three-phase standard instrument, which can simultaneously measure multiple electrical parameters in the loop such as: voltage, current, frequency, phase, harmonics, active power/energy, reactive power/energy, apparent power, power factor, etc. in the three-phase Y-shaped/V-shaped wiring mode.

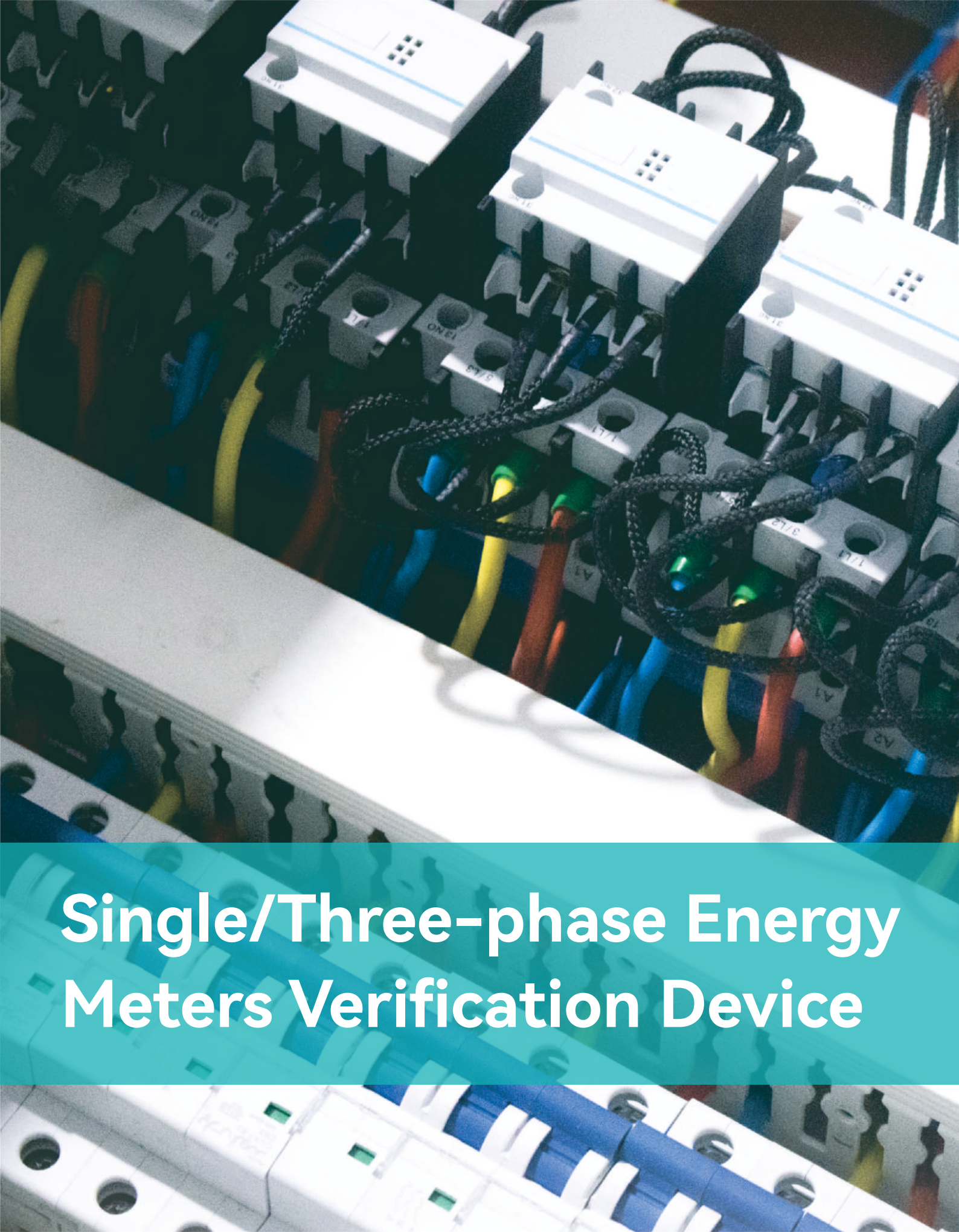
- Accuracy: Class 0.01
- 3PH Voltage Measurement: 6 V~528V (customizable)
- 3PH Current Measurement: 0.2 mA~120 A
- Frequency: 45 Hz~65 Hz / 400Hz
- 2nd to 127th Harmonic Measurement.
- Comprehensive Statistical Analysis of the Measured Electricity
- Standard Energy Pulse Input/Output Function.

TD3810

Three-phase Energy Device Field Testing System

TD3810 is a comprehensive testing system dedicated to the on-site assessment of the AC energy meter verification device. It can assess the three-phase energy standard device, and be used as a high-precision energy standard meter.

- Accuracy: Class 0.01/ Class 0.02
- 3PH Voltage Measurement: 6 V~528 V(customizable)
- 3PH Current Measurement: 0.2 mA~120 A
- Frequency: 45 Hz~65 Hz / 400Hz
- 2^{nd} to 127^{th} Harmonic Measurements.
- Support the Graphical Display of Phasor Diagram, Spectrum Diagram and Trend Diagram.
- Temperature and Humidity, Magnetic Field, Daily Timing Error Measurement.



Single/Three-phase Energy Meters Verification Device

TD3500

Single-phase Energy Meters Verification Device

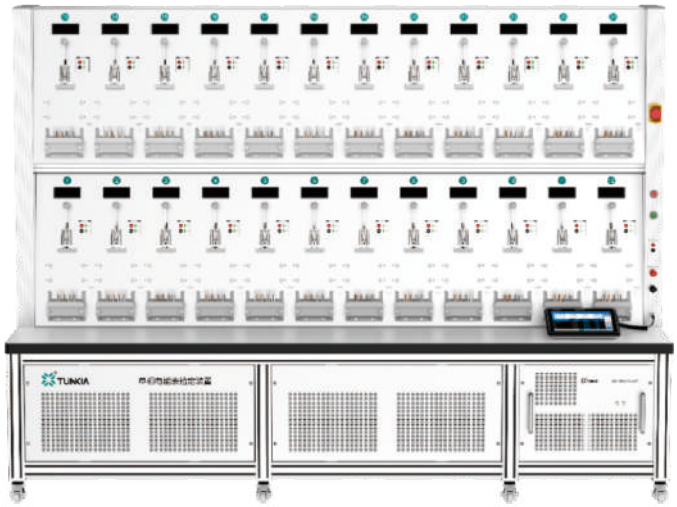
TD3500 is applied for verification of single-phase energy meters. It mainly consists of single-phase precision standard power source, verification platform, measurement and control platform, PC(optional) and verification software. TD3500 supports simultaneous verification of 6 ~ 24 single-phase electricity/mechanical energy meters with the same voltage/current range, different meter constant.

- Accuracy: Class 0.05 /Class 0.1
- Maximum Output Capacity: 264 V / 120 A
- Frequency: 45 Hz ~ 100 Hz
- Minimum Current Output: 1 mA
- Energy Measurement: Positive / Negative Active and Reactive Energy
- Connection: Equipped with Special Pressure Gauge Holder
- Energy Pulse: Electric and Optical Pulse Sampling Ports
- Multiple-position Test: Optional 6, 12, 16, 24 positions

TD3550

Single-phase Energy Meters Verification Device

TD3550 is a device used to verify new type single-phase energy meters that meet the OIML R46 instruction. It mainly consists of single-phase precision standard power source, test bench, PC(optional) and verification software. It supports simultaneous verification of 6 ~ 24 single-phase electricity/mechanical energy meters, smart meters and IOT electricity meter, etc.



- Accuracy: Class 0.05 /Class 0.1
- Maximum Output Capacity: 264 V / 120 A
- Frequency: 45 Hz ~ 100 Hz
- Minimum Current Output: 1 mA
- Energy Measurement: Positive / negative active and reactive energy
- Harmonic Output: 2nd~63rd @50Hz / 60Hz
- High Order Harmonic Test
- Complex Waveform Test
- Daily Reckoning Error Test: Built in standard clock tester
- Multiple-position Test: Optional 6, 12, 16, 24 positions

TD3600

Three-phase Energy Meters Verification Device

TD3600 is applied for the verification of new three-phase energy meters. It mainly consists of three-phase precision standard power source, test bench, PC(optional) and verification software. TD3600 Supports simultaneous verification of 3 ~ 16 three-phase energy meters with the same voltage/current range, different meter constant.

- Accuracy: Class 0.02/Class 0.05.
- Maximum Output Capacity: 576 V / 120 A
- Frequency: 45 Hz ~ 100 Hz.
- Minimum Current Output: 0.2 mA.
- Energy Measurement: Positive / negative active and reactive energy.
- Daily Reckoning Error Test: Built in standard clock tester.
- Connection: Equipped with special pressure gauge holder.
- Energy Pulse: Electric and optical pulse sampling ports.
- Multi-position Test: Optional 3, 6, 12, 16 positions.

TD3650

Three-phase Energy Meters Verification Device

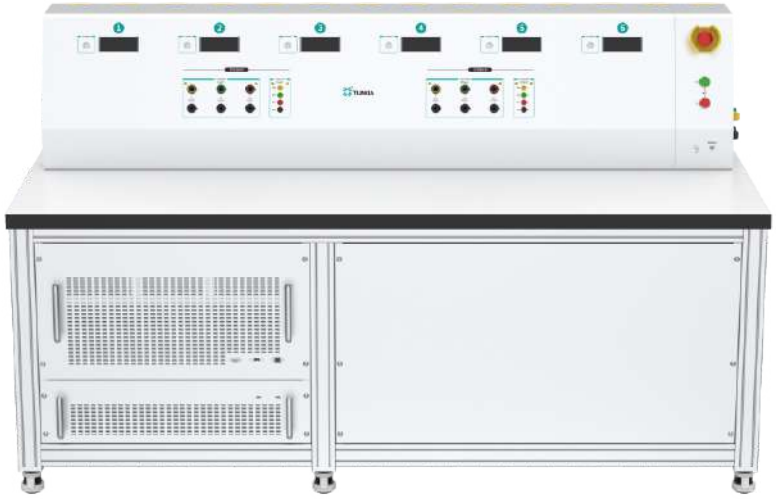
TD3650 is applied for the verification of new three-phase energy meters. TD3650 supports simultaneous verification of 3 to 16 three-phase energy meters (Three-phase electrical meters, Three-phase smart electricity meters, Three-phase smart IoT electricity meters, etc.) with the same voltage/current range, different meter constant.

- Accuracy: Class 0.02 / Class 0.05
- Maximum Output Capacity: 576 V / 120 A
- Frequency: 45 Hz ~ 100 Hz
- Minimum Current Output: 0.2 mA
- Energy Measurement: Positive / negative active and reactive energy.
- Harmonic Output: The 2nd ~ 63rd @ 50 / 60 Hz
- Complex Waveform Test
- DC and Even Harmonics test
- Energy Pulse: Electric and Optical Pulse Sampling Ports
- Multi-position Test: Optional 3, 6, 12, 16 positions.

TD3610

Three-phase Standard Energy Meters Verification Device

TD3610 is applied for the verification of three-phase energy reference standard.It can automatically complete the class 0.02 and the following class of R46 AC standard energy meter or AC standard source verification.



- High Accuracy: Class 0.01
- High Reliability: output power stability is 0.01% / 2min
- Reliable Quality: Temperature coefficient < 0.5 ppm/K
- Harmonic Output / Measurement: 2^{nd} ~ 63^{rd} @ 50 Hz / 60 Hz
- Positive /Reverse Sequence Power Metering Functions
- Waveform Display, Phase Diagram Display, Stability Test, Change Curve Drawing, Statistical Analysis Of Data

TD3760

Complex Waveform Testing Device

TD3760 is an AC power device specially designed for complex waveform current influence test of new AC energy meters. It meets the test requirements of relevant current influence in OIML R46. The device directly outputs complex current waveforms with high stability and accuracy through the three phase precision standard power source, which can complete the following test items.

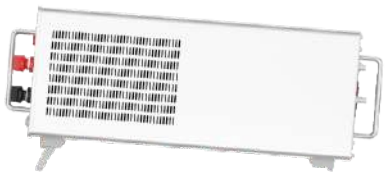
- Accuracy: Class 0.05
- Impact Test of DC and Even Harmonics
- Impact Test of Harmonic in Voltage-current Circuits
- Impact Test of Inter-harmonic in the Current Circuits
- Impact Test of Odd Harmonic in Current Circuits
- High-order Harmonic Test
- Burden Current Fast Change Test
- Multi-position Test: Optional 3, 6, 12, 16 positions

TD4550

Portable Tester for Three-phase Energy Meters

TD4550 is an intelligent and highly integrated test system for calibrating electrical apparatus. It is built-in 3PH standard source. It can complete intrinsic error test, constant test, standard deviation test, starting current test, test of no-load of electric energy meter.

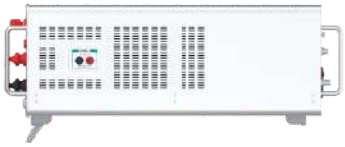
- Accuracy: Class 0.02 / Class 0.05 / Class 0.1
- 3PH ACV Output: 6 V ~ 456 V
- 3PH ACI Output: 2 mA ~ 120 A
- Multiple Output Mode, Support Three-Phase or Single Adjust
- U-I Phase: 0° ~ 360°, Accuracy 0.01°
- 2nd~21st Harmonic Output



TD4100

Portable Tester for Three-phase and DC Meters

TD4100 is a multi-function 3PH power source. It integrates AC/DC power output function, harmonic function, transmitter test function, AC energy meter test function. Can be used to calibrate AC/DC voltmeter, AC/DC ammeter, AC/DC power meter, electric energy meter and transmitter, etc.



- Accuracy: Class 0.02/Class 0.05
- 3PH AC Voltage Output: 1 V ~ 825 V
- 3PH AC Current Output: 2 mA ~ 110 A
- Frequency: 45 Hz ~ 70 Hz
- U-I Phase: 0° ~ 360°
- DC Voltage Output: 5 mV ~ 1100 V
- DC Current Output: 1 μA ~ 33 A
- AC Energy Meter Test

TD4200

Testing Device for Three-phase and DC Meters

TD4200 is a multi-function comprehensive test bench for the calibration of electrical measuring instruments. It integrates precision 3PH standard source, high-precision 3PH standard meter, precision DC standard source, test-bed, computer and special software. Can be used to calibrate three-phase AC/DC meter, AC standard source, AC/DC transmitter, etc

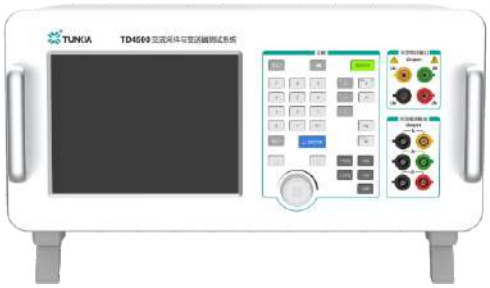
- Accuracy: Class 0.01/Class 0.02
- 3PH Voltage Output: 0.3 V ~ 825 V
- 3PH Current Output: 0.3 mA ~ 110 A
- 3PH Standard Meter
- DC Power Output: 1100 V / 33A or 110A
- Frequency and Phase Adjustable
- Harmonic Function / AC Energy Meter Test

TD4500

Portable Tester for AC Sampling Devices and Transmitters

TD4500 is a multi-function 3PH power tester, which integrates AC/DC power output function, 3PH measuring function, harmonic function, transmitter test function, U4th voltage output function, AC energy meter test function. It can be used to calibrate AC/DC voltmeter, AC/DC ammeter, AC/DC power meter and transmitter, etc.

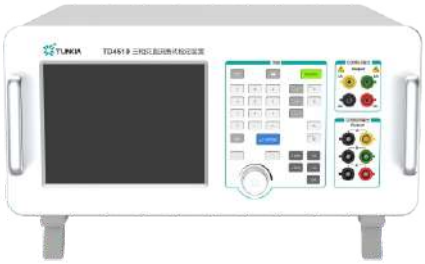
- Accuracy: Class 0.02/ Class 0.05
- 3PH ACV Output and Measurement: 6 V ~ 456 V
- 3PH ACI Output and Measurement: 0.1 A ~ 6.25 A
- Frequency: 45 Hz ~ 70 Hz; U-I Phase: 0° ~ 360°
- DCV Output: 10 mV ~ 330 V
- DCI Output: 0.1 mA ~ 22 mA
- 2^{nd}~21^{st} Harmonic Output



TD4510

Portable Tester for Three-phase and DC Meters

TD4510 is a multi-function 3PH power tester. It integrates AC/DC power output and measuring function, harmonic function, transmitter test function, U4th voltage output function, AC energy meter test function. It can be used to calibrate AC/DC voltmeter, AC/DC ammeter, AC/DC power meter electric energy meter and transmitter, etc.



