

TMTECK

Eddy Current Electrical Conductivity Meter



Eddy Current Electrical Conductivity Meter TMD-101



TMD-101 is a kind of eddy current electrical conductivity meter, which is designed for quick & convenient measurement of material property, such as material separate, quality control, material state check and so on. It uses the electromagnetism testing principle. Testing objects focus on non-ferromagnetic material.

Features

- ★The meter uses 60 KHz (aviation industry standard) to inspire.
- ★The testing data can be read in two kinds of unit: %IACS and MS/m.
- ★Its big typeface, the back light illumination designs are advantageous for users to take the testing data even in low light condition.
- ★It uses the high property battery to make sure it keeps more running time, and because of its mini-size, it is easy to carry and to grasp hold.
- ★The design of the meter is more advantages: user can replace the probe in the outdoor, don't need to return to the company to adjust the probe into matching the meter.

★It can hold measurement data.

Applications

- ★ Test the conductivity of aluminum, copper and other non-ferrous magnetic metal in the processing industry.
- ★ In the aerospace and automotive industries, monitor the process of heat treatment, the strength and hardness of aluminum alloy.
- ★ Test the conductivity aluminum when it has not been oxidized.
- ★ Test the purity grade of materials.
- ★ Test materials resistivity.
- ★ Material Thermal Performance analysis.

Technical parameters

NAME		CONTENT
Measurement technology		Eddy current
Operating frequency		60KHz , 120 KHz
Display screen		Monochrome
L*B*H		180*75*30 mm
Instrument case		Anti-intense impact, water-proofing polyester.
Weight		290g
Power supply		High capacity, high performance lithium polymer battery
Measuring range		6.9%IACS—110%IACS(4.0 MS/m -64MS/m)
Distinguishing rate		0.1% IACS
Measuring accuracy		0°C to 50°C 0~23%IACS : ±0.1%IACS 23%IACS~110%IACS : ±0.3%IACS
Temperature compensation		Automatic compensation to the value of 20 °C.
Normal work environment	Relative humidity	0~95%
	Operating temperature	0°C~50°C
Language		English
Fitting		Portable box; probe; probe in cable; operating manual; conductivity standard sample; adapter.
Probe		Diameter:12.7mm (Applicable to minimum measuring area diameter at 60KHz is10mm.)

Note: The conductivity measurements automatically rectified to the value at 20°C.

Eddy Current Electrical Conductivity Meter TMD-102



TMD-102 is a kind of eddy current electrical conductivity meter, which is designed for quick & convenient measurement of material property, such as material separate, quality control, material state check and so on. It uses the electromagnetism testing principle. Testing objects focus on non-ferromagnetic material.

Features

- ★The meter uses 60 KHz (aviation industry standard) to inspire, and the testing data can be read in two kinds of unit: %IACS or MS/m.
- ★Its big typeface, the back light illumination designs are advantageous for users to take the testing data even in low light condition.
- ★Two kinds of operate languages satisfy different national demand.
- ★It uses the high property battery to make sure it keeps more running time, and because of its mini-size, it is easy to carry and to grasp hold.
- ★The design of the meter is more advantages: user can replace the probe in the outdoor, don't need to return to the company to adjust the probe into matching the meter.
- ★It can store 1000 measurement data.

Applications

- ★ Test the conductivity of aluminum, copper and other non-ferrous magnetic metal in the processing industry.
- ★ In the aerospace and automotive industries, monitor the process of heat treatment, the strength and hardness of aluminum alloy.
- ★ Test the conductivity aluminum when it has not been oxidized.
- ★ Test the purity grade of materials.
- ★ Test materials resistivity.
- ★ Material Thermal Performance analysis.

