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## TB-300 Intelligent metal foil resistivity measuring instrument



### 1 Overview

TB-300 A intelligent metal foil resistivity measuring meter is a patented product of our company. It is the only portable and fully automatic instrument in the world, for measuring resistivity and conductivity of metal foil and thin metal belt. The design of the high-tech products adopts current-voltage four-terminal measuring method, advanced electronic techniques, singlechip technique and automatic detection technology. The performances completely accord with the technical requirements of GB/T22638. 6—2016. It can be widely applied in the fields of metal foil, thin metal belt, , new energy fields such as battery tab,electricity electrician, electrical motor ,colleagues and research institutes, etc.

### 2 Main features of the instrument

Used for measuring the resistivity of metal foil, thin metal belt, room temperature DC resistance at standard size.

- Combining advanced electronic, singlechip and automatic measurement techniques in one instrument, with superior automatic functions and simple operation.

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- All measured numerical values can be obtained by just one press on the key without any calculation. The instrument is adequate for continuous, fast and accurate measurements.
- Battery power supply has small size thus easy to carry, suitable for indoor and open-field use.
- With large screen and font. Can display measured values and auxiliary parameters at the same time, including resistivity, room temperature DC resistance at standard size, resistance, temperature, measuring current and temperature compensation coefficient.
- One instrument has multiple applications, and has two measurement interfaces: metal foil room resistivity measurement interface and DC resistance measurement interface.
- The functions of automatic constant current selection, automatic current reversal, automatic zero point correction and overcome the error caused by thermal voltage to line resistance and ensure the accuracy of each measurement.
- ▶ The instrument comes with the temperature sensor of the environment and the temperature coefficient of various materials, and the temperature is automatically compensated.
- ▶ Optional series of calibration resistor, with related software, to realize automatic calibration of the instrument.
- Special portable four-terminal measuring fixture is suitable for fast measurements of different foil and belt material.
- The build-in data accumulator can record and save 1000 groups of measuring data and parameters. Connecting it to the host computer, the complete report can be generated.

### 3 TB-300 Main Parameters

Parameter Item	Resistivity	Conductivity	Resistance
Measuring range	$0.01\mu\Omega\cdot m \sim 2.5\mu\Omega\cdot m$	$0.4MS/m \sim 100MS/m$ $0.69\%IACS \sim 172\%IACS$	$0.1\mu\Omega \sim 150\Omega$
Resolution	$10^{-4} \sim 10^{-6}\mu\Omega\cdot m$	$0.01 \sim 0.001\%IACS$	$0.1\mu\Omega (I=1A)$



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Precision	$\pm 0.25\%$	$\pm 0.25\%$	100 $\mu\Omega$ ~150 $\Omega$ : $\pm 0.15\%$
Temperature measurement	-10 $^{\circ}\text{C}$ ~+55 $^{\circ}\text{C}$ Precision $\pm 0.2^{\circ}\text{C}$ (0 $^{\circ}\text{C}$ ~+40 $^{\circ}\text{C}$ )		
Internal constant current of the instrument	16 $\mu\text{A}$ level~1A level (automatic selection according to the measuring requirement)		
measuring fixture	with TBJ-300 (300mm) portable testing fixture measure strip-type metal foil and thin metal belt		
Automatic temperature compensation	The measured value will be automatically compensated to the value at 20 $^{\circ}\text{C}$ .		
measuring items	room temperature DC resistance at standard size $R' (T_0)$ 、resistivity $\rho v$ 、room temperature resistance $R (T_0)$ 、resistance $R$		
Printout data	Date, time, temperature correction coefficient $\alpha$ and various measurements values of metal foil		
Normal working environment	Temperature: 0 $^{\circ}\text{C}$ ~+40 $^{\circ}\text{C}$ ; relative humidity: 0~80%		
Display	Large LCD screen with backlight, can display multiple measuring parameters at the same time.		
Power supply	7Ah/7.4V chargeable lithium battery; battery power supply only, average working hour over 15 hours		
Internal memory	Can save 1000 groups of measured data.		
PC communication mode	RS232 serial port		
Weight	Host: 2.2kg Portable measuring fixture: 1kg		
Host size	285(W)*158(H)*120(D)		
Host shell	Shock-resistance engineering plastic		

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Packaging and protection	containing the host, measuring fixture, charger, communication cable, calibration resistor, operation manual and mini-printer.
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