- Accuracy: Class 0.02/ Class 0.05
- 3PH ACV Output and Measurement: 6 V ~ 456 V
- 3PH AC current output/Measurement: 20 mA ~ 12 A/0.1 A ~ 6 A
- Frequency: 45 Hz ~ 70 Hz
- U-I Phase: 0° ~ 360°
- DCV Output: 10 mV ~ 660 V
- DCI Output: 0.1 mA ~ 11 A
- 2^{nd}~21^{st} Harmonic Output

TD4520

Portable Tester for Three-phase and DC Meters

TD4520 is a multi-function 3PH power tester. It integrates AC/DC power output function, 3PH measuring function, harmonic function, transmitter test function, U4th voltage output function, AC energy meter test function. Can be used to calibrate AC/DC voltmeter, AC/DC ammeter, AC/DC power meter electric energy meter and transmitter, etc.

- Accuracy: Class 0.02/ Class 0.05
- 3PH ACV Output and Measurement: 6 V ~ 456 V
- 3PH ACI Output/Measurement:
  20 mA ~ 24 A/0.1 A ~ 6 A
- Frequency: 45 Hz ~ 70 Hz; U-I Phase: 0° ~ 360°
- DCV Output: 10 mV ~ 660 V
- DCI Output t: 0.1 mA ~ 22 A
- 2nd~21st Harmonic Output

TD4530

Portable Tester for Three-phase and DC Meters

TD4530 is a multi-function 3PH power tester. It integrates AC/DC power output function, 3PH measuring function, harmonic function, transmitter test function, U4th voltage output function, AC energy meter test function. Can be used to calibrate AC/DC voltmeter, AC/DC ammeter, AC/DC power meter electric energy meter and transmitter, etc.

- Accuracy: Class0.02/Class 0.05
- 3PH ACV Output/Measurement:
  1 V ~ 660 V (UAB Max 1100 V)/ 6 V ~ 456 V
- 3PH ACI Output/Measurement:
  20 mA ~ 30 A/ 0.1 A ~ 6 A
- Frequency: 45 Hz ~ 70 Hz
- U-I Phase: 0° ~ 360°
- DCV Output: 10 mV ~ 1100 V
- DCI Output: 0.1 μA ~ 30 A
- 2nd~21st Harmonic Output

EV Charger Testers and Loads

TK4830

Portable Tester for AC DC EV Chargers

TK4830 is an comprehensive AC and DC charging station calibration tool. With an impressive accuracy of 0.05% in AC and DC power measurement, it proficiently conducts working error and clock time tests for both types of charging stations.

This versatile device is capable of using new energy vehicles as loads or applying resistive loads for testing. Leveraging advanced technologies like wide dynamic range measurement and millisecond-level high-speed electric energy refresh, it ensures precise measurement of accumulated energy during the entire charging process.

Test with resistive load as load

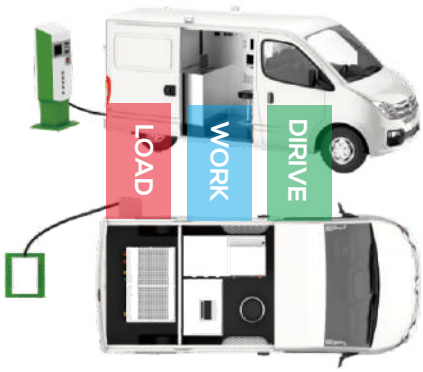
Test with EV as load

- **Working Error:** The working error test can be completed in real time during the charging process through the pulse method or the accumulated electric energy method. It supports two methods of testing: using new energy vehicles as loads or programmable resistive loads as loads.
- **Clock Verification:** It has time verification function, real-time clock display, and clock time error test of the charger.
- **Temperature verification:** Equipped with a wired temperature probe, which can complete on-site temperature testing.

Vehicle-Mounted Testing Solution

Applicable to the testing of DC charging stations up to 180 kW and AC charging stations up to 63 A according to GB/T standards.

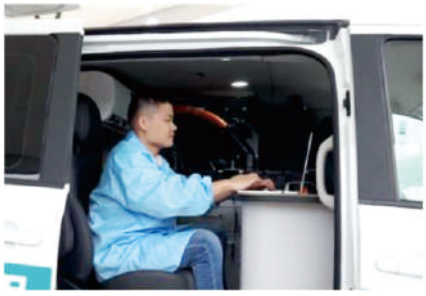
Test items: appearance inspection, insulation resistance test, working error, clock time error, communication protocol consistency test, interoperability test, functional test, safety test, electrical performance test and other inspection items.



Efficient Spatial Layout

Excellent Cooling Design

External Test Interface



Automatic Testing Inside

TD1320

Portable Tester for DC EV Chargers

TD1320 is a portable instrument dedicated to on-site testing of EV(electric vehicles) DC chargers with DCV measurements up to 1150 V, DCI measurements up to 300A, and DC electrical energy available in Class 0.05 / Class 0.1. The instrument can be combined with TK4710 DC resistive load to complete the metrology characteristic test, interoperability test and communication protocol conformance test of DC charging machine.

- DCV measurement: 30 V ~ 1150 V
- DCI measurement: 0.5 A ~ 300 A
- DC energy measurement accuracy: 500 ppm, 0.1%
- Temperature measurement: -30 ℃ ~ 60 ℃, max allowable error: 0.5 ℃
- Clock function: timing mode: GPS clock timing; accuracy: 1 s/d

TD1330

Portable Tester for AC EV Chargers

TD1330 is a portable instrument dedicated to on-site inspection of EV AC charging station, with three-phase AC voltage measurements up to 300 V, three-phase AC current measurements up to 78 A, and AC energy measurement available in Class 0.05 / Class 0.1. The instrument can be combined with TK4720 AC adjustable resistive load to complete the metrology characteristics test and interoperability test of AC charging station.

- Three-phase ACV measurement: 30 V ~ 300 V
- Three-phase ACI measurement: 10 mA ~ 78 A
- AC energy measurement accuracy: 500 ppm, 0.1%
- Frequency range: 45 Hz ~ 65 Hz; Phase range: 0.000° ~ 359.999°
- Temperature measurement: -30℃ ~ 60℃, max allowable error: 0.5 ℃
- Clock function: timing mode: GPS clock timing; accuracy: 1 s/d

TK4800

Calibration Device for EV Charger Testers

TK4800 is a set of devices dedicated to calibrating portable tester for DC EV chargers and portable tester for AC EV chargers. The device is designed based on the dynamic characteristics of new energy vehicle charging. It supports two modes: steady-state electric energy measurement (for constant load) and dynamic electric energy measurement (for fluctuating loads).

- **High Accuracy Measurement:** The steady-state electric energy measurement accuracy of the device reaches class 0.01, and the dynamic electric energy measurement accuracy reaches class 0.02.
- **Wide Range:** DC output 100 V ~ 1150 V, 0.1 A ~ 300 A, AC output 220 V ± 20%, 10 mA ~ 80 A.
- **Ms Level Power Refresh:** The DC power accumulation register update rate reaches 10ms/time, and the AC power accumulation register update rate reaches 20ms/time.
- **Charging Gun Head Measurement:** The electric energy measurement point of the device is set at the charging gun head (side of the pile), and the wire resistance of the charging gun wire is compensated to ensure that it matches the calibrator and charger measurement point.
- **Current Channel Switching:** The DC current channel of the device supports switching between the charging head DC+ and the charging head DC-, which can be used to calibrate the charger tester with the current sampling located at DC+ and the charger tester with the current sampling located at DC- respectively.
- Automatic test software for portable tester for AC DC EV chargers.

TK4710

DC Adjustable Resistance Load

TK4710 is a DC adjustable resistance load box with a rated power of 60 kW. The panel is equipped with standard DC charging socket, which can be used with DC charger field tester to realize on-site verification of DC charger for electric vehicles.

Rated power: 20 kW, 60 kW

TK4720

AC Adjustable Resistance Load

TK4720 is an AC adjustable resistance load box with rated power single-phase 9kW or three-phase 45kW. The panel is equipped with standard AC charging socket, which can be used with AC charging pile field tester, to realize the on-site verification of AC charger for electric vehicles.

TK4720 - 9 kW

TK4720 - 45 kW

Rated power: 9 kW (single-phase), 45 kW (three-phase)

TK4960

DC Charging-Power Calibration Adapter

TK4960 is an interface adapter equipped with two DC charging sockets. It is suitable for metrology laboratories to use existing high precision DC standard power sources to calibrate non-vehicle DC charger testers, such as TUNKIA TD1320 or similar equipment from other manufacturers.

TK4965

AC Charging-Power Calibration Adapter

TK4965 is an interface adapter equipped with two AC charging sockets. It is suitable for metrology laboratories to use existing high precision AC standard power sources to calibrate non-vehicle AC charger testers, such as TUNKIA TD1330 or similar equipment from other manufacturers.

Safety Instrument Testing

TD1210

Verification Device for Leakage Current Tester

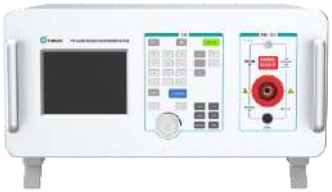
TD1210 integrates the DC~1MHz wideband constant current standard source, constant voltage standard source, DC ohmmeter, impedance tester, AC voltage standard meter and others. It's applied for calibrating conventional leakage current meter, contact current tester, and medical leakage current tester.

- Current Output: 50 μA ~ 55 mA
- Voltage Output: 30 mV ~ 31 V
- Frequency: DC ~ 1 MHz
- ACV Measurement: 0~300 V
- 1592 Hz Small Current Source for Time Constant Test

TD1220

Verification Device for DC High Voltage & High Value Resistor

TD1220 applied to calibrate DC high voltage and high resistor, high voltage resistance case, DC high voltage meter, insulation resistance tester verification device (MOHM meter verification device) etc.



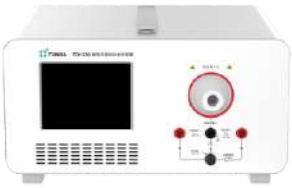
- DCV Output: 0 ~ 10 kV
- DCI Output: 0 ~ 50 mA
- DC RES Measurement: 100 Ω ~ 2 TΩ/10 TΩ
- Accuracy: Class 0.03
- Constant Voltage Source (CV) Mode: High Resistance Measurement
- Constant Current Source(CC) Mode: Low Resistance Measurement

TD1230

Verification Device for Withstanding Voltage Tester

TD1230 applied to calibrate AC/DC withstanding voltage tester, withstanding voltage part of safety performance comprehensive tester, withstanding voltage part of insulation withstanding voltage tester and etc.

- ACV/DCV Measurement: 100 V ~ 15 kV.
- ACI/DCI Measurement: 0.1 mA ~ 250 mA.
- Distortion / Ripple and Voltage Duration Time Test
- Built-in Adjustable Resistive Load with Fineness of 1 kΩ.
- Oscilloscope and Data Statistical Analysis



TD1240

Verification Load Bank for Withstanding Voltage Testers

TD1240 is a resistive load bank with 14 sets fixed resistance. It can help calibrate withstanding voltage testers with cooperation of TD1230, and also can be use to calibrate breakdown alarm current and leakage current.

- Load Resistance: 12.5 kΩ~2250 kΩ
- Rated Voltage: 2.5 kV~15 kV
- Rated Current: 10 mA~200 mA
- Max Power: 120VA~600 VA

TD1250

Verification Device for Earth Continuity Testers

TD1250 is a precision AC/DC artificial resistance, integrated a AC/DC ammeter. Applied for calibrating earth continuity tester and other AC/DC low resistance instruments. It can calibrate max permissible error, alarm setting error, test current setting error etc.

- Dc Resistance Simulation: 200 μΩ (100 μΩ optional) ~ 20 Ω.
- AC Resistance Simulation: 500 μΩ (300 μΩ optional) ~ 15 Ω.
- AC/DC Current Measurement: 0.5 A ~ 36 A (60A option).
- Accuracy: Class 0.02/ Class 0.05/ Class 0.1.
- Harmonic and ripple function.
- With data statistics and analysis, stability test function.

High Voltage Calibration Instruments

TD2400

AC High Voltage Standard Source

TD2400 is a high-precision and multi-function AC standard high voltage source with wide rang. It's applied for calibrating AC high voltage meter, withstanding voltage testers, high voltage probe etc.

- Accuracy: Class 0.02/ Class 0.05
- ACV Output: 100 V ~ 5 kV / 10 kV / 15kV
- Frequency: 45 Hz ~ 65 Hz
- 2^{nd}~11^{th} Harmonic Output
- Short-circuit and Overload Protection

TD2410

High Voltage Meters Calibration Device

TD2410 is a high-precision and multi-function AC standard high voltage source with wide rang. It's applied for calibrating AC high voltage meter, withstanding voltage testers, high voltage probe etc.

- Accuracy: Class 0.02/ Class 0.05
- ACV Output: 1kV ~ 35 kV
- Frequency: 45 Hz ~ 65 Hz
- 2^{nd}~11^{th} Harmonic Output
- High Voltage Switch For Safety

TD2500

DC High Voltage Standard Source

TD2500 is a high-precision and multi-function DC standard high voltage source with wide rang. It's applied for calibrating DC high voltage meter, withstanding voltage testers, high voltage probe etc.

- Accuracy: Class 0.02 / Class 0.05
- DCV Output: 100 V ~ 5 kV / 10 kV / 20 kV / 50 kV
- Short-circuit and Overload Protection

TD2550

Non-touch Static Voltmeters Calibration Device

TD2550 is a high precision, high stability high pressure standard source instrument. It's applied for calibrating non-contact electrostatic voltmeter, high voltage electrostatic voltmeter, DC high voltage meter, high voltage probe etc.

- Accuracy: Class 0.05 / Class 0.1
- Bipolar DCV Output: 500 V ~ 20 kV /30kV
- Equip with Standard Plate Electrode
- Insulated Support, Distance Regulator
- Voltage Indicators for Safety Warning
- Short-circuit and Overload Protection

TD2600

Precision DC High Voltage Meter

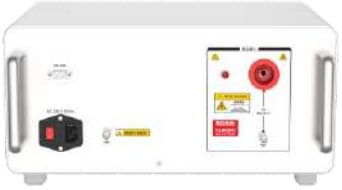
TD2600 is a wide range, high-precision DC high voltage meter. It's applied for calibrating DC high voltage source or meter, high voltage probe, etc.

- Accuracy: Class 0.02/Class 0.05
- DCV Measurement: 100 V ~ 5 kV/10 kV / 20 kV / 50 kV
- Stability Testing for HV Source, Data Analysis
- Short Circuit and Overload Protection

TD2650

Precision AC / DC High Voltage Meter

TD2650 is a wide range, high-precision AC&DC high voltage meter. It's applied for calibrating DC high voltage source or meter, AC high voltage source or meter, high voltage probe, etc.



- Accuracy: Class 0.02/ Class 0.05
- DCV Measurement: 100 V ~ 5 kV /10 kV / 20 kV / 50 kV
- ACV Measurement: 100 V ~ 5 kV /10 kV
- Stability Testing for HV Source, Data Analysis
- Short Circuit and Overload Protection

Industrial Instrument Calibration & Testing

TD7500

Process Signal Calibrator

TD7500 is a handheld thermal instrument and process signal measurement calibration instrument, which can calibrate class 0.1 and below industrial sensors, transmitters, recorders and other thermal process instruments. It can calibrate thermal engineering secondary instruments.