Technical parameters

NAME	CONTENT	
Measurement technology	Eddy current	
Operating frequency	60KHz, 240KHz	
Display screen	240X320 pixels TFT-LCD; 4 kinds of background color	
L*B*H	180*80*30 mm	
Instrument case	Anti-intense impact, water-proofing polyester.	
Weight	260g	
Power supply	High capacity, high performance lithium polymer battery	
Measuring range	Conductivity	6.9%IACS—110%IACS(4.0 MS/m -64MS/m)
	Resistivity	Correspond the Conductivity
Distinguishing rate	0.01% IACS 0.000001Ω·(mm) ² /m	
Measuring accuracy	0°C to 50°C 0~23%IACS : ±0.1%IACS 23%IACS~110%IACS : ±0.3%IACS	
Temperature compensation	Automatic compensation to the value of 20 °C.	
Normal work environment	Relative humidity	0~95%
	Operating temperature	0°C~50°C
Language	English, Chinese	
Fitting	Portable box; probe; probe in cable; operating manual; conductivity standard sample; adapter.	
Probe	Diameter:12.7mm (Applicable to minimum measuring area diameter at 60KHz is10mm.)	
	Diameter: 8mm (Applicable to minimum measuring area diameter at 240KHz is 7CM)	

Note: The conductivity measurements automatically rectified to the value at 20°C.

TMD-103

DIGITAL CURRENT CONDUCTIVITY METER



Application fields

- Distinguishing and examining alloy
- Examining heat-treating state, during manufacturing, as well as inspecting over-heated damage during service (such as airplane).
- Detecting grades of materials
- Metal classification
- Detecting the density of powder-metallurgical parts
- Detecting the conductivity of conductors during manufacturing and servicing.

Characteristics of the instrument

- Beautiful appearance, easy to carry about and grasp, simple and convenient to use.
- Big screen, big character typeface; displaying measured result, working frequency, temperature, temperature coefficient, etc. simultaneously.

- Properly designed with back-light illumination for reading measured data in poor-light environment.
- Special temperature coefficient setting and auto calibrating mode, convenient and reliable for user to operate.
- Excellent design of lift-off compensation and temperature compensation of the instrument to ensure the precision of measurement.
- With interchangeable probes of the instrument, the user oneself is able to change probes provided by our company without matching.
- With built-in data memory, enough to record 16000 groups of measured data and important measuring parameter; to connect to a computer for forming a complete report.
- Two kinds of measuring units (MS/m or %IACS) for convenient selection. It is easy to switch to resistivity value directly on the measurement interface.
- Three kinds of language selection: Simplified Chinese Characters, Japanese and English.

TECHNICAL PARAMETER

Model	TMD-103
Items	
Working Freq.	60KHz, sine wave
Measurement range for conductivity	0.51 %IACS to 112 %IACS, or 0.3 MS/m to 65 MS/m, or resistivity 0.015388 to 3.33333Ω•mm ² /m
Resolving power	0.01%IACS(when <51%IACS); 0.1%IACS(51%IACS to 112%IACS)
Measuring precision	±0.5% reading
Lift-off effect	Probe compensation 0.5mm
Temp. measurement	0°C to +50°C(precision 0.5°C)
Function of auto compensation	Measured result of conductivity, adjusting to value at temp. 20°C automatically; Manual input temperature compensation mode
Probes	The probe of diameter φ14mm, working freq. 60KHz. The probe is made of imported material, wear-resistant and high temperature resistant, and can be replaced intelligently .
Normal working	Temp. 0°C to +50°C; relative humidity, 0 to 95%

environment	
Display	Liquid crystal big screen, back-light designed, multiple items of important parameter displayed simultaneously.
Power supply	Equipped with a lithium ion battery of 2200mA/h
Reading memory	Storage for 16000 groups of measured data files.
Communication with PC machine	RS 232 interface
Weight of host machine	0.5kg (including batteries)
Dimension of host machine	220mmx95mmx55mm
Shell of instrument	Engineering plastic, high impact-resistance, waterproof shell for this instrument
Package and protection	High impact-resistance, waterproof, portable box made of aluminium alloy; inside of it there are instrument, probes, communication cable, operation manual, conductivity blocks, recharger, instrument stand, U-disk (or optical disk).
Accessories	3 pieces of standard conductivity blocks,. You can purchase more blocks if you wish.

