



## OM 16

Onsite 10 A micro-ohmmeter for inductive and non-inductive resistance

Designed for field use, OM 16 onsite micro-ohmmeter performs 4-wire measurements of **inductive and non-inductive resistances with continuous, pulse or AC measuring current up to 10 A.**

- Accuracy: 0.05%
- Resolution: 0.1  $\mu\Omega$
- Ranges: Selectable from 5 m $\Omega$  up to 2.5 K $\Omega$
- Auto power-off of current
- Continuous measurement current for inductive loads
- Pulse measurement current for non-selfic résistances
- Automatic compensation of thermal E.M.F.
- Temperature compensation
- Metal temperature compensation

## Description

Designed for field use as well indoor as outdoor, OM 16 onsite micro-ohmmeter performs 4-wire measurements of **inductive and non-inductive resistances with continuous, pulse or AC measuring current up to 10 A.** Offering a high accuracy of 0.05 % and resolution of 0.1  $\mu\Omega$ , it works over a large selectable range of resistances from 5 m $\Omega$  up to 2.5 K $\Omega$ .

All parameters are user-programmable, either directly through the instrument interface or via Log OM software delivered in option: measuring current, range, unit, alarmes, automatic average function, absolute autozero. Before every measurement, EMFs are measured and automatically removed for a greater accuracy of measurements. For non-inductive resistances, a single operator is enough to perform the measurement since it will be automatically triggered once continuity is established between the two points.

The user can also set the metal nature or its temperature coefficient, the reference temperature and the ambient temperature. The ambient temperature might be also measured by an external temperature probe.

2 alarm thresholds are programmable and either notified by a signal displayed on the screen, a light or a loud beeper.

The large interactive display of OM 16 informs in real time the operator about the type of measurement, range, calculation conditions and threshold values.

Battery-powered, OM16 has a high storage capacity of 1,000 measurements to be read directly on the display or via Log OM software or printer available in option.

Protection up to 250 V is ensured at every measurement terminal, while any overrange, open circuit or empty battery signal detected is notified by LEDs and messages displayed.

Easy-to-use, rugged and protected agains rough environment (IP 53 when opened, IP 64 when closed), OM 16 is widely used indoors and outdoors in many industries:

- Aerospace
- Energy field
- Domestic electrical appliances
- Cable manufacturing
- Telecommunication
- Electronics

- Automotive industry
- Railway

## Key features:

- Test current: 1 mA to 10 A
- 4-wire measurement
- Auto power-off of current
- Continuous measurement current for inductive loads: Coils, transformers, motor windings, twisted cables...
- Pulse measurement current for non-selfic resistances: Earth bonding, ground continuity, contact resistances, non-twisted cables...
- Automatic compensation of thermal E.M.F.
- Temperature compensation
- Metal temperature compensation

# Specifications

## Performances and technical specifications @23°C ±5°C

Uncertainty is given in % of reading + fixed value.

### Resistance measurement

Measurement range	Resolution	Accuracy / 1 year (23°C ±5°C)	Measuring current	Voltage drop
5 mΩ	0.1 μΩ	0.05 % + 0.5 μΩ	10 A	50 mV
25 mΩ	1 μΩ	0.05 % + 3 μΩ	10 A	250 mV
250 mΩ	10 μΩ	0.05 % + 30 μΩ	10 A	2.5 V
2500 mΩ	0.1 mΩ	0.05 % + 0.3 mΩ	1 A	2.5 V
25 Ω	1 mΩ	0.05 % + 3 mΩ	100 mA	2.5 V
250 Ω	10 mΩ	0.05 % + 30 mΩ	10 mA	2.5 V
2500 Ω	100 mΩ	0.05 % + 300 mΩ	1 mA	2.5 V

Automatic or manual selection of measurement range

Possible excess over the nominal range:

- 5 mΩ range: + 20 %
- 25 mΩ range: + 20 %

Maximum voltage between the terminals in an open circuit: 7 V

Current waveform: Continuous or pulse DC current

### Ambient temperature measurement for Tref compensation

Type	Résolution	Précision sur 1 an (23°C ±5°C)	Remarque
Pt100	0,1°C	0,5°C	Mesure par Pt100 externe ou valeur saisie au clavier

### Further features

Resistance types	<ul style="list-style-type: none"> <li>• Inductive resistances: Coils, transformers, motor windings, twisted cables...</li> <li>• Non-inductive resistances: Earth bonding, coating, contact résistances,</li> </ul>
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	non-twisted cables...
Measurement trigger conditions	Manual or automatic trigger allowing a single operator to be able to perform measurements
EMFs	Automatic compensation of EMF parasites before each measurement for a greater accuracy
Temperature compensation	- Ambient temperature $T_{amb}$ , measured with external Pt100 (or entered by the user) - Programmed reference temperature $T_{ref}$ , to which the measured value is converted: $R(T_{ref}) = [R(T_{amb}) * (1 + \alpha * T_{ref})] / [1 + \alpha * T_{amb}]$ - Metal material, whose temperature coefficient can be entered by the user ( $\alpha$ )
Temperature coefficient beyond operating range	<10% accuracy/°C (from 0 to 18°C and from 28 to 50°C)
Alarms	2 programmable thresholds with visual and sound signal

## General specifications

Size L x W x H	270 x 250 x 180 mm
Weight	4 kg
Supply	100 to 240 V (50 / 60 Hz)
Batteries (option)	Type: Ni/Mh 8.5 Ah Charging time: 5 h Battery life: 5,000 measurements at 10 A
Communication ports	RS 232
Storage capacity	1,000 measurements identified by numbers Memory reading directly on the display, via software or printer

## Environmental specifications

Reference range	23°C ± 5°C (RH: 45 to 75 % w/o condensing)
Operating reference range	0 to 50°C (RH: 20 to 75 % w/o condensing)
Limit operating range	-10°C to +55°C (RH: 10 to 80 % w/o condensing)
Storage temperature limits	-40°C to +60°C
IP protection	IP53 according to EN60529

## Safety specifications

### Protections

- Electronic protection up to 250 V for 'voltage' wires

- Fuse protection for 'current' wires
- Protection against 'current' circuit breaking during inductive resistance measurements

Class	In accordance with EN 61010-1 Category II, pollution 2
Rated voltage	60 V
Chocks and vibrations	EN61010-1
EMC conformity	

# Models and accessories

## Instrument:

OM16 On-site micro-ohmmeter

*Supplied in standard with:*

- Standard mains supply cable to recharge the battery
- Quick start manual

## Clips and probes:

*Please note that 2 clips are needed per instrument.*

AMT005	Long handspike, per unit Needle diameter: 3 mm, length without handle: 83 mm, total length: 215 mm, cable length: 5 m
AMT006	Large kelvin clip, per unit Opening diameter: 25 mm, cable length: 5 m
AMT011	Small handspike, per unit Needle diameter: 3 mm, total length: 125 mm, cable length: 5 m
AMT012	Small kelvin clip, per unit Opening diameter: 12 mm, cable length: 5 m
AMT013	Triggered handspike, per unit Needle diameter: 3 mm, length without handle 83 mm, total length: 215 mm, cable length: 5 m
Triggering cable to be connected by RS 232	
AMT008	Extension lead, length: 20 m
AMT014	External Pt100 temperature sensor
AMT015	Extension cable for AMT014, length: 2 m

## Other accessories:

LOG OM	Configuration & exploitation software for OM 16 - Includes a F / F RS 232 cable
AN5909	RS232 F / F cable (PC connection)
AN5875	RS232 F / M cable (Printer connection)

## Certification:

QMA11EN COFRAC certificate of calibration

## Packing information:

Size 270 x 250 x 180 mm  
Weight 4 kg