- Accuracy: Class 0.05
- DCV Output/Measurement: 10 mV~11 V
- DCA Output/Measurement: 0.2 mA~24 mA
- DC Resistance Simulation: 4 Ω~4.8 kΩ
- DC Resistance Measurement (2-Wire/4-Wire): 4 Ω~4.4 kΩ
- 6 types of RTD and 8 types of TC.
- Auxiliary Power: 24 V Loop Mode Power

TD7600

Precision Process Calibrator

TD7600 is a high-precision thermal meter and process signal meter calibrator. Applied to calibrate process signal calibrators, industrial sensors, transmitters etc. It can calibrate the process signal calibrator of Class 0.01or below.

- Accuracy: Class 0.003
- DCV Output/Measurement: 10 mV ~ 110 V
- DCA Output/Measurement: 0.1 mA ~ 110 mA
- DC Resistance Simulation/Measurement: 4 Ω~4.4 k Ω
- 11 types RTD and 12 types TC
- Auxiliary Power: 24 V Loop Mode Power

TI1000

Precision AC/DC Voltage Calibrator

TI1000 is an AC/DC voltage source with high stability and precision. it is applied for calibrating digital voltmeters/multimeters on-site, e.g, industrial production lines, etc.

- Accuracy: 35ppm/100ppm(DC), 100ppm/200ppm(AC)
- ACV/DCV Output: 10 mV ~ 1020 V
- Frequency: DC, AC 10 Hz ~ 2 kHz/20 kHz
- Maximum ACV/DCV Output Power: 10 VA

TI1100

Precision AC/DC Current Calibrator

TI1100 is an AC/DC current source with high stability and precision, it is applied for calibrating ammeters on-site, e.g, industrial production lines, etc.

- Accuracy:
  Class 0.01/Class 0.02(DC), Class 0.02/Class 0.05(AC)
- AC/DC Current Output: 10 μA ~ 10.5 A
- Frequency: DC, AC 10 Hz ~ 2 kHz/10 kHz
- Typical Short-term Stability: 0.005%/min/0.01%/min

TI1200

Precision DC Resistance Calibrator

TI1200 is a high-precision DC resistance source with wide range, it is applied for calibrating ohmmeter on-site, e.g, industrial production lines, digital multimeters, DC bridges, microhmmeters, etc.

- Accuracy: 50 ppm
- Resistance Output: 0 Ω ~ 1100 MΩ
- Programmable Calibration Schemes

TI2100

High-stable DC High Current Standard Source

TI2100 is a series of high-stability DC high-current standard sources for industrial testing, which adopts a modular design and supports the combined output of multiple sources to adapt application scenarios with different current specifications.

- Accuracy: Class 0.01
- DCI Output: N*1.5 kA
- Short-term stability: 0.003% * FS
- Maximum Load Voltage: 10 V
- Unipolar Source/Bipolar Source
- Ripple Coefficient: <0.1%

TK2600

Pulse Voltage Source

TK2600 is a pulse voltage source that the rise and fall time of pulse is less than 10 μs, and the step response performance is faster. It is suitable for measuring the response time of current sensor, Roche coil and other equipment, or calibrating pulse shunt, etc.

- Pulse Voltage Output: 200 V ~ 2 kV
- Pulse Width: 1 ms ~ 10 ms
- Rise Time: ≤10 μs
- Rising Edge Falling Edge On-time: 10 ms ~ 10 s (adjustable)

TK2650

Pulse Current Source

TK2650 is a pulse current source that the rise and fall time of pulse is less than 10 μs, and the step response performance is faster. It is suitable for measuring the response time of current sensor, Roche coil and other equipment, or calibrating pulse shunt, etc.

- Pulse Current Output: 500 A
- Pulse Width: 1 ms ~ 100 ms
- Rise Time: ≤10 μs

TK6500

Electric Welding Machine AC/DC Power Calibrator

TK6500 is a precision AC-DC power calibrator for on-site calibration, which is suitable for calibrating the internal ammeter and voltmeter without disassembling the welding machine.

- Accuracy: Class 0.05 / Class 0.1
- ACV/DCV Measurement: 5 V~180 V / 500 V
- ACI/DCI Measurement: 10 A~3 kA
- Frequency: DC, 40 Hz ~ 1 kHz
- Harmonic Measurement Function
- Supports Exporting Data Via USB

TK6700

Electric Welding Machine Calibrator

TK6700 is a AC/DC welding machine power parameter comprehensive calibrator with built-in high-current precision measurement module and resistance load. It can be used to calibrate the current or voltage of the welding machine without disassembling it.

- Accuracy: Class 0.05 / Class 0.1
- ACV/ DCV Measurement: 0.1 V~180 V/ 500 V
- ACI/DCI Measurement: 10 A~1 kA
- Frequency: 40 Hz~1 kHz
- 2nd~18th Harmonic Measurement
- Supports Exporting Data Via USB

TP1000

Surface Resistance Tester

TP1000 is a handheld instrument specially designed to measure surface resistance and electrostatic leakage resistance, while measure ambient temperature and humidity. Users can use one instrument to complete the test requirements of surface resistance and electrostatic leakage resistance of table mats, floor coatings, paint surfaces and containers.

- Measurement Uncertainty: 5%
- Resistance measurement range: 10^3~$10^{12}\Omega$
- Test Voltage: 10 V / 100 V
- Temperature Measuring: 0 ℃ ~ 50 ℃
- Humidity Measuring: 10 ~ 80 % R·H
- Data Storage, Export, Connect to Printers

TP2000

Handheld Temperature Humidity Meter

TP2000 is a portable, multi-function temperature and humidity measuring instrument, equipped with a high-sensitivity, high-precision sensor, and applies to quickly measure ambient temperature and humidity.

- Temperature Measuring: -30 ℃ ~ 60 ℃
- Humidity Measuring: 10 ~ 90 % R·H
- Accuracy: ±1 ℃ / ±5 %R H
- Display Backlight
- Bluetooth Communication, Data Storage

Medical Metrology

TD7200

Calibrator for Electrosurgical Unit Analyzers

TD7200 is an instrument applied to calibrate commercial electrosurgical unit analyzers, which can simulate high-frequency electrosurgical generator to accurately output high-frequency voltage, current, power and other electrical parameters.

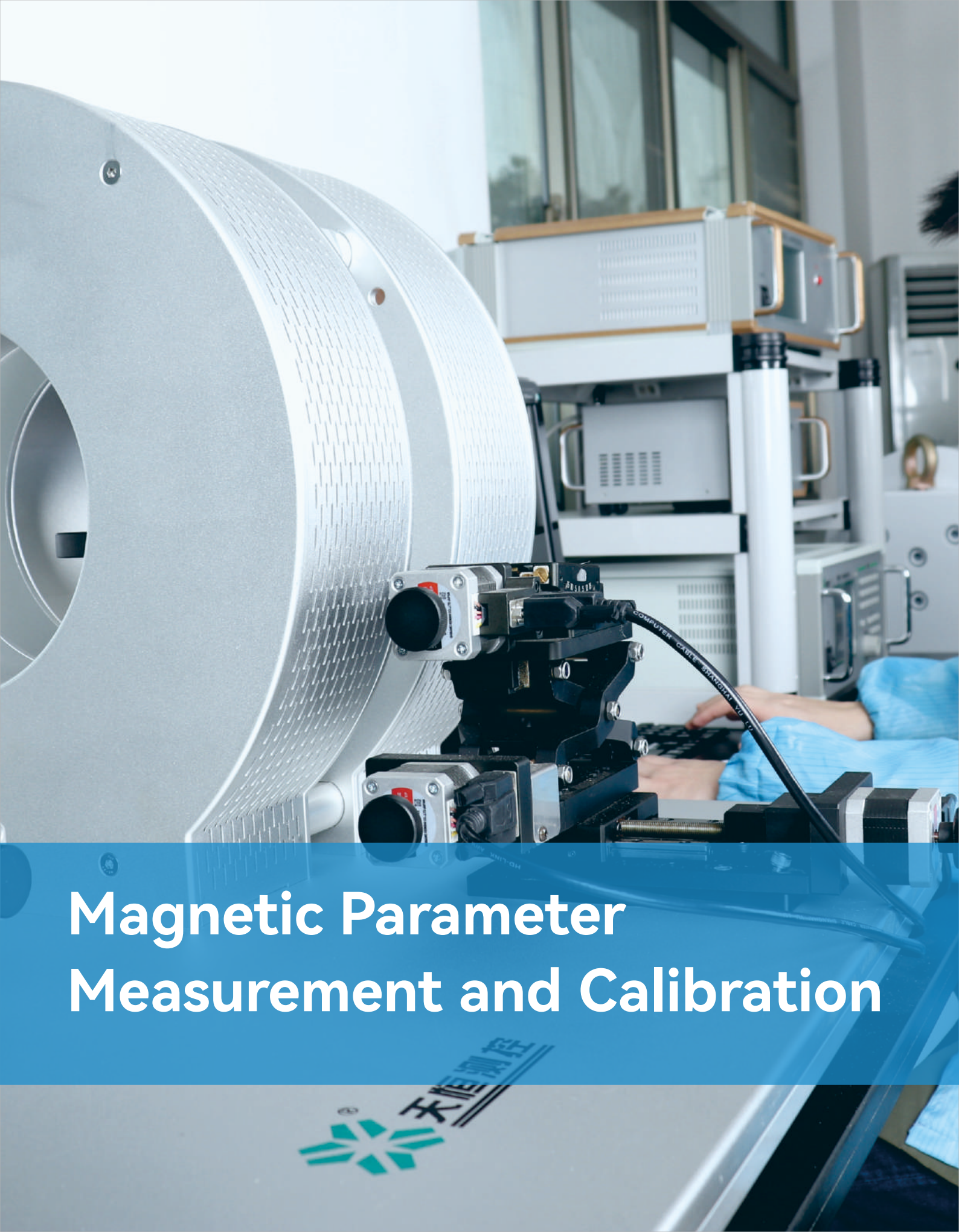
- Measurement Uncertainty: 0.5%
- Voltage Output: 10 V~550 V
- Current Output: 100 mA ~3.3 A
- High Frequency: 50 kHz~1 MHz
- Multi Parameter Display

TD7300

Calibrator for Defibrillator Analyzers

TD7300 is a device applied for energy calibration of defibrillator analyzer. It is used for medical equipment manufacturers and medical equipment testing institutions at each level carry out registration inspection, metrological traceability, etc.

- Energy Output: 1 J ~ 400 J
- Maximum Voltage Output: 3700 V
- Discharge Mode: Monophasic Wave (MDS, MTE), Biphasic Wave (BTE)
- Discharge Pulse Duration: about 10 ms ~ 16 ms



Magnetic Parameter Measurement and Calibration

TM6140B

Precision Magnetometer

TM6140B is a high-precision, multi-functional magnetic field measuring instrument, equipped with a high sensitivity, low drift Hall sensor and advanced digital signal processing technology. The instrument is applied for measuring the magnetic field density of DC (constant) or AC magnetic field. It can be used as a magnetic field measurement standard to calibrate DC magnetometers.

- Measuring Range: 0 ~ 3000 mT.
- Accuracy Class: 0.05.
- Switch between DC or AC Mode.
- 7-digits Display with a Minimum Resolution of 1 nT.
- Unit Switch: G, mT, Oe, A/m.
- Probe Temperature Compensation.
- RS232 Output Digital Signal.
- Radial and Axial Hall Probes(optional).

TM7600

Digital Integration Flux Meter

TM7600 is a series of high-precision magnetic flux measuring instruments, using advanced digital sampling and integration methods. It overcomes the defects of traditional capacitance-integrated (RC-integrated) flux meters. It provides an effective measurement method for the research and development of advanced magnetic materials and the traceability of magnetic flux value.

- Accuracy Class: 0.02, 0.05, or 0.1
- The drift is ≤ 0.5 μWb/min at 0.05 class.
- Unit switch: Wb, mWb, Vs, mVs, Mx.
- One-key reset and zero drift.
- Class 0.02 support Φ (t) and U(t) measurement curve display.
- Saves the voltage zero at the input end of the coil.
- Support coil resistance input to eliminate effects.
- Digital and analog signal (option) output.

TM7900

Precision Volt-second Generator for Flux Meter Calibration

TM7900 is a high-precision calibrator for flux meter, which generates magnetic flux by a built-in high-precision Volt-second Generator (1Vs=1Wb). It calibrates flux meters by comparing indicating value of the value that the flux meter generates. Compared with Mutual Inductance method, volt-second method is featured with easier to use, better precision and traceability, it is applied for calibrate digital flux meter and electrical integrator.

- Accuracy: Class 0.005, 0.01, 0.02 or 0.05
- Built-in high-precision voltage source and timer.
- Generate magnetic flux by integrating voltage and time.
- Calculate and output voltage and time by setting magnetic flux value.
- Quick calibration in several seconds.
- Unit switch: mWb, Wb, Vs, mVs, Mx.
- Support setting interior resistance and wire resistance.
- Eliminate interior resistance's influence by compensation.

TM9000

Calibration System for Magnetometers

Tm9000 is a set of high precision, multi-function, intelligent magnetic parameter measurement standard device. It is composed of high-precision DC current standard source, standard electromagnet, standard Helmholtz coil, precision magnetometer, magnetic shielding cavity, automatic calibration software, etc. It is suitable for provincial and municipal metrology laboratories to set up magnetic field measurement testing standards and carry out digital or pointer type DC magnetometer calibration.

- A standard source of bipolar excitation current equipped with dual channels.
- The stability of the current source reaches 30 ppm /min.
- Accuracy class 0.01, the annual error variation is better than 50 ppm.
- Adjustment fineness is a minimum of 5ppm.
- Magnetic field coil generates a standard magnetic field of ± (0.1 mT to 100 mT).
- Electromagnets generate a highly stable magnetic field of ± (10 mT ~ 2.5 T).
- Calibration Software

TM5100

Handheld Tesla/Gauss Meter

TM5100 is a portable magnetic field measuring instrument, equipped with a Hall sensor with high sensitivity and low drift, which is suitable for measuring the flux density of DC constant magnetic field.

- Measuring range: 2mT ~ 3000 mT
- Accuracy: Class 1, 2 or 5.
- Unit switch: G, mT, A/m.
- One-key reset function.
- Max value hold function.
- N/S polarity display.
- Axial and radial probe are optional.
- USB interface.

TM5100A

Handheld AC Magnetometer

TM5100A is a portable alternating magnetic field measuring instrument， equipped coil probe, which is suitable for measuring the flux density of AC constant magnetic field, used to calibrate AC magnetic field source, space magnetic field scanning, scientific research. etc.

- Measuring range: 2mT ~ 240 mT.
- Accuracy: Class 1 / 2.
- Unit Switch: G, mT, A/m.
- One-key reset function.
- Max value hold function.
- Supporting back-light function.
- Battery remaining power display.
- USB interface.

TM5120B

Handheld Tesla Meter

TM5120B is a portable and multi-functional magnetic field measuring instrument，equipped with a Hall sensor with high sensitivity and low drift. It is applied for measuring the flux density of DC constant magnetic field and AC magnetic field.

- Measuring range: 2mT ~ 3000 mT.
- Accuracy: Class 1 or 2.
- Switching AC or DC mode
- Unit switch: G, mT, A/m.
- Max value hold function.
- Alarm of exceeding the upper / lower limit.
- Axial and radial probe are optional.
- USB interface.

TM5340B

Handheld Triaxial Tesla Meter

TM5340B is a portable, multi-functional meter that measures magnetic field, equipped with high sensitivity, low drift triaxial Hall sensor. It is applied for measuring the magnetic density value of DC or AC triaxial magnetic field.

- Measuring range: 2 mT ~ 3000 mT.
- Accuracy: Class 5.
- Measuring XYZ component, vector synthetic value.
- Switching AC or DC mode.
- Unit switch: mT, G, A/m.
- Max value hold function.
- Probe temperature compensation.
- USB interface.

TM6100

Gauss Meter

TM6100 is a high-precision, multi-functional magnetic field measuring instrument equipped with a high-sensitivity, low-drift Hall sensor. It is applied for measuring the magnetic flux density value of a DC (constant) magnetic field or an alternating magnetic field (optional).

- Measuring Range: 2 mT ~ 3000 m T.
- Accuracy: Class 0.2 or 0.5.
- Optional AC measurement mode.
- Unit switch: G, mT, A /m, Oe.
- N/S and +/- polarity display.
- Measuring parameter correction.
- Radial and axial Hall probes are optional.
- Digital and analog signal output.