Inventory

Detailed list	Number
Instrument host	1
Standard block (with block base)	3
The probe(60KHz)	1
Instrument bracket	1
Hexagon wrench	1
Communication connecting cable	1
Lithium ion battery (in the machine)	1
Lithium ion battery charger	1
An instruction manual	1
Random U disk (or CD)	1
Certificate	2
File pocket	1
Aluminum alloy instrument carrying case	1

TMD-104

DIGITAL CONDUCTIVITY METER



Eddy Conductivity Meter of TMD-104 is the first generation of Digital Conductivity Meter designed with eddy phase. These products may be used for distinguishing, grading, and state detecting for non-ferromagnetic metal. These are commonly used in industries of machinery, electric power, aviation, aerospace, nuke, military, etc.

Application fields

- Distinguishing and examining alloy
- Examining heat-treating state, during manufacturing, as well as inspecting over-heated damage during service (such as airplane).
- Detecting grades of materials
- Metal classification
- Detecting the density of powder-metallurgical parts

Detecting the conductivity of conductors during manufacturing and servicing.

Characteristics of the instrument

- Beautiful appearance, easy to carry about and grasp, simple and convenient to use.
- Big screen, big character typeface; displaying measured result, working frequency, temperature, temperature coefficient, etc. simultaneously.
- Properly designed with back-light illumination for reading measured data in poor-light environment.
- Special temperature coefficient setting and auto calibrating mode, convenient and reliable for user to operate.
- Excellent design of lift-off compensation and temperature compensation of the instrument to ensure the precision of measurement.
- With interchangeable probes of the instrument, the user oneself is able to change probes provided by our company without matching.
- With built-in data memory, enough to record 16000 groups of measured data and important measuring parameter; to connect to a computer for forming a complete report.
- Two kinds of measuring units (MS/m or %IACS) for convenient selection. It is easy to switch to resistivity value directly on the measurement interface.
- Three kinds of language selection: Simplified Chinese Characters, Japanese and English.

TECHNICAL PARAMETER

Model	TMD-104
Items	
Working Freq.	60KHz, sine wave
Measurement range for conductivity	7.76 %IACS to 112 %IACS, or 4.5 MS/m to 65 MS/m or resistivity 0.01538 to 0.22222Ω•mm ² /m
Resolving power	0.01%IACS(when <51%IACS); 0.1%IACS(51%IACS to 112%IACS)
Measuring precision	±0.5% reading
Lift-off effect	Probe compensation 0.5mm
Temp. measurement	0°C to +50°C(precision 0.5°C)

Function of auto compensation	Measured result of conductivity, adjusting to value at temp.20°C automatically; Manual input temperature compensation mode
Probes	The probe of diameter ϕ 14mm, working freq. 60KHz.The probe is made of imported material, wear-resistant and high temperature resistant, and can be replaced intelligentlyr .
Normal working environment	Temp. 0°C to +50°C; relative humidity, 0 to 95%
Display	Liquid crystal big screen, back-light designed, multiple items of important parameter displayed simultaneously.
Power supply	Equipped with a lithium ion battery of 2200mA/h
Reading memory	Storage for 16000 groups of measured data files.
Communication with PC machine	RS 232 interface
Weight of host machine	0.5kg (including batteries)
Dimension of host machine	220mmx95mmx55mm
Shell of instrument	Engineering plastic, high impact-resistance, waterproof shell for this instrument
Package and protection	High impact-resistance, waterproof, portable box made of aluminium alloy; inside of it there are instrument, probes, communication cable, operation manual, conductivity blocks, recharger, instrument stand, U- disk (or optical disk).
Accessories	2 pieces of standard conductivity blocks ,You can purchase more blocks if you wish.

Inventory

Detailed list	Number
Instrument host	1
Standard block (with block base)	3
The probe(60KHz)	1
Instrument bracket	1
Hexagon wrench	1
Communication connecting cable	1
Lithium ion battery (in the machine)	1
Lithium ion battery charger	1
An instruction manual	1
Random U disk (or CD)	1
Certificate	2
File pocket	1
Aluminum alloy instrument carrying case	1

TMD-105

DIGITAL CONDUCTIVITY METER



The eddy conductivity meter of TMD-105 is the upgrading product of Sigma 2008A, which has the leading technology performance, can totally replace the similar products overseas. TMD-105 adds a new frequency testing of 500KHz, which can accurately measure thinner test pieces. The application range is more extensive after adding continuity measurement and camber measurement mode. In the meanwhile, adding lots of temperature compensation mode can ensure accurate measuring of temperature under different temperature conditions.

