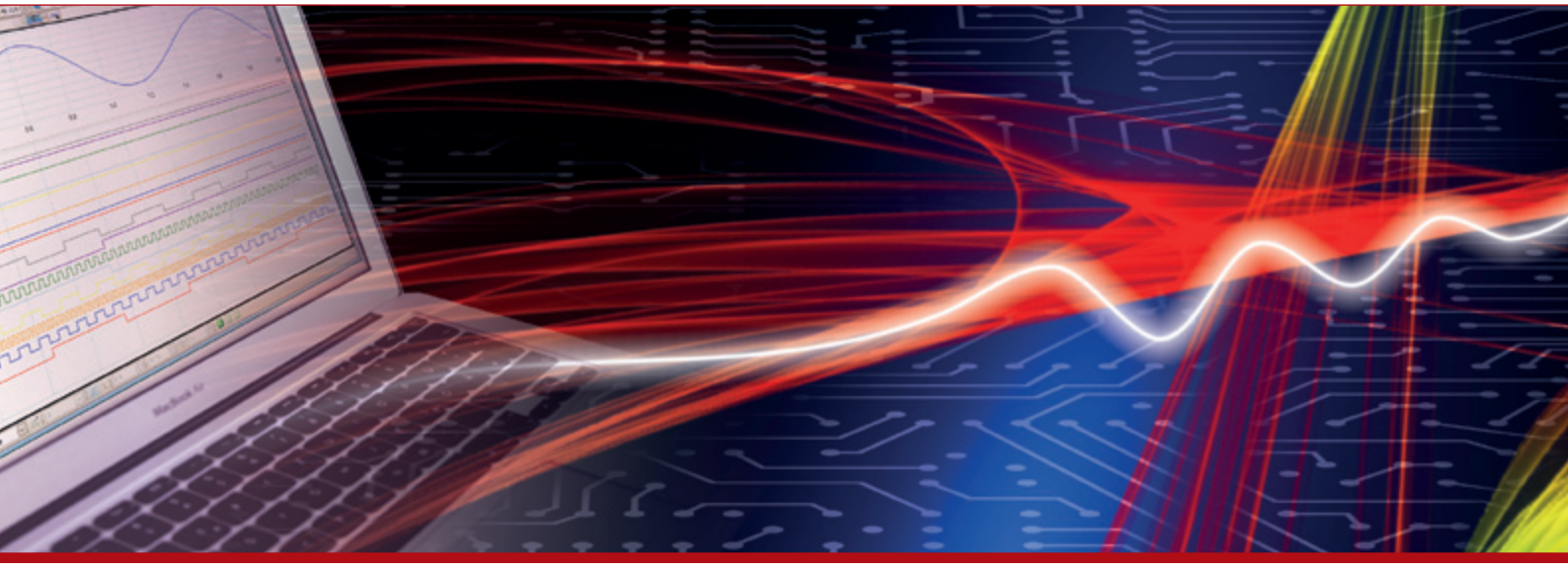
Product Datasheet - Technical Specifications



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GOSSEN METRAWATT
GMC-INSTRUMENTS GROUP

METRAOHM 10

Low-Impedance Measuring Instrument

3-447-117-03
1/2.24

- Low-impedance measuring instrument for protective conductors and equipotential bonding conductors
- 200 mA measurement via battery supply
- 10 A measurement via mains supply
- Graphic colour display
- 4 mm safety measuring sockets
- Integrated memory
- USB port
- Software tool for reading out measured values

Applications

METRAOHM 10 is a low-impedance measuring instrument for protective conductors and equipotential bonding conductors. It is designed to perform two different measurement types:

- R_{LO} four-wire measurement with current 10 A AC
- R_{LO} two-wire measurement with current 200 mA DC
- Contact resistances on lightning protection and grounding systems in accordance with DIN 18014
- Low-resistance continuity on machines in accordance with EN 60204-1 (VDE 0113-1)

Features

- Easy to handle device
- Simple operation with pushbuttons
- Rugged plastic housing
- 200 mA measurement in auto mode or continuous mode
- 10 A measurement in auto mode or manual mode
- Measuring resistance for checking the Kelvin clips and determining the offset values
- Data export to PC (Microsoft Excel-files)
- Data evaluation via software

METRAOHM 10

Low-Impedance Measuring Instrument

Technical Data

Mechanical Design

Housing (W × H × D)	approx. 25 cm × 10.7 cm × 13.5 cm
Weight	approx. 1.75 kg (with batteries, without cables)
Display	TFT LCD display, 480 × 320, 3.5"