TM6160B

AC/DC Tesla Meter

TM6160B is a versatile AC and DC Tesla meter with a maximum magnetic field of 3 T. It can directly measure the DC magnetic field generated by the magnetic field generator, and the AC magnetic field. It is also suitable for the magnetic field measurement in the impact test of the OIML R46.

- DC and AC measurement modes.
- Measure medium and high DC magnetic fields with a Hall probe.
- Measure low AC magnetic fields with a coil probe.
- Data statistics, stability analysis functions.
- Unit switch: G, mT, Oe, A/m.
- +/- polarity display.
- Set magnetic field integration period.
- Digital and analog signal output.

TM4100B

Handheld Fluxgate Magnetometer

TM4100B is a portable meter that measures low magnetic field, equipped with high sensitivity, high linearity, low drift fluxgate sensor, which can measure low magnetic accurately.

- Measuring range: 0~2000 μT.
- Various of probes are optional.
- Accuracy: Class 1 or 2.
- Unit Switch: μT, mG.
- Relative measurement mode.
- Max value hold function.
- N/S polarity display.
- USB interface.

TM4300B

Handheld Triaxial Fluxgate Magnetometer

TM4300B is a portable, multi-function meter that measures low magnetic field, equipped with high sensitivity, high linearity, low drift triaxial fluxgate sensor, which can measure low magnetic field accurately.

- Measuring range: 0~2000 μT.
- Various of probes are optional.
- Accuracy: Class 1 or 2.
- Unit switch: μT, mG.
- Max value hold function.
- USB interface.
- Measuring XYZ component, vector synthetic value.
- Alarm function of exceeding the upper / lower limit.

TM4830B

Fluxgate Magnetometer

TM4830B is a portable, multi-functional weak field measuring instrument, which can be matched with fluxgate sensors of various specifications and measurement ranges, including single-axis and three-axis fluxgate sensors, which can measure the weak magnetic field.

- Measuring Range: 0~ 2000 μT, various of probes are optional.
- Measure XYZ component value, vector value and angle.
- Mainframe voltage measurement up to Class 0.005.
- 0.0015 % for the ultra-high precision version.
- The noise of the low noise version is typically < 6 pTrms /√Hz.
- Switch 6 / 7 / 8-digits, display.
- AC or DC mode, and AC frequency display.
- The integration period (refresh rate): 0.5s to 100s.
- High-accuracy probes support temperature compensation.

TM7100

Handheld Flux Meter

TM7100 is a portable measuring instrument, designed with a high speed microprocessor and a low drift electronic integrator. It's applied for measuring spatial magnetic field or permanent magnet flux Φ with types of coils.

- Measuring range: 0.2 mWb ~ 2 Wb.
- Accuracy: Class 1 or 2.
- Drift after zeroing ≤ 2 μWb/min
- 4-digits display, minimum resolution 1 μWb
- Unit switch: mWb, Mx
- Max value hold function
- One-key reset and zero drift
- Display support back-light and battery power.

TM7500

Flux Meter

TM7500 is a high-precision magnetic flux measuring instrument, designed with a high-speed microprocessor and a low-drift electronic integrator. It's applied for measuring the magnetic flux Φ of space magnetic fields or permanent magnets with types of coils.

- Measuring Range:0.2 mWb ~ 2 Wb.
- Accuracy: class 0.2 or 0.5.
- Drift after zeroing ≤ < 1 μWb/min.
- 5-digits display, minimum resolution 0.1 μWb.
- Unit switch: Wb, mWb, Vs, mVs, Mx.
- Maximum hold function.
- Alarm of exceeding the upper / lower limit.

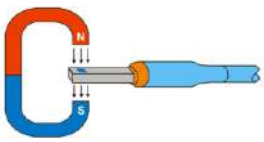
TM1100 / TM1110 / TM1130

Hall Probe

Uniaxial Radial Hall Probe

Uniaxial Axial Hall Probe

Triaxial Hall Probe



Schematic Diagram of Radial Probe

Axial Probe

- **Radial (transverse) Probe:** usually rectangular, the test area is usually the side of the front, suitable for measuring the surface magnetic field density of permanent magnets, magnetic remanence of mechanical parts, DC constant magnetic field, etc.
- **Axial Probe:** usually cylindrical, the test area is the top, suitable for measuring the magnetic field generated by a solenoid or toroidal coil, and scanning the surface magnetic distribution.
- **Triaxial Probe:** suitable for measuring the three-dimensional magnetic field, scanning the AC magnetic field in space, monitoring environment magnetic field of the laboratory, etc.

TM1200 / TM1230

Fluxgate Probe

- Can be connected with a fluxgate magnetometer to measure the low magnetic field in space.
- TM1200 is a uni-axial fluxgate probe and TM1230 is a triaxial fluxgate Probe.
- Types: micro probe, high-precision standard probe, high-precision low-noise probe, ultra high-precision standard probe and ultra high-precision low-noise probe.

TM2000 / TM2030

Precision Current Source

TM2000 / TM2030 is a series of precision excitation current sources with high precision, high resolution regulation, high stability and other characteristics. It can be used as excitation power supply of field generator such as Helmholtz coil and solenoid to generate standard magnetic field. It's applied for the influence test of materials, devices and instruments or the calibration of magnetic sensors and other applications.

- Single or three channel output are optional.
- The current can be output in both positive and negative directions to generate positive and negative magnetic fields.
- Optimal short-term stability is 20ppm/min.
- Open loop or closed loop two test modes.
- Open loop can set current or magnetic field value output.
- Closed loop can realize feedback measurement with magnetic sensor.
- Support a variety of value setting and adjustment.
- Support cascaded expansion of current or power output.

TM2300 / TM2330

Helmholtz Coil

TM2300 / TM2330 is a series of Helmholtz coils. The generated magnetic field has good linearity with the current, and the standard DC magnetic field can be generated with the precise excitation current source.

- Calibration of magnetic sensors
- Calibration of magnetometers
- Electromagnetic interference simulation experiments
- Magnetic field influence experiments

One-dimensional Coil

Three-dimensional Coil

TM2400

Solenoid

TM2400 is a series of solenoids, which can be used as a magnetic field generator to match with a precision excitation current source to generate a DC standard magnetic field.

- Open-circuit magnetic sample detection
- Calibration of a magnetic sensor
- Traceability calibration of the magnetometer
- Electromagnetic interference simulation experiment
- Magnetic field influence test

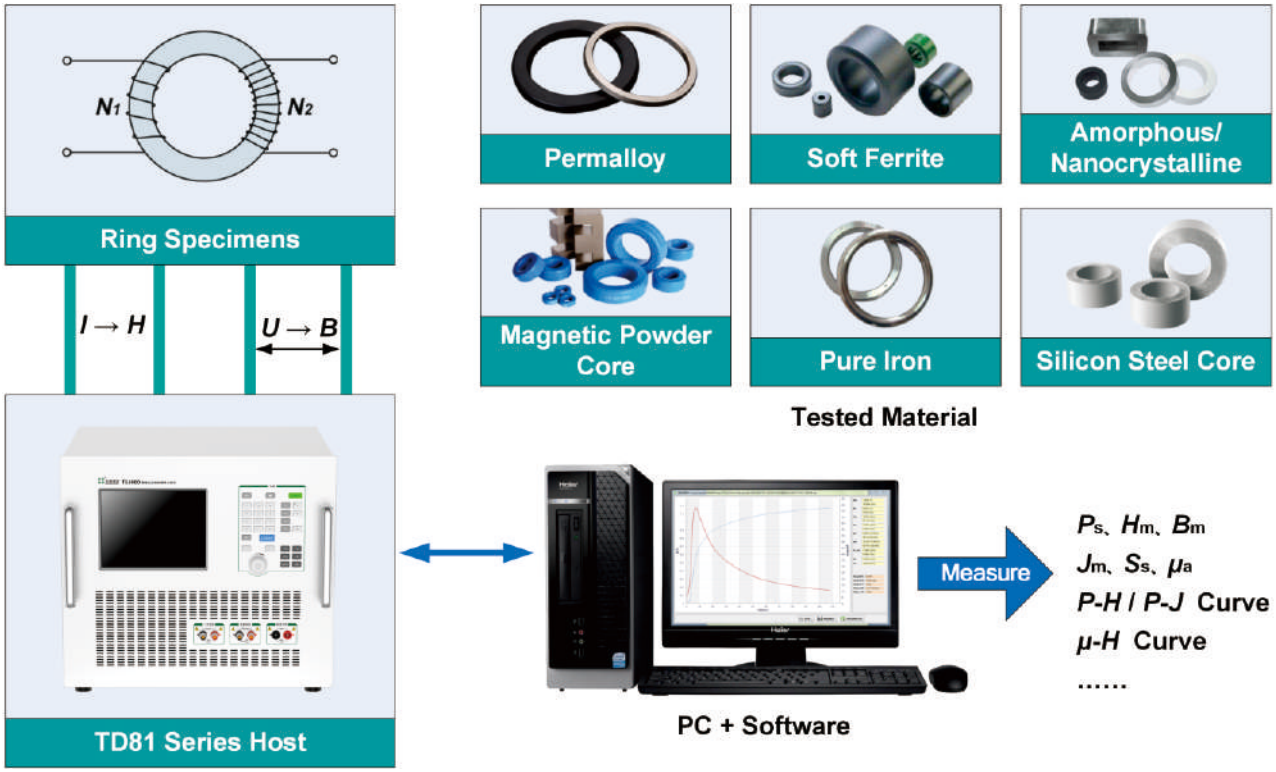
Magnetic Material Testing Equipment

TD81 SERIES

AC Magnetic Properties Measuring System for Soft Magnetic Materials

TD81 Series is AC Magnetic Properties Measuring System for Soft Magnetic Materials. The product design conforms to the standard IEC 60404-6. These series instruments cover frequency range from 20 Hz up to 1 MHz, depending on the selected model. It used for testing the AC magnetic properties and curves of ring core specimen.

- Electrical parameters calibration function.
- Testing mode: setting H to measure B or setting B to measure Ps.
- Testing in full frequency range with good accuracy and repeatability.
- Automatically testing with professional software.
- Automatically calculating magnetic parameters and curves.
- Complete curves drawing and data management functions.
- Modular design, easy to upgrade or maintenance.

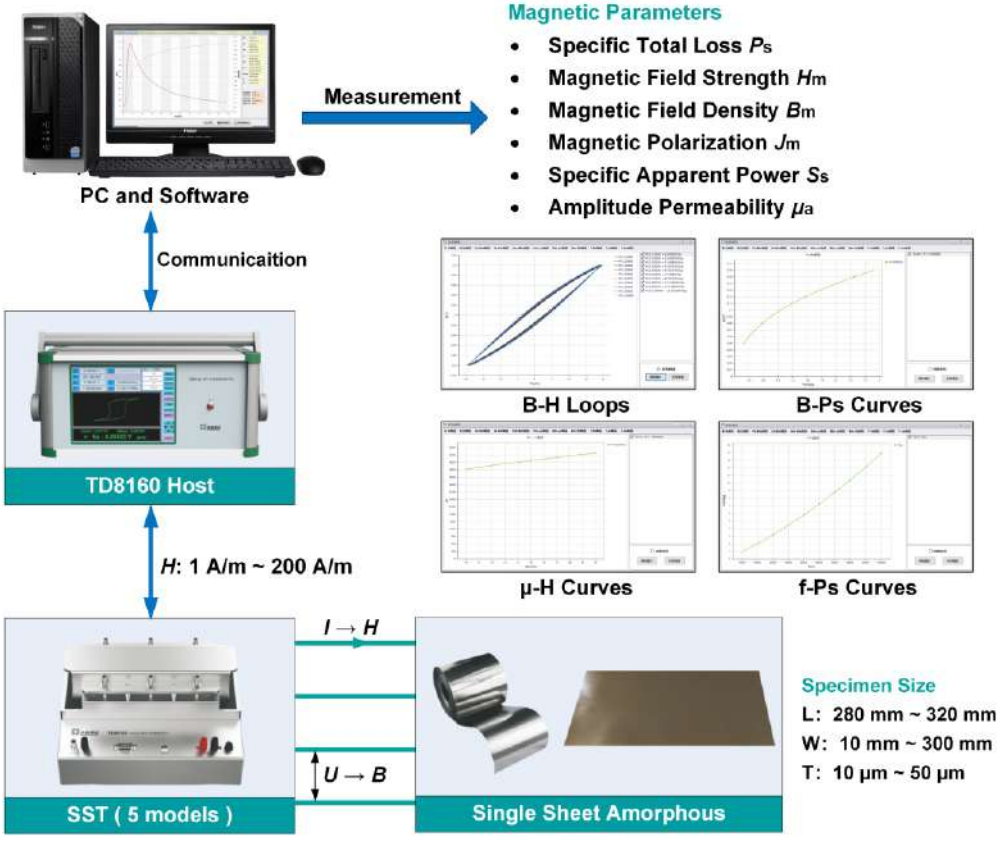


TD8160

Magnetic Properties Measuring System for Single Sheet Amorphous

TD8160 consists of excitation and measurement host, single sheet tester and computer software, etc. The product design conforms to the standard IEC 60404-16-2018. Testing frequency from 45 Hz to 65 Hz (400 Hz is customizable). It used for testing the AC magnetic properties amorphous or Nano crystalline single sheet.

- Electrical parameters calibration function.
- Testing mode: setting H to measure B or setting B to measure Ps.
- Testing in full frequency range with good accuracy and repeatability.
- Automatically testing with professional software.
- Automatically calculating magnetic parameters and curves.
- Complete curves drawing and data management functions.
- Modular design, easy to upgrade or maintenance.
- SST is designed as double yoke structure.
- Various models of SST are optional, depending on specimen width.



TS4000

DC Magnetic Properties Measuring System for Soft Magnetic Materials

TS4000 is DC magnetic properties measuring system for soft magnetic materials. The product design conforms to the standard IEC 60404-4, IEC 60404-7. The complete system contains DC excitation and measurement host , Type A or B Permeameter (optional accessories), solenoid (optional accessories), electromagnet (optional accessories), testing software.

- Electrical parameters calibration function.
- The specimen is demagnetized using slow amplitude reduction.
- Ultra-wide range of current continuously and stably adjustment.
- Scanning method doesn't use relay to switch current range.
- Support scanning and impact testing method.
- A /B Permeameter (optional): apply for open-circuit specimen testing.
- Solenoid (optional): apply for Hc of specimen testing.
- Modular design, easy to upgrade or maintenance.
- Software auto testing.

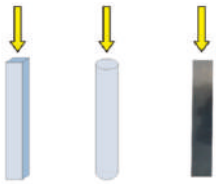
TS7710

Type A / B Permeameter

TS7710-A Type A Permeater

TS7710-B Type B Permeater

Pole shoe

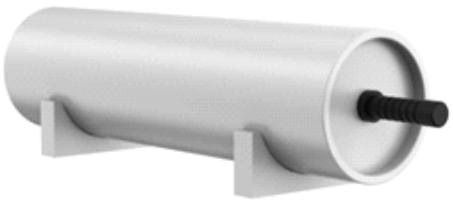


Bar Cylinder Sheet

- It's applied for testing open-circuit specimen such as bar, cylinder, strip.
- Bar specimen cross section: round (Φ10mm), square (10mm×10mm).
- Sheet specimen: sheet or strip (width 30 mm).
- Users can customize magnetic pole piece according to specimen shape.
- Applicable system: TS4000, TS5300, TS1000, TS1300.