APPLICABILITY AND FEATURES

TMD-105 is the product of digital conductivity meter designed with eddy phase. These products are commonly used in industries of metallurgy, machinery, electric power, aviation and aerospace, nuclear, military, etc.

Characteristics:

- Beautiful appearance, easy to carry about and grasp, simple and convenient to use.
- Big screen, big character; displaying measured result, working frequency, temperature, temperature coefficient etc. simultaneously.

- Two kinds of switchable frequencies for Sigma 2008B, 60KHz for aviation industry standard, 500KHz for detecting sheet metal.
- Special temperature coefficient setting and auto calibrating mode, convenient and reliable for user to operate.
- Up to 500 μ m lift-off compensation design, for maintaining the measuring accuracy when painted, coated or dusty on surface.
- The variety of temperature compensation mode design, combined with temperature coefficient, instruments can ensure the measurement accuracy under different testing temperature.
- With interchangeable probes, the user is able to change probes provided by our company without matching.
- Built-in date memory, can record 16000 sets of test date and important test parameters, you can connect the computer to generate a complete report.
- Two units (MS/m or %IACS) convenient choice, but also can directly switch resistivity in the measurement of interface.
- Three kinds of language selection: Simplified Chinese, Japanese and English.

TYPICAL APPLICATIONS

- Conductivity and resistivity measurement of non-ferromagnetic material
- Determining extent of thermal treatment
- Checking thermal damage, material fatigue and crack
- Determining metal purity
- Monitoring of metal homogeneity
- Metal classification Monitoring of strength and hardness Detecting the density of powder metallurgy parts

MEASURING SYSTEM INSTRUCTIONS

Model	TMD-105
Items	
Working Freq.	60KHz and 500KHz, sine wave
Measurement range for conductivity	0.51 %IACS to 112 %IACS, or 0.3 MS/m to 65 MS/m or resistivity 0.01538 $\Omega \cdot \text{mm}^2/\text{m}$ 到 3.33333 $\Omega \cdot \text{mm}^2/\text{m}$
Resolution	0.1 %~0.001 %IACS

Measuring precision	±0.5% reading
Lift-off compensation	0.5mm of φ14 probe; 0.2mm of φ8 probe;
Temp. Measuring range	0℃~+80℃Temp. resolution0.1℃Temp. Measuring precision0.5℃
Temperature Compensation Mode	The pseudo temperature compensation mode when conductivity is automatically adjusted to 20℃ ; Automatic temperature compensation mode and Manual input temperature compensation mode
Probes	B type machine with diameter 14 mm working frequency of 60 KHz and diameter 8mm working frequency of 500 KHz of a probe; The probe is made of imported material, wear-resistant and high temperature resistant, and can be replaced intelligently .
Working environment	Temp. 0℃~+50℃ , Related humidity 0~85% (Non-condensing)
Display	Large screen LCD, with back-light designed, can display multiple items of important parameter simultaneously
Power supply	Provided lithium ion battery of 3.7V 、 2200mA/h, continuous working about 12hours
Temp. Probe	Hand-hold surface temperature sensor
Reading memory	Save 16000 sets of measuring date
PC Communication	RS 232 interface, Baud rate: 2400bps; Date rate:8
Host weight	0.5KG (Including battery)
Host size	220 mm×95 mm×55 mm
Shell	Plastic shell
Package and protection	High impact-resistance, portable box made of aluminum alloy, and instrument, probe, communication cable, operation manual, conductivity block, charger, instrument bracket, U-disk (or optical disk).
Accessories	3 pieces of standard conductivity blocks, can provide more blocks for customer choose.

Inventory

Detailed list	Number
Instrument host	1
Standard block (with block base)	3
The probe(60KHz)	1
The probe(500KHz)	1
External temperature sensor	1
Main engine protective cover	1
Probe curved grip	1
Instrument bracket	1
Hexagon wrench	1
Communication connecting cable	1
Lithium ion battery (in the machine)	1
Lithium ion battery charger	1
An instruction manual	1
Random U disk (or CD)	1
Certificate	2
File pocket	1
Aluminum alloy instrument carrying case	1

TMD-106

DIGITAL CONDUCTIVITY METER



The eddy conductivity meter of TMD-106. The application range is more extensive after adding continuity measurement and camber measurement mode. In the meanwhile adding lots of temperature compensation mode can make sure measuring the temperature accurately under difference temperature conditions.