Ambient Conditions

Operating temperature	+0 ... +40 °C
Storage temperature	–10 ... +70 °C (without batteries)
Relative humidity	max. 80%, no condensation allowed
Elevation	max. 2000 m
Place of use	Indoor use only

Power Supply

Battery	6 × LR6 AA alkaline battery Voltage: 1.5 V
Mains power supply	230 V_{AC} 50 Hz

Electrical Safety

Measuring category	Cat II / 600 V
Pollution degree	2
Protection category	Cat II
Fuses	F1 (10 A measurement): 10 A / 600 V, 6.3 mm × 32 mm F2 (200 mA measurement): 400 mA / 600 V, 6.3 mm × 32 mm F3 (mains): 315 mA / 250 V, 5 mm × 20 mm

Data Interfaces

Connection	COM Port USB Type B

Features Included

– R_{LO} four-wire measurement with current 10 A_{AC}
– R_{LO} two-wire measurement with current 200 mA_{DC}

Relevant Standards

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

DIN EN 61010-1 IEC 61010-1	Safety requirements for electrical equipment for measurement, control and laboratory use – Part 1: General requirements
IEC/EN 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/EN 61557-4	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 4: Resistance of earth connection and equipotential bonding
DIN EN IEC 61326-1	Electrical equipment for measurement, control and laboratory use - EMC requirements – Part 1: General requirements
DIN EN 60529 IEC 60529	Test instruments and test procedures Degrees of protection provided by enclosures (IP code)

Characteristic Values

R_{LO} 200 mA (Auto mode)	
Measuring range	0.01 ... 9.99 Ω
	10.0 ... 99.9 Ω
Resolution	0.01 Ω
	0.1 Ω
Accuracy	± (2 % m.v. + 2 dgt)
Test current	> 200 mA_{DC} for R ≤ 5 Ω (including compensation value)
Test current resolution	1 mA
Open circuit voltage	4 V ≤ V_0 ≤ 12 V_{DC}
Measurement method	2 wires
Standard	IEC/EN 61557-4 (for R > 0.10 Ω)

METRAOHM 10

Low-Impedance Measuring Instrument

R_{LO} 200 mA (Continuous mode)	
Measuring range	0.01 ... 9.99 Ω
	10.0 ... 99.9 Ω
Resolution	0.01 Ω
	0.1 Ω
Accuracy	± (2 % m.v. + 2 dgt)
Test current	> 200 mA_{DC} for R ≤ 5 Ω (including compensation value)
Test current resolution	1 mA
Open circuit voltage	4 V ≤ V_0 ≤ 12 V_{DC}
Measurement method	2 wires
Continuous mode	Cont+ (R+) and Cont- (R-)
Duration of continuous test	1 ... 15 s
Standard	IEC/EN 61557-4 (for R > 0.10 Ω)

R_{LO} 10 A Limit MAN	
Measuring range	0.001 ... 0.999 Ω
Resolution	0.001 Ω
Accuracy	± (1 % m.v. + 2 dgt)
Test current	> 10 A_{AC} for R ≤ 0.45 Ω
Test current resolution	0.1 A
Open circuit voltage	V_0 ≤ 12 V_{AC}
Measurement method	4 wires
Power supply	230 V AC 50 Hz
Standard	IEC/EN 61439-1

R_{LO} 10 A Limit AUTO	
Measuring range	0.001 ... 0.999 Ω
Resolution	0.001 Ω
Accuracy	± (1 % m.v. + 2 dgt)
Test current	> 10 A_{AC} for R ≤ 0.45 Ω
Test current resolution	0.1 A
Open circuit voltage	V_0 ≤ 12 V_{AC}
Measurement method	4 wires
Selectable section	0.5, 1.0, 1.5, 2.5, 4.0, 6.0, 10 and 16 mm^2 (p[Cu] = 0.017 Ω mm^2/m)
Length measuring range	0.1 m ... 999.9 m
Power supply	230 V_{AC} 50 Hz
Standard	IEC/EN 60204-1

Scope of Delivery

1 METRAOHM 10 (M630K)
1 AC mains power supply cable
1 USB type A to type B cable
1 Two-wire measurement standard test leads with alligator clips
1 Four-wire Kelvin test leads with alligator clips
1 Kelvin clip test 1 Ω / 25 W (Z630K)
1 Carrying case with carrying strap and strap on the instrument
1 Test report
1 Calibration certificate

Order Information

Description	Type	Article number
METRAOHM 10	Low-Impedance Measuring Instrument	M630K

For additional information regarding accessories please refer to

- Measuring Instruments and Testers catalog
- www.gossenmetrawatt.com