TS7750

Solenoid

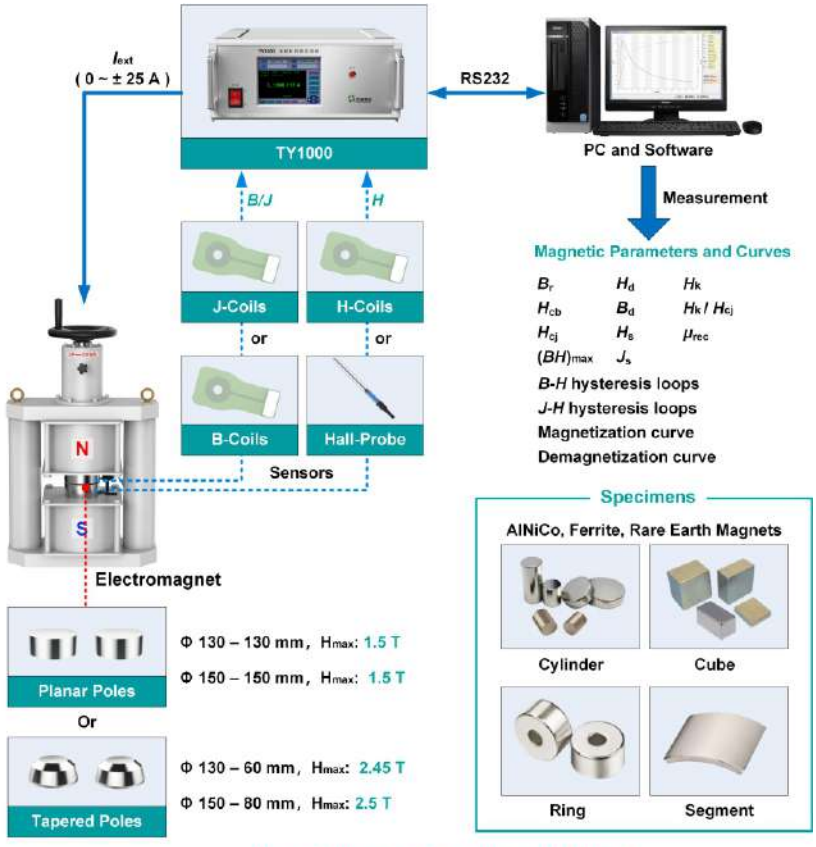


- It's applied for testing open-circuit specimen such as bar, cylinder, strip.
- It's also suitable for generating standard magnetic fields.
- Single solenoid, double solenoid, and fluxgate solenoid are optional.
- The fluxgate solenoid enables automatic measurement.
- Applicable system: TS4000, TS5300, TS1000, TS1300.

TY1000

Magnetic Properties Measuring System for Hard Magnetic Materials

TY1000 design conforms to the standard IEC 60404-5, IEC TR 61807:1999. It consists of excitation and measurement host, electromagnet, magnetic measurement sensors, computer software, etc. It is suitable for measuring the magnetic properties of various types of hard magnetic materials and drawing hysteresis loops and curves. TY1000 has the advantages of convenient operation, fast measurement, good repeatability and high reliability.



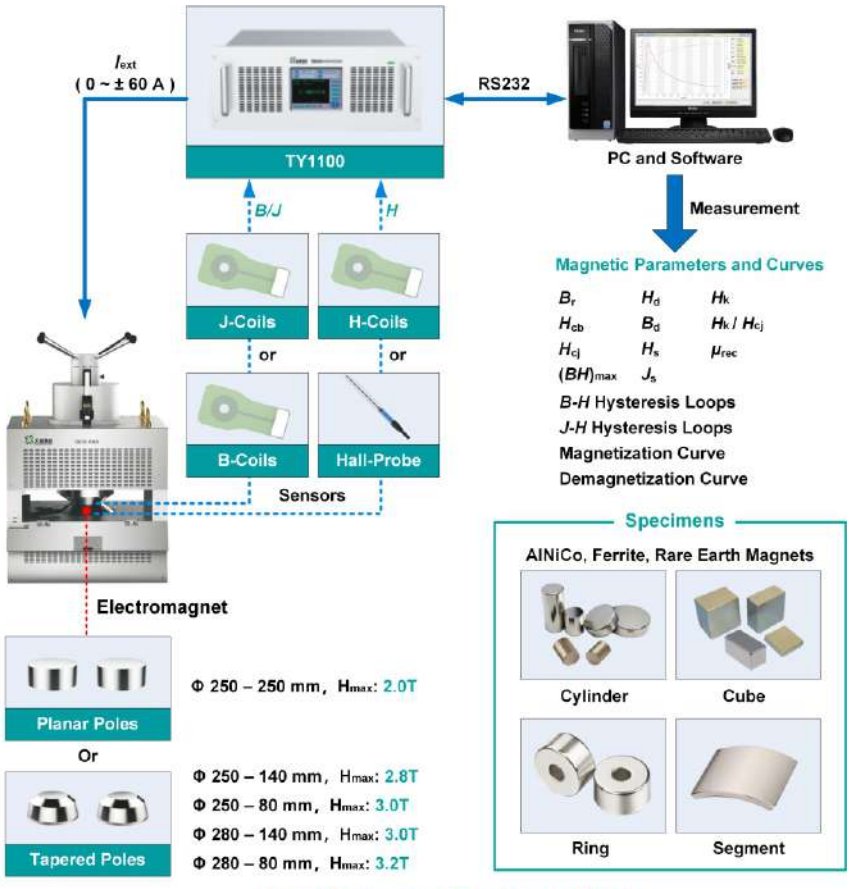
Room Temperature Measurement Solution

High Temperature Measurement Solution (optional)

TY1100

Magnetic Properties Measuring System for Hard Magnetic Materials

TY1100 design conforms to the standard IEC 60404-5, GB/T 3217-2013. It consists of excitation and measurement host, electromagnet, magnetic measurement sensors, computer software, etc. It is suitable for measuring the magnetic properties of various types of hard magnetic materials and drawing hysteresis loops and curves.



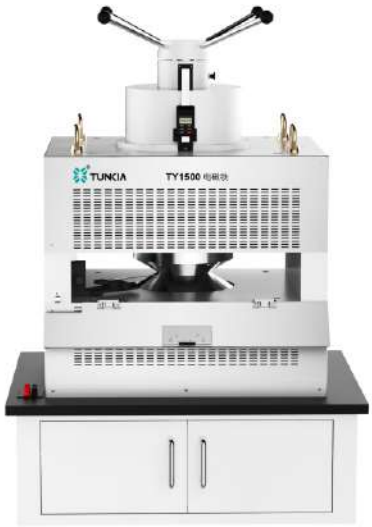
Room Temperature Measurement Solution

High Temperature Measurement Solution (optional)

TY1500

Electromagnet

TY1500 electromagnet can install different specifications of pole heads and excite with DC current source. It can produce a large and continuously adjustable magnetic field, with good uniformity and linearity. The electromagnet can be used as an excitation device for permanent magnet samples, to detect their magnetic properties. TY1500 electromagnet has a low input power / magnetic field, and features low carbon, environmental protection and energy-saving.



- Various of poles are available on request.
- Electromagnet excited by current source generates large magnetic field.
- Use for testing magnetic properties of hard magnetic materials.
- Natural cooling, without external water cooler for heat dissipation.
- Automatic lifting poles function is optional(only 250 mm or 280 mm poles).

TY1550

Pole of Electromagnet

TY1550 is usually used as an accessory of the electromagnet and installed inside it. And excited by a stable DC current source, it can generate a large area of uniform magnetic field at the center of the two pole faces. It can be used for magnetization and demagnetization of permanent magnet specimen, magnetic property testing, and magnetic field calibration with a standard Tesla meter.

Planar poles

Heating poles

Tapered poles

Segment poles

- Poles are accessories installed in electromagnet.
- Excited by current source generates large magnetic field.
- Use for testing magnetic properties of hard magnetic materials.
- The pole diameter of planar pole is equal to its pole face diameter.
- The pole diameter of tapered pole is larger than its pole face diameter.
- Heating poles can be heated by TY1900 Specimen Heating Device.
- Thermocouples are inserted in the heating poles for temperature measurement.
- Segment poles need to customized according to the specimen.

TY1700

Search Coils

TY1700 can be used as an accessory of the permanent magnet material testing system. Users can choose coils of different sizes or high-temperature coils according to testing requirements. The turn area of the coil is calibrated by a high class magnetic measurement standard.

- Search Coils are accessories of magnetic properties measuring system for hard magnetic materials such as TY1100 or TY1100.
- Search Coils used for measurement of the magnetic field strength H or magnetic field density B or magnetic polarization J.
- Including H-coils, B-coils, J-coils, BH-coils and JH-coils.
- Select proper coils according to the specimen size or testing requirement.

TY1900

Specimen Heating Device

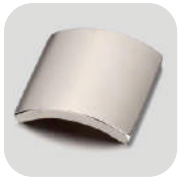
TY1900 is a device used for heating the poles of electromagnet. It can be combined with TY1000 or TY1100 to form permanent magnet comprehensive testing system, for measuring the magnetic properties of hard magnetic materials at high temperature.

- Max. temperature is up to 220℃, and heating time is short.
- Dual-channel for heating 2 poles of electromagnet.
- Thermocouples are inserted in poles for temperature measurement.
- High stability, small size, easy to operation.
- Various of heating poles and HT coils are available.

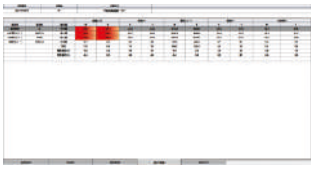
TY2000

Surface Magnetic Field Automatic Testing System

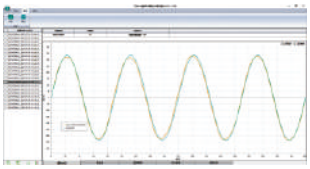
TY2000 is a special equipment for measuring the magnetic field distribution of permanent magnet materials and motor rotor surface. It can measure surface magnetic parameters and draw surface magnetic curve of ring specimens, including X-Y rectangular magnetic field distribution diagram, polar coordinate magnetic field distribution diagram, three-dimensional magnetic field distribution diagram, etc.



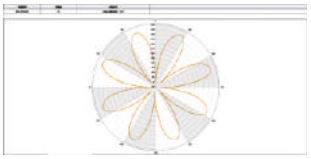
- Measuring Ring Specimens :
- It can test cylindrical permanent magnets, multi-pole magnetic rings, magnetic tiles, small motor rotors, etc.



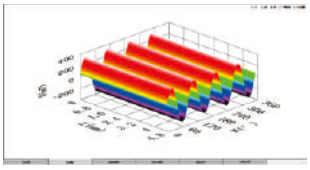
Test Result Statistical Data



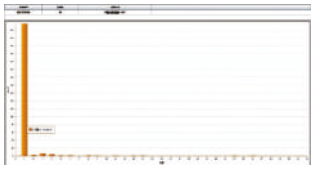
Test Results and Magnetic Field Curve



Test Results and Polar Coordinate Graph



3D Distribution Maps of Surface Magnetism



Harmonic Analysis Graph

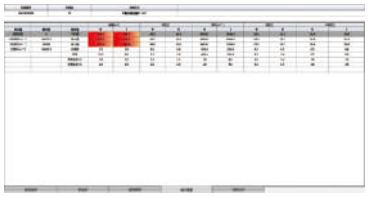
TY2100

Surface Magnetic Field Automatic Testing System

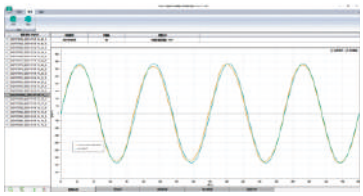
TY2100 is a special equipment for automatically measuring the magnetic field distribution of permanent magnet materials and motor rotor surface. It can automatically scan specimens surface in three-dimensional and calculate the surface magnetic field distribution.

- Measuring Ring Specimens :
- It can test cylindrical permanent magnets, multi-pole magnetic rings, magnetic tiles, small motor rotors of different sizes, etc.

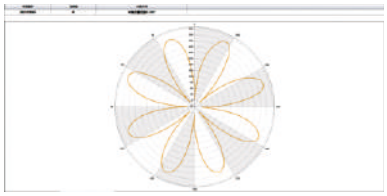
Automatic Test Software



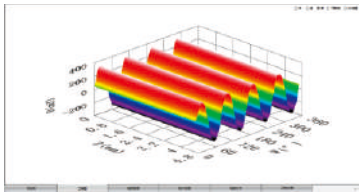
Test Results Statistical Data



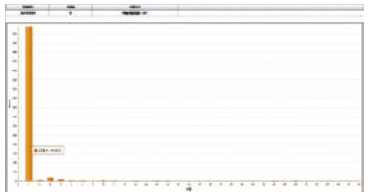
Test Results and Magnetic Field Curve



Test Results and Polar Coordinate Graph



3D Distribution Map of Surface Magnetism



Harmonic Analysis Graph

TY3000

Magnetic Moment Tester

TY3000 is a precision magnetic moment measuring instrument. It is designed with a high-speed microprocessor and a low-drift electronic integrator. It can be used with various specifications of magnetic moment measurement coils to measure the magnetic moment M and magnetic flux Φ of magnetic parts such as permanent magnet materials, aluminum-nickel-cobalt, neodymium-iron-boron, and samarium-cobalt. Reference standard: IEC 60404-14:2002 “Methods of measurement of the magnetic dipole moment of a ferromagnetic material specimen by the withdrawal or rotation method”

- Measuring Range: 0.2mWb ~ 2 Wb.
- Accuracy: Class 0.2, Class 0.5.
- Minimum Resolution: 0.1 μWb (range: 2mWb)
- The drift after zero adjustment is very small, < 1 μWb/min.
- 5 Digit Display, the minimum resolution < 0.1 μWb.
- Optional units: Wb, Vs, Wb·cm, Vs·cm.
- Automatically calculate the magnetic moment M according to the coil constant.
- Support digital and analog signal (option) output mode.

TY3100

High-precision Magnetic Moment Tester

TY3100 is a high-precision magnetic moment measuring instrument. It is designed with a high-speed microprocessor and a low-drift electronic integrator. It can be used with various specifications of magnetic moment measurement coils to measure the magnetic moment M and magnetic flux Φ of magnetic parts such as permanent magnet materials, aluminum-nickel-cobalt, neodymium-iron-boron, and samarium-cobalt. Reference standard: IEC 60404-14:2002 “Methods of measurement of the magnetic dipole moment of a ferromagnetic material specimen by the withdrawal or rotation method”

- Measuring Range: 0.0Wb ~ 99999 Wb.
- Accuracy: Class 0.1, Class 0.05.
- Minimum Resolution: 10nWb
- The drift after zero adjustment is very small, < 0.5 μWb/min (Class 0.05)
- Optional units: Wb, Vs, Wb·cm, Vs·cm.
- Support coil resistance input to eliminate the influence on the measurement.
- Automatically calculate the magnetic moment M according to the coil constant.
- Support digital and analog signal (option) output mode.

TY3300

Magnetic Declination Tester

TY3300 is a system dedicated to measuring the magnetic declination of permanent magnet materials. It is suitable for measuring three magnetic flux components of permanent magnet materials on the XYZ axis: ΦX, ΦY, ΦZ, and automatically calculates the magnetic moments MX, MY, MZ, total magnetic moment M, and magnetic declination α of the three-axis components.Reference standard: IEC 60404-14:2002 “Methods of measurement of the magnetic dipole moment of a ferromagnetic material specimen by the withdrawal or rotation method”

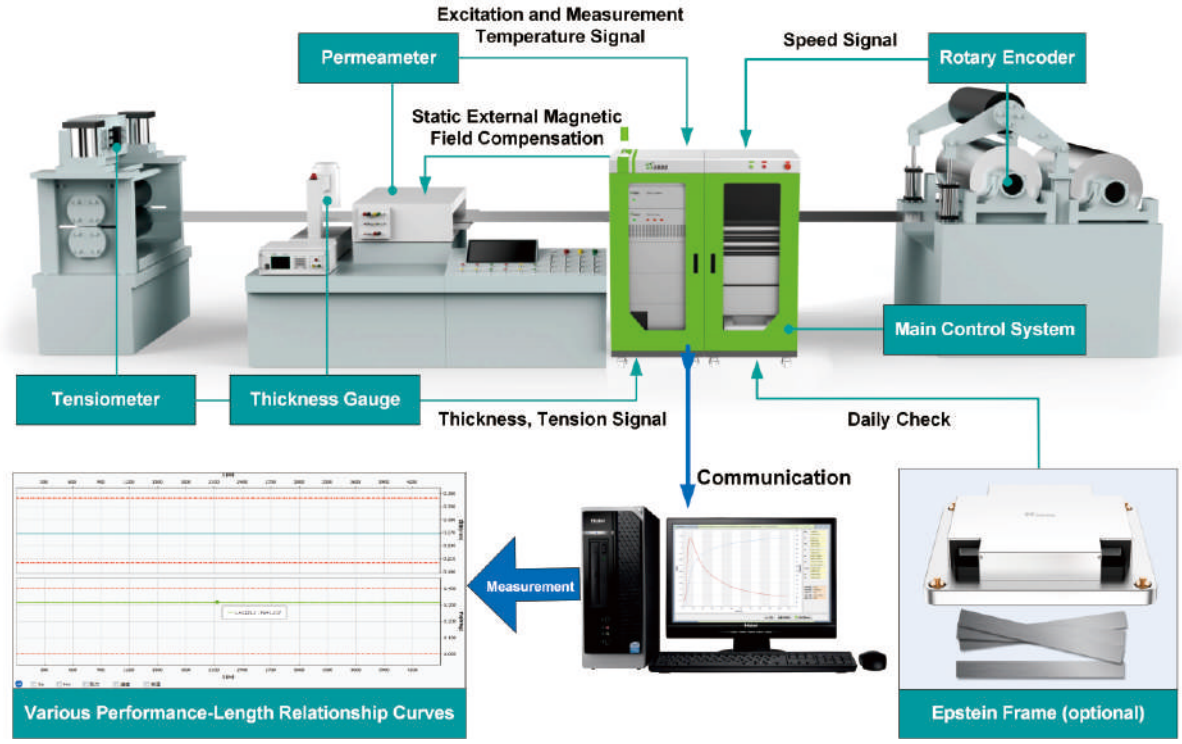
- Measurement range: 0.2 mWb ~ 1 Wb
- The drift after zero adjustment is very small, < 1μWb/min.
- 5 Digit Display, the minimum resolution < 0.1 μWb.
- Measuring XYZ axis magnetic flux vector components and composite values.
- Each Helmholtz coil is equipped with a movable loading slider.
- Optional units: Wb, Vs, Wb·cm, Vs·cm.
- Automatically calculate the total magnetic moment and component magnetic moment according to the set coil constant.
- Support digital and analog signal output.