Applicability and features

TMD-106 is the product of digital conductivity meter designed with eddy phase. These products commonly used in industries of metallurgy, machinery, electric power, aviation and aerospace, nuke, military, etc.

Characteristics:

- Beautiful appearance, easy to carry about and grasp, simple and convenient to use.
- Big screen, big character; displaying measured result, working frequency, temperature, temperature coefficient etc. simultaneously.
- Special temperature coefficient setting and auto calibrating mode, convenient

and reliable for user to operate.

- Up to 500 μ m lift-off compensation design, for maintaining the measuring accuracy when painted, coated or dusty on surface.
- The variety of temperature compensation mode design, combined with temperature coefficient, instruments can ensure the measurement accuracy under different testing temperature.
- With interchangeable probes, the user is able to change probes provided by our company without matching.
- Built-in date memory, can record 16000 sets of test date and important test parameters, you can connect the computer to generate a complete report.
- Two units (MS/m or %IACS) convenient choice, but also can directly switch resistivity in the measurement of interface.
- Three kinds of language selection: Simplified Chinese, Japanese and English.

Typical application

- Conductivity and resistivity measurement of
- non-ferromagnetic material
- Determining extent of thermal treatment
- Checking thermal damage, material fatigue and crack
- Determining metal purity
- Monitoring of metal homogeneity
- Metal classification Monitoring of strength and hardness Detecting the density of powder metallurgy parts

Measuring system instructions

Model	TMD-106
Items	
Working Freq.	60KHz sine wave
Measurement range for conductivity	0.51 %IACS to 112 %IACS, or 0.3 MS/m to 65 MS/m or resistivity 0.01538 $\Omega \cdot \text{mm}^2/\text{m}$ 到 3.33333 $\Omega \cdot \text{mm}^2/\text{m}$
Resolution	0.1 %~0.001 %IACS

Measuring precision	±0.5% reading
Lift-off compensation	0.5mm of φ14 probe;
Temp. Measuring range	0℃~+80℃Temp. resolution0.1℃Temp. Measuring precision0.5℃
Tempertaure Compensation Mode	the pseudo temperature compensation mode when conductivity is automatically adjusted to 20℃ ;Automatic temperature compensation mode and Manual input temperature compensation mode
Probes	B1 type machine with a diameter of 14 mm working frequency of 60 KHz of a probe.The probe is made of imported material, wear-resistant and high temperature resistant, and can be replaced intelligently .
Working environment	Temp. 0℃~+50℃, Related humidity 0~85% (Non-condensing)
Display	Large screen LCD, with back-light designed, can display multiple items of important parameter simultaneously
Power supply	Provided lithium ion battery of 3.7V 、 2200mA/h, continuous working about 12hours
Temp. Probe	Hand-hold surface temperature sensor
Reading memory	Save 16000 sets of measuring date
PC Communication	RS 232 interface, Baud rate: 2400bps; Date rate:8
Host weight	0.5KG (Including battery)
Host size	220 mm×95 mm×55 mm
Shell	Plastic shell
Package and protection	High impact-resistance, portable box made of aluminum alloy, and instrument, probe, communication cable, operation manual, conductivity block, charger, instrument bracket, U-disk (or optical disk).
Accessories	3 pieces of standard conductivity blocks, can provide more blocks for customer choose.

Inventory

Detailed list	Number
Instrument host	1
Standard block (with block base)	3
The probe(60KHz)	1
External temperature sensor	1
Main engine protective cover	1
Probe curved grip	1
Instrument bracket	1
Hexagon wrench	1
Communication connecting cable	1
Lithium ion battery (in the machine)	1
Lithium ion battery charger	1
An instruction manual	1
Random U disk (or CD)	1
Certificate	2
File pocket	1
Aluminum alloy instrument carrying case	1