

# METRALINE EARTH

TESTER FOR MEASURING EARTHING RESISTANCES AND FOR TESTING LOW-RESISTANCE CONTINUITY OF PROTECTIVE CONDUCTORS AND CONTACT RESISTANCES PER DIN 18014 AND EN 50110-1, EN 61557



- Measurement of earthing resistances
- Testing of the low-resistance continuity of protective conductors and contact resistances in accordance with DIN 18014 as well as EN 50110-1, EN 61557
- Easy-to-read 3½" color TFT display
- Memory for 1000 measurements
- PC software for generating test reports (Excel)
- Battery charging inside the instrument
- Automatic polarity reversal ( $R_{LO}$ )
- Convenient service functions (calibration reminder, firmware update via USB)

## APPLICATION

The METRALINE EARTH is used for the professional measurement of earthing resistance and for low-resistance measurements with a test current of  $\geq 200$  mA in accordance with EN 61557-4 / VDE 0413-4. The METRALINE EARTH serves to implement all common earthing measurement methods easily and reliably.

Thanks to its compact and rugged design, the instrument is ideally suited for mobile applications and can be used in any environment without any trouble.

State-of-the art data transmission and a USB interface allow for simple documentation of test results.

## INCLUDED FEATURES

Measurement of:

- Low-resistance protective conductor continuity
- Earth resistance
  - 3-wire measurement
  - 4-wire measurement
  - Determination of soil resistivity using the Wenner method

## DESCRIPTION OF FEATURES

### ALL-IN-ONE

A single instrument for all required earthing measurements.

### FLEXIBLE USE

Portable, battery-operated, hand-held measuring instrument with carrying pouch for flexible use in various test environments

### EASY OPERATION

Large color TFT display with background illumination for quick reading of displays and measurement results. Simple and straightforward operation.

### EXTENSIVE ACCESSORIES

Includes a comprehensive range of accessories for conveniently performing all measurements required for testing the electrical safety of installations in buildings

### CONVENIENT DATA EVALUATION

Internal memory for 1000 measurements and PC software for generating external test reports

## TECHNICAL DATA

<b>Power Supply</b>		9 V DC (six 1.5 V AA batteries or rechargeable batteries)
<b>Ambient Conditions</b>	Operating temperatures:	0 ... +40 °C
	Storage temperatures:	-10 ... +70 °C
	Relative atmospheric humidity:	Max. 95%, no condensation allowed
	Elevation:	Max. 2000 m
<b>Electrical Safety</b>	Pollution degree:	2
	Protection category:	II
	Surge protection:	600 V CAT III 300 V CAT IV
<b>Electromagnetic Compatibility (EMC)</b>	Interference emission:	EN 61326-1, class B
	Interference immunity:	DIN EN 61326-1 / IEC 61326-1 DIN EN 61326-2-33 / IEC 61326-2-33 EN 55011:2016 + A1:2017
<b>Mechanical Design</b>	Protection:	Housing: IP42 per DIN EN 60529 / IEC 60529 (protection against ingress of solid foreign objects: $\geq 1.0$ mm dia., protection against water ingress: protection against falling dripping water, when the housing is inclined up to 15°)
	Housing (W x H x D):	Approx. 25 x 10.7 x 13.5 cm
	Weight:	Approx. 1.30 kg (without batteries)
	Display:	480 x 320 TFT LCD
<b>Data Interfaces</b>	COM port:	USB
<b>Internal Memory</b>		1000 measurements

## RELEVANT STANDARDS

The instrument has been manufactured and tested in accordance with the following safety regulations:

DIN EN 60529 IEC 60529	Test instruments and test procedures Degrees of protection provided by enclosures (IP code)
DIN EN 61010-1 IEC 61010-1	Safety requirements for electrical equipment for measurement, control and laboratory use – Part 1: General requirements
DIN EN 61010-031	Safety requirements for electrical equipment for measurement, control and laboratory use – Part 031: Safety requirements for hand-held and hand-manipulated probe assemblies for electrical test and measurement
DIN EN IEC 61326-1	Electrical equipment for measurement, control and laboratory use – EMC requirements – Part 1: General requirements
DIN EN IEC 61557-1	Electrical safety in low voltage distribution systems up to 1000 V AC and 1500 V DC – Equipment for testing, measuring or monitoring of protective measures – Part 1: General requirements (IEC 61557-1:2019)

## CHARACTERISTIC VALUES

Function	Measured Quantity	Measuring Range
Continuity ( $R_{LO}$ )	Test current: 200 mA (2-wire method)	0.00 $\Omega$ ... 1999 $\Omega$
Earthing resistance ( $R_E$ )	3-wire method, 4-wire method	0.00 $\Omega$ ... 9999 $\Omega$
	Soil resistivity	0.0 $\Omega$ ... 9999 $\Omega$

## SCOPE OF DELIVERY

Standard Scope of Delivery:

1	METRALINE EARTH (M590R)	
1	Carrying pouch	
1	Earth tester set with three measuring cables (green: 5 m; red: 20 m; blue: 40m)	
2	Earth spikes	
3	Alligator clips	
1	USB cable, type A to type B	
6	1.5 V rechargeable batteries	
1	Power pack	
1	Condensed operating instructions	
1	Operating instructions (download)	<a href="https://www.gmc-instruments.de/services/download-center/">https://www.gmc-instruments.de/services/download-center/</a>
1	METRAreport software (download)	<a href="https://www.gossenmetrawatt.de/services/mygmc/">https://www.gossenmetrawatt.de/services/mygmc/</a>

Available accessories ⇒ "Order Information" 4.

## ORDER INFORMATION

### INSTRUMENT

Type	Description	Article Number
METRALINE EARTH	Earth tester in accordance with EN 61557-1-4-5 for 3-/4-wire measurement, earthing resistance according to Wenner and low-resistance measurement with 200 mA.	M590R

### ACCESSORIES

Description	Article Number
MF remote probe	Z520A
MF measurement cable set	Z520B
MF charger	Z520C
MF rechargeable battery	Z520D

Description	Article Number
Carrying pouch	Z520T
E set	Z590R

Further information is available:

- our Measuring Instruments and Testers catalog
- on the Internet at [www.gossenmetrawatt.com](http://www.gossenmetrawatt.com)



© Gossen Metrawatt GmbH  
Prepared in Germany • Subject to change without notice /  
Errors excepted • A pdf version is available on the Internet

All trademarks, registered trademarks, logos, product names,  
and company names are the property of their respective  
owners.

## YOUR CONTACT

**Gossen Metrawatt GmbH**  
Südwestpark 15  
90449 Nürnberg  
Germany



+49 911 8602-0



+49 911 8602-669



info@gossenmetrawatt.com



www.gossenmetrawatt.com