Electrical Steel Testing Equipment

TD9100

Online Testing System for Magnetic Properties of Silicon Strip

TD9100 is a system dedicated to online real-time testing of magnetic properties of cold-rolled silicon steel. Through rapid magnetization and measurement of steel strips running on the production line, combined with real-time collected thickness, speed, stress and other signals, it is converted into iron loss, Measurement results of magnetic field strength, magnetic flux density, etc. 7*24-hour automatic uninterrupted detection provides accurate and effective testing and evaluation help steel mills to carry out quality control, model selection, and improvement of process level.

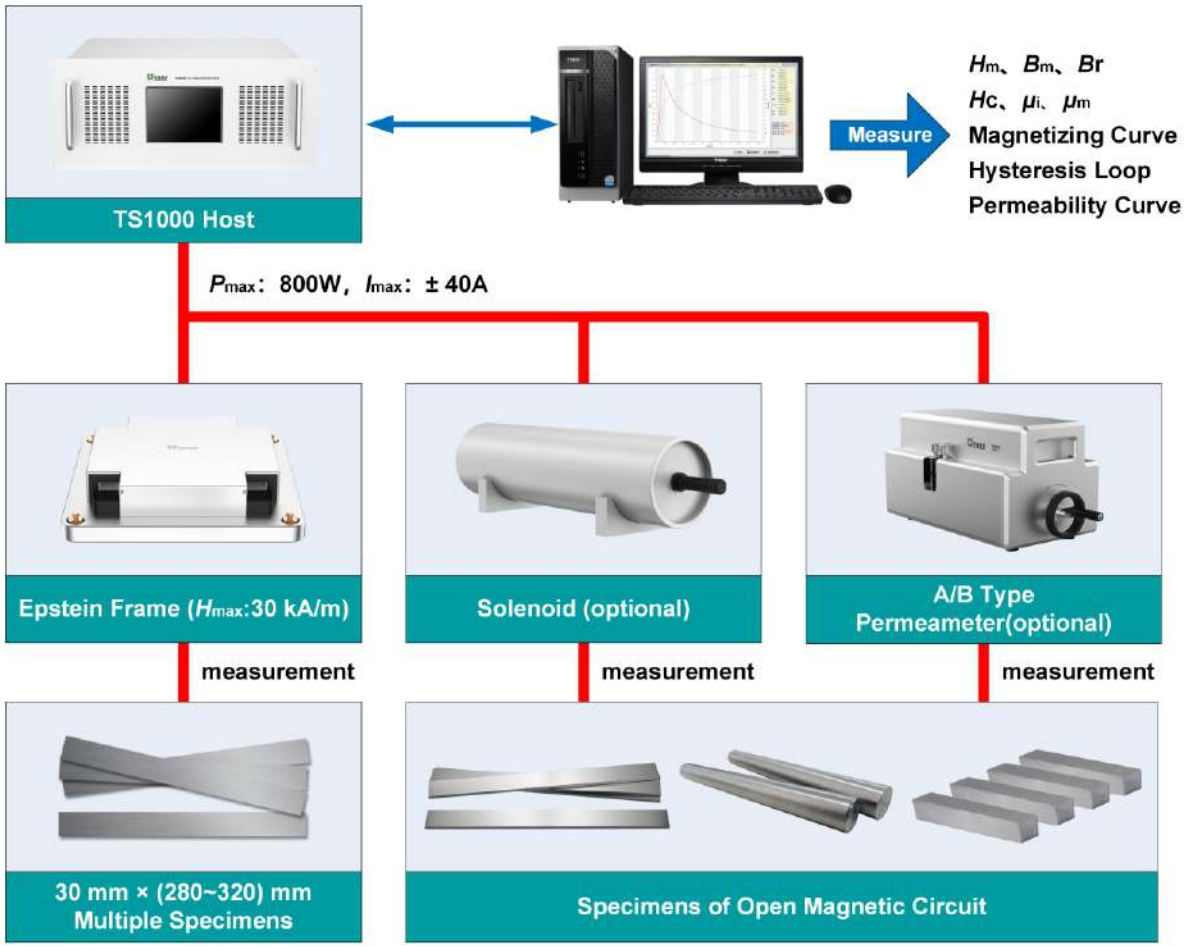


- The measurement of magnetic field strength has two options: current method (M.C method) and magnetic field coil method (H-Coil method).
- The iron loss measurement cycle is shortened to 100 ms.
- lTesting Ps or Bm of steel strip, and drawing hysteresis loop, P-L or δ-L curves.
- The software can set the upper and lower limits of loss or thickness, and the test data will give a warning if the test data exceeds the limit.
- Standard square ring can be configured for daily verification of instrument loss, magnetic field strength, and magnetic flux density measurement accuracy.

TS1000

DC Magnetic Properties Measuring System for Electrical Steel

TS1000 is a special instrument for measuring the DC magnetic properties of electrical steel. It consists of excitation and measurement host, Epstein frame, solenoid (optional), A/B type Permeameter(optional), computer software, etc. It is suitable for comprehensive analysis of DC magnetic characteristics of electrical steel.

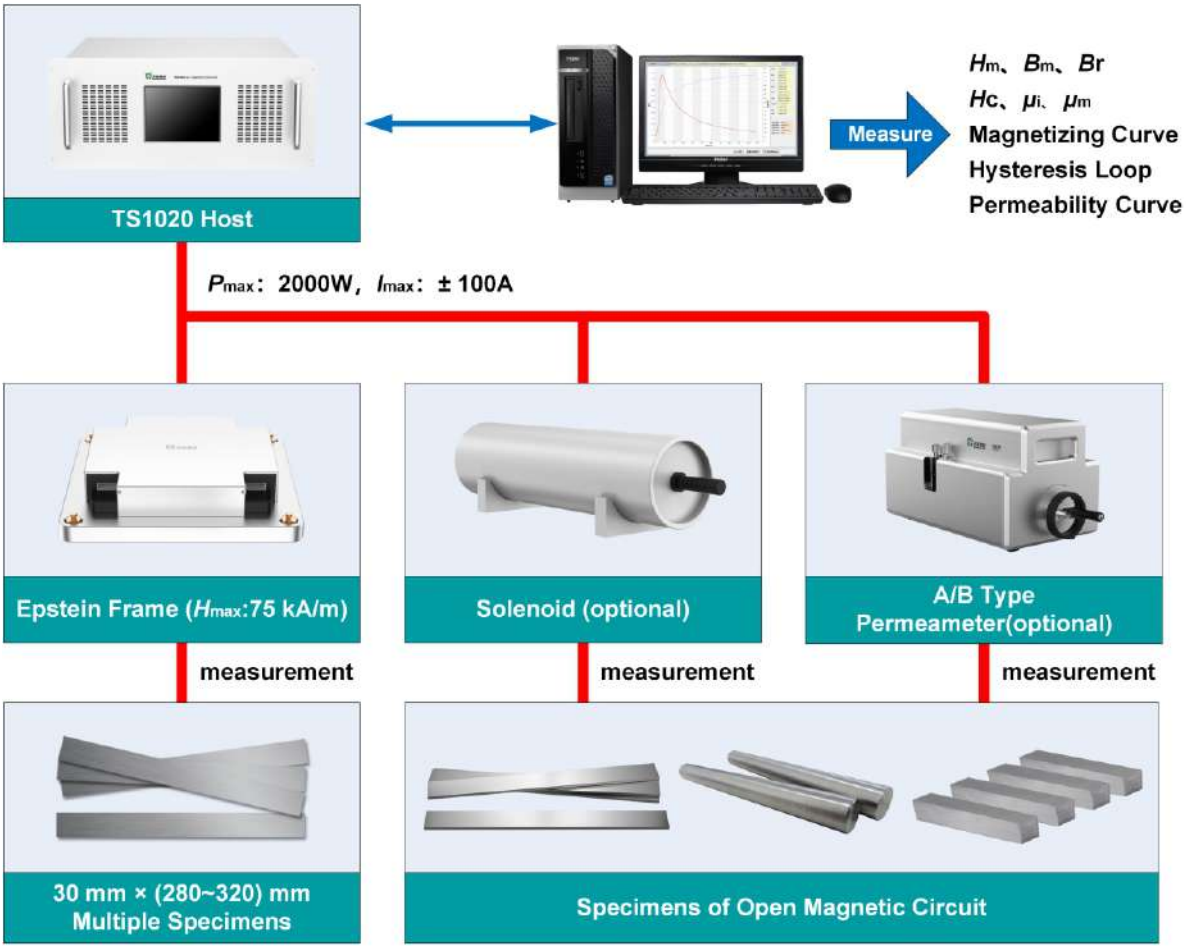


- Electrical parameters calibration function.
- Maximum magnetization field reaches 30 kA/m (700 T Epstein frame).
- Slowly reduce amplitude demagnetization for specimen.
- Ultra-wide range of current continuously and stably regulated.
- Software controlled automatic measurement.
- Automatic calculates magnetic parameters and curves.
- Modular design, easy to upgrade or maintenance.

TS1020

DC Magnetic Properties Measuring System for Yoke Steel

TS1020 is a special instrument for measuring the DC magnetic properties of yoke steel. It consists of excitation and measurement host, Epstein frame, solenoid (optional), A/B Type Permeameter(optional), computer software, etc. It is suitable for comprehensive analysis of DC magnetic characteristics of yoke steel.

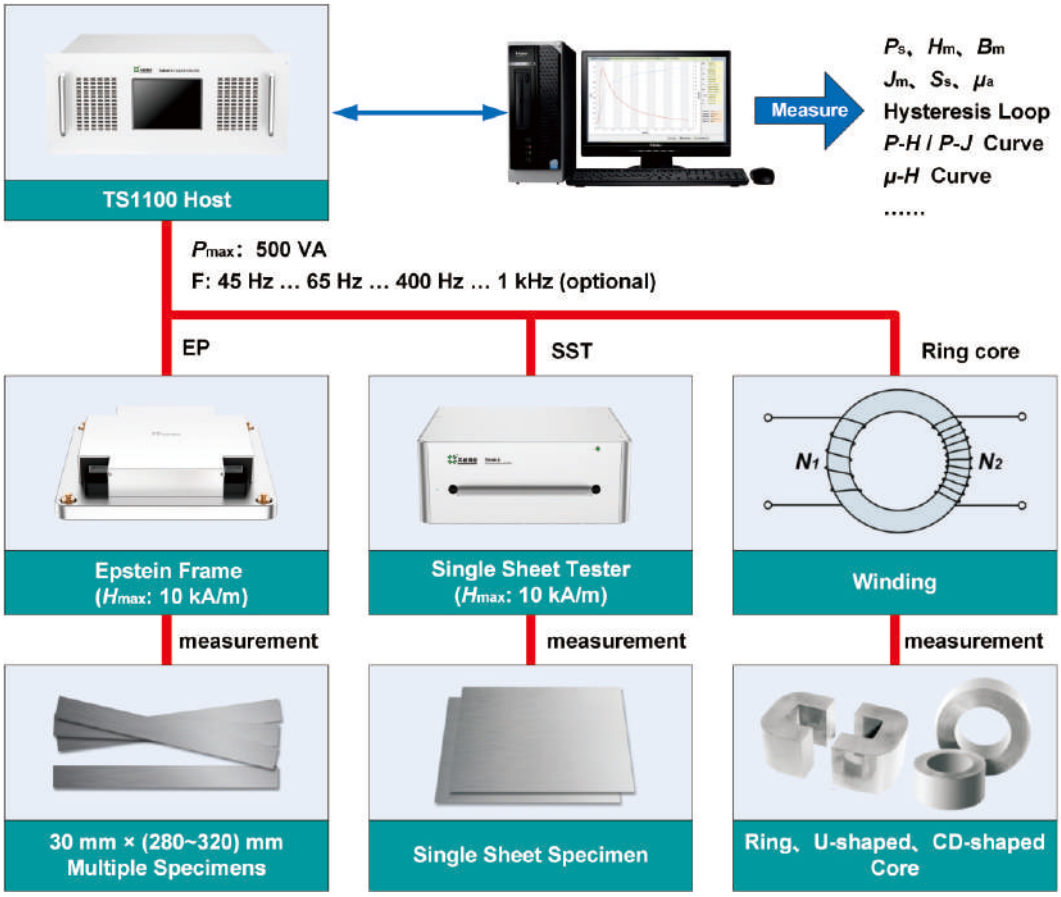


- Electrical parameters calibration function.
- Maximum magnetization field reaches 75 kA/m (700 T Epstein frame).
- Slowly reduce amplitude demagnetization for specimen.
- Ultra-wide range of current continuously and stably regulated.
- Software controlled automatic measurement.
- Automatic calculates magnetic parameters and curves.
- Modular design, easy to upgrade or maintenance.

TS1100

AC Magnetic Properties Measuring System for Electrical Steel

TS1100 is a special instrument for measuring the AC magnetic properties of electrical steel. It consists of excitation and measurement host, Epstein frame, Single Sheet Tester (optional), computer software, etc. It is suitable for comprehensive analysis of AC magnetic characteristics of electrical steel or core.

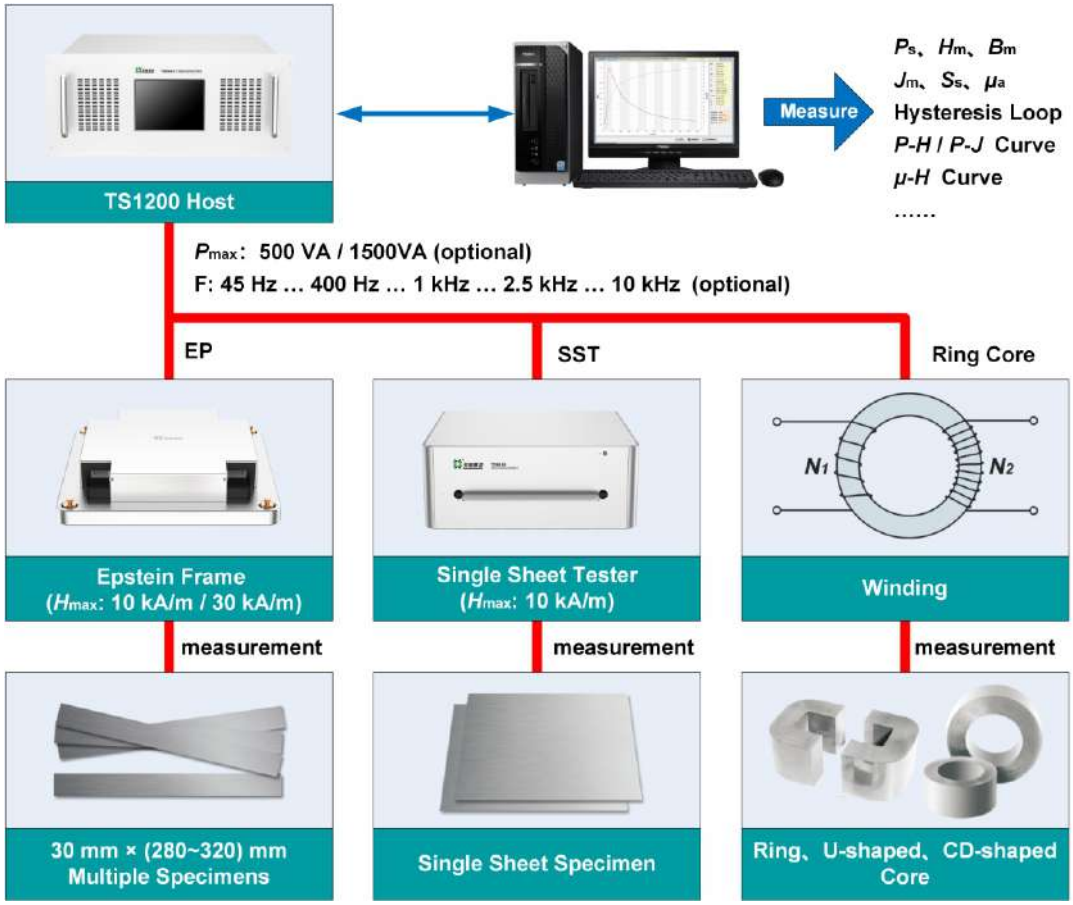


- Electrical parameters calibration function.
- Measurement Frequency Range: 45Hz~1kHz
- Measurement of magnetic field by M.C.
- Maximum magnetization field reaches 10 kA/m (700 T Epstein frame).
- Slowly reduce amplitude demagnetization for specimen.
- Software controlled automatic measurement.
- Automatic multi-point measurement.
- The software has been configured with multiple measurement schemes
- Automatic calculates magnetic parameters and curves.

TS1200

AC Magnetic Properties Measuring System for Electrical Steel

TS1200 is a special instrument for measuring the AC magnetic properties of electrical steel. It consists of excitation and measurement host, Epstein frame, Single Sheet Tester (optional), computer software, etc. It is suitable for comprehensive analysis of AC magnetic characteristics of electrical steel or core.

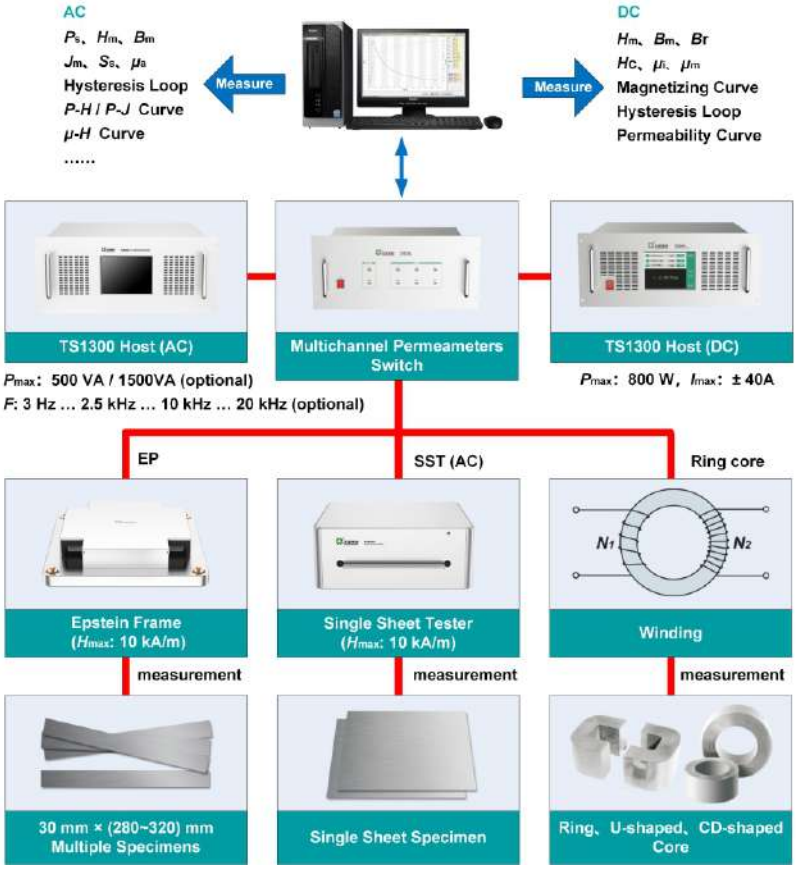


- Electrical parameters calibration function.
- Measurement Frequency Range: 45Hz~10kHz
- Measurement of magnetic field by M.C and H-Coil (optional).
- Maximum magnetization field reaches 30 kA/m (700 T Epstein frame).
- 2 ~ 63 harmonics influence measurement (optional).
- Slowly reduce amplitude demagnetization for specimen.
- Software controlled automatic measurement.
- Automatic multi-point measurement.
- Automatic calculates magnetic parameters and curves.

TS1300

AC/DC Magnetic Properties Measuring System for Electrical Steel

TS1300 is a special instrument for measuring the AC/DC magnetic properties of electrical steel. It consists of excitation and measurement host (AC and DC), Epstein frame, Single Sheet Tester (optional), computer software, etc. It is suitable for comprehensive analysis of AC magnetic characteristics of electrical steel or core.



- Electrical parameters calibration function.
- Measurement of magnetic field by M.C and H-Coil (optional).
- Maximum magnetization field reaches 30 kA/m (700 T Epstein frame).
- The maximum frequency can be selected to 20kHz.
- 2 ~ 63 harmonics influence measurement (optional).
- The software has been configured with multiple measurement schemes.
- Automatic multi-point measurement.
- Ultra-wide range of current continuously and stably regulated.
- Switch the Permeameter by software without repeated wiring.

TS2000

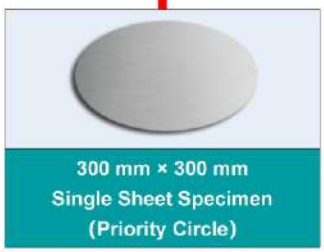
Rotational Magnetic Properties Measuring System for Electrical Steel

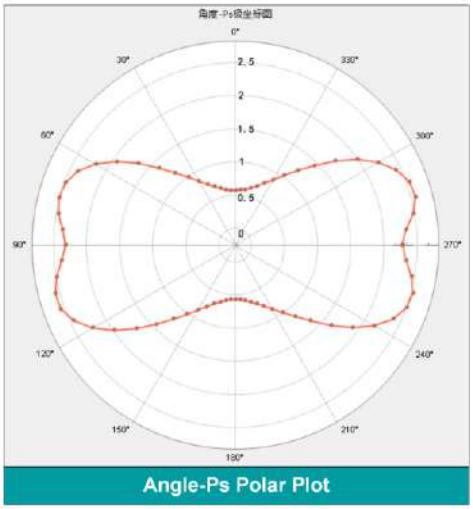
TS2000 is a special instrument for measuring orientation (full angle) magnetic properties of electrical steel sheet. The magnetic properties of the specimens can be measured within a certain frequency range from 0° to 360°.

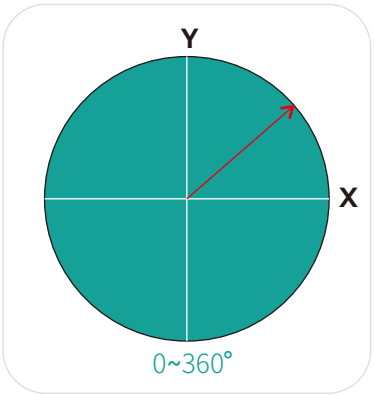
SST

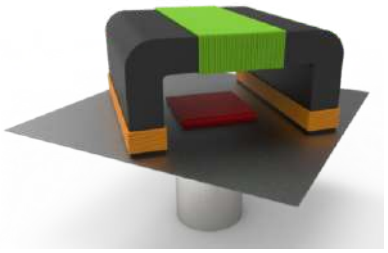
measurement

measurement







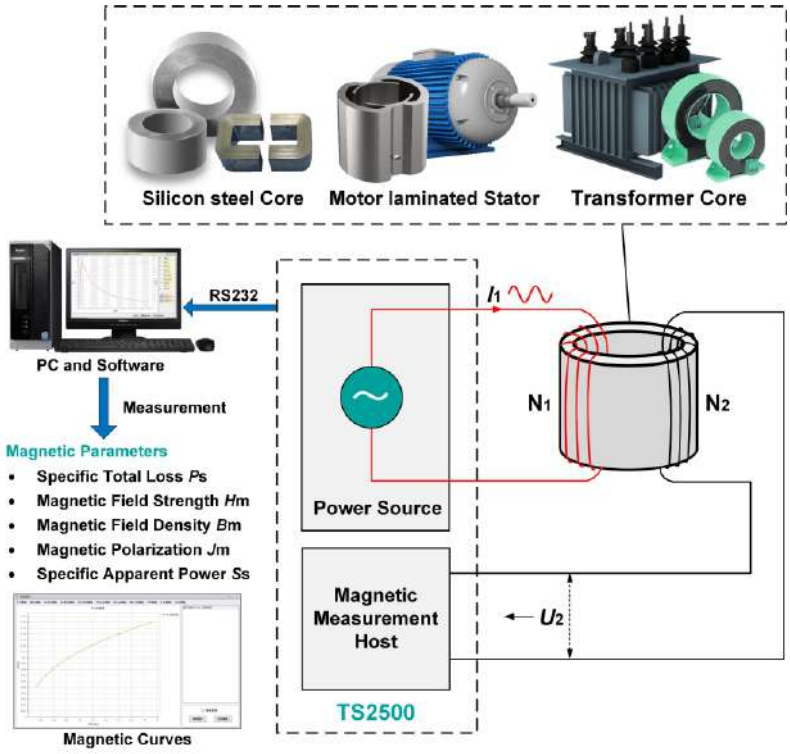


- Electrical parameters calibration function.
- Operators only need to insert a single specimen into the Permeameter to test.
- Measurement of magnetic field by M.C and H-Coil
- Slowly reduce amplitude demagnetization for specimen.
- Software controlled automatic measurement.
- The software has been configured with multiple measurement schemes
- Automatic calculates magnetic parameters and curves.
- Modular design, easy to upgrade or maintenance.

TS2500

Magnetic Properties Measuring System for Electrical Steel Cores

TS2500 consists of excitation and measurement host, automatic measurement software. It can automatically measure the iron loss and other magnetic parameters of the motor stator core or other types of electrical steel core within a certain frequency range



- Electrical parameters calibration function.
- Testing frequency: 50Hz or 60Hz (400Hz, 1kHz is optional).
- Testing mode: setting H to measure B or setting B to measure Ps.
- Testing in full frequency range with good accuracy and repeatability.
- Automatically testing with professional software.
- Automatically calculating magnetic parameters and curves.
- Complete curves drawing and data management functions.
- Multi-strand wire is customizable to simplify winding process.

TS2600

Iron Loss Fast Tester for Electrical Steel Sheets

TS2600 is an instrument used to quickly measure the AC magnetic properties of electrical steel sheets. It can quickly measure Ps of electrical steel sheets.

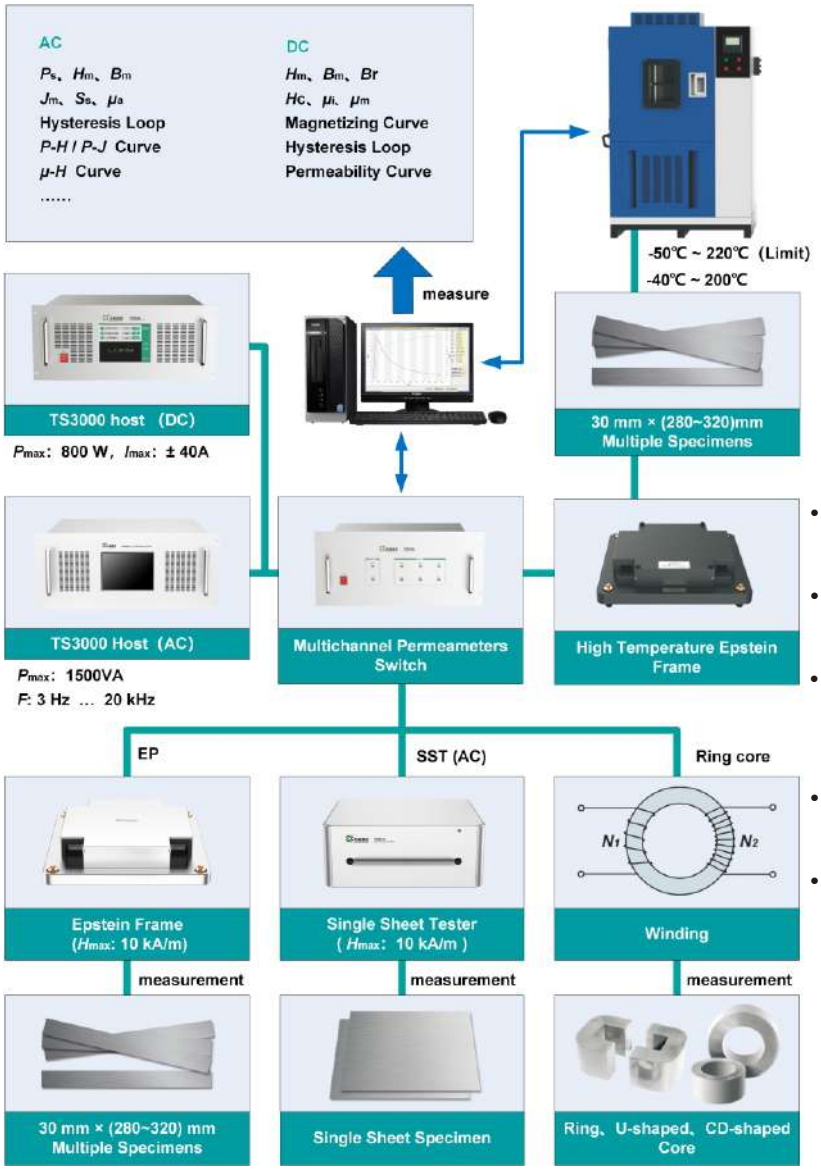
Silicon Steel Sheet
300 mm x 100 mm

- Measurement Frequency Range: 45Hz ~ 400Hz
- It can quickly measure the loss of multiple points.
- It can display a variety of magnetic parameters, including Ps, Jm, Hm.
- The user only needs to press the sheet tester under specimens to measure.
- Supports one-click storage and viewing of measurement data, including test date and time.
- Equipped with large size LCD touch color screen.

TS3000

Magnetic Properties Multifunction Measuring System for Electrical Steel

TS3000 is a special instrument for measuring the AC/DC magnetic properties of electrical steel under different temperature conditions. It consists of excitation and measurement host (AC and DC), several high temperature Epstein frames, single sheet tester (optional), Permeameter program-controlled switching device, temperature controller, automatic measuring software, etc.

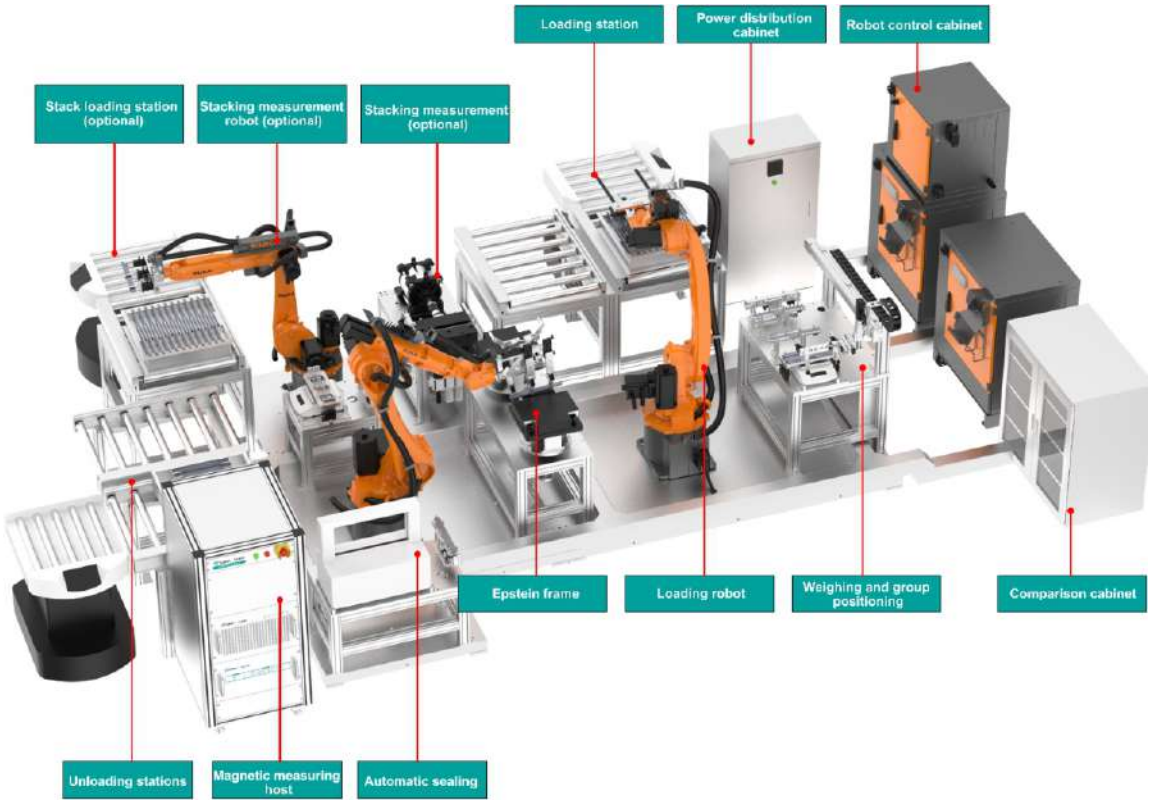


- Electrical parameters calibration function.
- Measurement of magnetic field by M.C and H-Coil (optional).
- Maximum magnetization field reaches 30 kA/m (700 T Epstein frame).
- The maximum frequency can be selected to 20kHz.
- 2 ~ 63 harmonics influence measurement (optional).

TS3200

Electrical Steel Sheet Magnetic Properties Automatic Measurement System

TS3200 is a fully automated measuring system for electrical steel magnetic property frame (EPS) with high degree of automation, high reliability, high efficiency, traceability and easy maintenance. It is compatible with loading, weighing, inserting, Epstein frame magnetic property measurement, stacking coefficient measurement, tape sealing, and unloading, etc. It is a one-stop solution to solve the problem of electrical steel from inspection to device traceability.

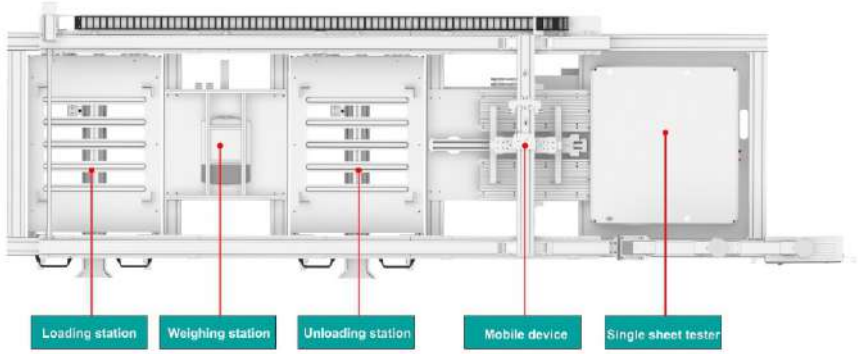


- Fully automatic loading-calibrating-data uploading-unloading.
- Can run 24 hours non-stop.
- Supports AGV, conveyor belt, manual loading.
- Typical measurement speed: 350 pairs/ 24 hours.
- Testing frequency: 40 Hz ~ 1 kHz optional.
- Ensures personal, functional and information security.
- Reliability, fault tolerance, scalability, easy maintenance.
- Data fusion and sharing, data comparability and consistency.
- The device is equipped with calibration interface and calibration operation space.

TS3210

Automatic Measurement System for Magnetic Properties of Electrical Steel Sheets

TS3210 is a fully automatic measurement system for large single piece of electrical steel with magnetic properties (SST) with high automation, high reliability, high efficiency, traceability and easy maintenance. It has the functions of loading, weighing, inserting chips, measuring the magnetic properties of large single chips, and unloading materials. TS3210 is a one-stop solution to the traceability problem of electrical steel from detection to device, and improve the detection capability and efficiency of electrical steel.



- Fully automatic loading-measuring-data uploading-unloading.
- Can run 24 hours a day continuously.
- Normally manual loading is used, but AGV and other loading methods can be customized.
- Typical measurement speed: 16 pieces/hour.
- Ensure personal safety, functional safety, and information security.
- Reliability, fault tolerance, upgradeability, and easy maintenance.
- Data fusion and sharing, data comparability and consistency.
- The equipment has a calibration interface and calibration operation space.
- Optional code reader (optional accessory) enables automatic code scanning.

TS1700

Surface Insulation Resistance Measuring System for Electrical Steel

TS1700 is a special instrument for measuring the insulation resistance of electrical steel sheet. The instrument supports manual turning over to measure the interlayer resistance of electrical steel. The reference standard is IEC60404-11.

Silicon Steel Sheet
(300 mm ~ 500 mm) x 200 mm

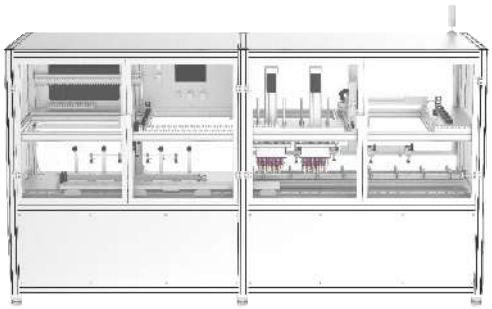
- Built-in DC stabilized power supply and precision current measurement unit, the measurement uncertainty is up to 0.1%.
- It consists of 2 auger bits, 10 metal rods with contacts, and pressure devices.
- It can drive the sample to move back and forth to find multiple different test areas and obtain multiple sets of test data. 1 to 5 groups of test points can be set.
- Equipped with standard resistance circuit board for daily verification of the system.
- Set test parameters through LCD touch screen, observe test status and results, easy to use.

TS1710

Surface Insulation Resistance Automatic Measuring System for Electrical Steel

TS1710 is a special instrument for measuring the surface insulation resistance (single-sided) or interlayer resistance (double-sided) of electrical steel sheets. The reference standard is IEC60404-11.

Silicon Steel Sheet
(1000 mm ~ 1200 mm) x 200 mm



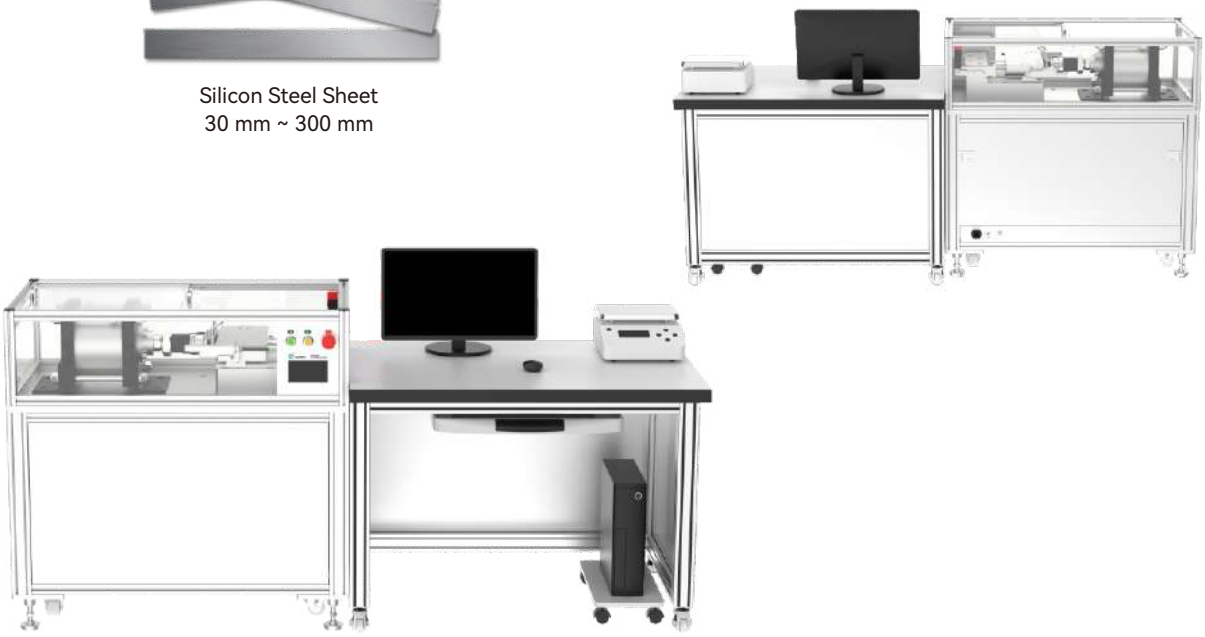
- Fully automatic loading - turning over - testing - data uploading - unloading.
- Automatically measure five different test areas, the front and back sides do not overlap.
- 24 hours of uninterrupted operation.
- The conventional method is manual loading, and AGV and other loading methods can be customized.
- Built-in precision DC stabilized power supply and precision DC current measurement unit.
- Equipped with standard resistance circuit board for daily verification of the system.

TS1780

Stacking Factor Measuring System for Electrical Steel Sheets

TS1780 is a special instrument for measuring the stacking factor of electrical steel sheet. It is mainly composed of precision electronic balances, metal splints, pressure pump, length measuring devices, and computer software. Reference standard: IEC 60404-13, GB/T 19289-2019, ASTM 719/719M, etc.

Silicon Steel Sheet
30 mm ~ 300 mm

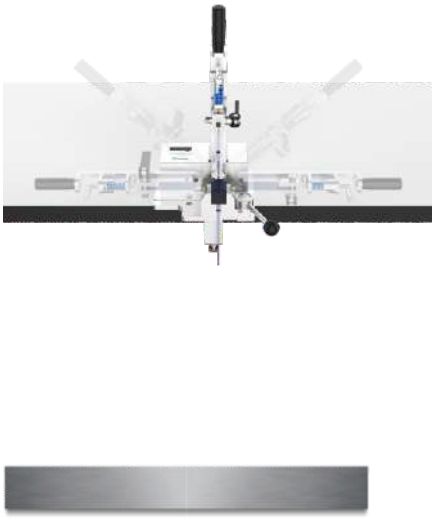


- The pressure pump applies a pressure of about 1Mpa to the stacked specimens.
- Accurately measuring the height of the two diagonal points of the stacked specimens and automatically transmits it to the computer.
- Multiple sets of specimens information can be entered in advance to realize batch testing.
- Measuring the specimens length, width, stacking height, mass, density and other data, and calculating the stacking coefficient f.
- After the software test is completed, the test report can be exported or printed.

TS1800

Bending Testing System for Electrical Steel Sheets

TS1800 is a special instrument for bending testing of electrical steel sheet. It can test the performance of electrical steel sheet under plastic deformation in repeated bending. Reference standard: IEC TR 63114, YB/T 4731-2019.



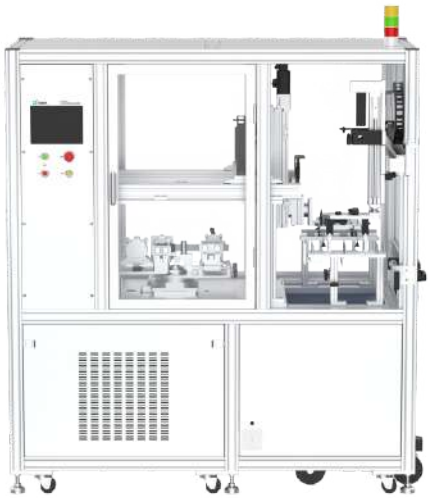
Silicon Steel Sheet
30 mm x (300 ± 20) mm

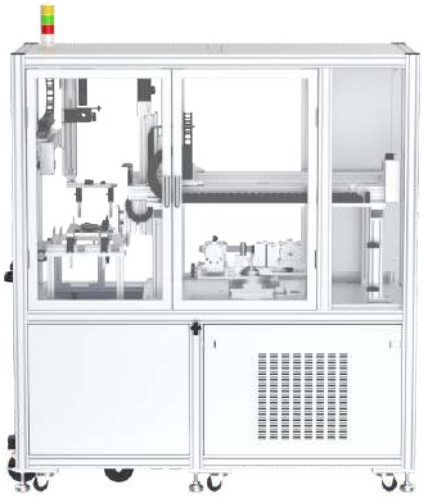
- Quick clamping of electrical steel sheet.
- The device can be easily fixed on the desktop by tightening screws and a vise at the bottom.
- The bending radius of the lower clamp is 5 mm, and the bending radius is not less than ±90°.
- The upper spring can exert stable tension on electrical steel sheet.
- The number of bends can be displayed.

TS1810

Bending Automatic Testing System for Electrical Steel Sheets

TS1810 is a special instrument for bending automatic testing of electrical steel sheet.It can fully automatically test the performance of electrical steel sheet under plastic deformation in repeated bending. Reference standard: IEC TR 63114,YB/T 4731-2019.



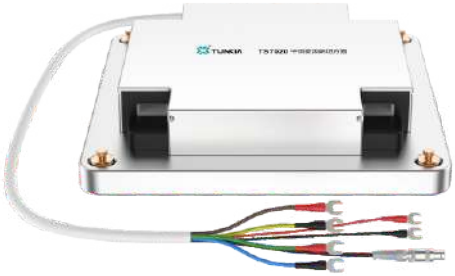


Silicon Steel Sheet
30 mm x (300 ± 20) mm

- Fully automatic loading - testing - data uploading - unloading.
- The bending times can be set in the range of 0 ~ 9999.
- The counter displays the bending times in real time, and stops automatically after reaching the set times.
- It can automatically judge whether the bent specimen is cracked or broken (optional).
- 24 hours of uninterrupted operation.
- The conventional method is manual loading, and AGV and other loading methods can be customized.

TS7000 / TS7010 / TS7020 / TS7100

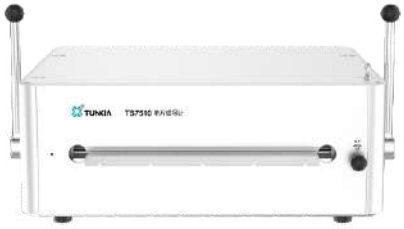
Epstein Frame



- The Epstein frame is an accessory of magnetic properties measuring system for electrical steel, E.g. TS1000 / TS1020 / TS1100 / TS1200 / TS1300 / TS3000.
- The size of the tested specimens is 30 mm (W) × (280 ~ 320) mm (L) .
- There are regular, medium frequency, high frequency, high temperature and other Epstein frame.
- Magnetic field measurement methods: M.C and H-coil.
- The built-in coil of air flux compensation conforms to IEC60404-2 or IEC60404-10 standards.
- The cutting and placement of specimens shall comply with IEC60404-2.

TS7500 / TS7510

Single Sheet Tester



- The single sheet tester is an accessory of magnetic properties measuring system for electrical steel, E.g. TS1100 / TS1200 / TS1300 / TS3000.
- The single sheet tester can measure the magnetic properties of single sheet specimens of various sizes.
- Single sheet tester with basic edition, upgrade edition and multiple sizes is available.
- Magnetic field measurement methods: M.C and H-coil.
- The upgraded single sheet tester adds yoke loss winding and demagnetization winding.
- The cutting and placement of specimens shall comply with IEC60404-3.

TUNKIA®

Tunkia Co., Ltd.

Contact Us

Tel +86-731-84930888

Fax +86-731-84930990

E-mail global@tunkia.com

Web. www.tunkia.com

Add. No. 16 Panpan Road, Changsha, Hunan, China

@Tunkia Calibration & Measurement