

LOM-DO5000 - LOM-DO5001 - LOM-DO5002

Resistance Measurement

Wide
Measuring Range
0.1 $\mu\Omega$... 30,000 Ω

High Accuracy
 $\pm 0.03\%$

Programmable
Measuring Current
10% to 100% in
100 steps 10 Amps
maximum

Programmable
Hi/Lo limits with
red/green lamps
on front panel

Fast measuring
Mode 50
measurements /
second

Automatic
Temperature
Compensation
with programmable
Coefficients

Open Circuit
Voltage Limit
Mode 20mV /
50mV maximum

Measuring
Current Selection
+ I - I and auto
average

Interface
Options RS232 /
IEEE 488/PLC

Data Logging
with Statistical
Analysis

Digital Micro-Ohmmeter DO5000 - 10 Amps Programmable Current



This new generation of micro-ohmmeters offers flexibility of measurement with high accuracy and exceptional functionality. The DO5000 encompasses all the features required of an ohmmeter in one instrument. Programmable measuring current in 100 steps ensures that the DO5000 is suitable for all your applications. Automatic temperature compensation references the measurement to 20°C and Hi / Lo limits permits sorting of components with the minimum of fuss. All these options are included in the basic unit as well as a data logging function which stores up to 4000 readings with date and time stamp. Statistical analysis of these values allows you to display the Max / Min / Average values as well as peak to peak and standard deviation. The DO5000 is a truly remarkable instrument and ideally suited for laboratory testing of samples, for production line testing, and with the addition of the interfaces RS232 / IEEE-488 or PLC the DO5000 may be remotely controlled and integrated into an automated testing system. For those applications where speed is important the DO5000 has a FAST measurement mode which measures at 50 measurements per second.

***Whatever your resistance measurement application
the DO5000 provides the solution.***

Range	Resolution	Min. Current	Max. Current	Accuracy at full rated current
30k Ω	1 Ω	10 μ A	100 μ A	$\pm(0.03\% \text{ Rdg} + 0.02\% \text{ FS})$
3k Ω	100m Ω	100 μ A	1mA	$\pm(0.03\% \text{ Rdg} + 0.01\% \text{ FS})$
300 Ω	10m Ω	1mA	10mA	$\pm(0.03\% \text{ Rdg} + 0.01\% \text{ FS})$
30 Ω	1m Ω	10mA	100mA	$\pm(0.03\% \text{ Rdg} + 0.01\% \text{ FS})$
3 Ω	100 $\mu\Omega$	100mA	1A	$\pm(0.03\% \text{ Rdg} + 0.01\% \text{ FS})$
200m Ω	10 $\mu\Omega$	1A	10A	$\pm(0.03\% \text{ Rdg} + 0.01\% \text{ FS})$
30m Ω	1 $\mu\Omega$	1A	10A	$\pm(0.03\% \text{ Rdg} + 0.01\% \text{ FS})$
3m Ω	100n Ω	1A	10A	$\pm(0.03\% \text{ Rdg} + 0.02\% \text{ FS})$

Open circuit voltage \approx 5 Vdc



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DO5001 - Battery Version

The DO5000 is also available with rechargeable batteries, the batteries are housed internally together with the intelligent charger circuit. The batteries used are sealed lead acid type and the built in charger maintains them in optimum condition. The performance and functionality of the DO5001 is the same as standard mains only version. When measuring on battery power the DO5001 automatically switches to single measurement mode to preserve battery life and maximise the operating time. The DO5001 will both charge the batteries and provide full 10 Amps measuring current when connected to mains supply. For real portability combined with measurement accuracy the DO5001 is the best choice.

Range	Resolution	Min. Current	Max. Current	Accuracy at full rated current
30k Ω	1 Ω	10 μ A	100 μ A	$\pm(0.03\% \text{ Rdg} + 0.02\% \text{ FS})$
3k Ω	100m Ω	100 μ A	1mA	$\pm(0.03\% \text{ Rdg} + 0.01\% \text{ FS})$
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200m Ω	10 $\mu\Omega$	1A	10A	$\pm(0.03\% \text{ Rdg} + 0.01\% \text{ FS})$
30m Ω	1 $\mu\Omega$	1A	10A	$\pm(0.03\% \text{ Rdg} + 0.01\% \text{ FS})$
3m Ω	100n Ω	1A	10A	$\pm(0.03\% \text{ Rdg} + 0.02\% \text{ FS})$

Open circuit voltage \approx 3 V dc

Battery Life: = 6000 measurements in fast mode using 10Amps measurement current, or approximately 3000 measurements in slow mode.

DO5002 - Low Current Version

With all the functionality of standard DO5000 but with limited measuring current and the ability to limit the open circuit voltage to either 20mV or 50mV. This model has been primarily developed to satisfy those applications where open circuit voltage and the measuring current needs to be limited. A typical application is for the measurement of switch contact resistance to conform to standards such as NFC93050.

Range	Resolution	Min. Current	Max. Current	Accuracy at full rated current
30k Ω	1 Ω	10 μ A	100 μ A	$\pm(0.03\% \text{ Rdg} + 0.02\% \text{ FS})$
3k Ω	100m Ω	100 μ A	1mA	$\pm(0.03\% \text{ Rdg} + 0.01\% \text{ FS})$
300 Ω	10m Ω	1mA	10mA	$\pm(0.03\% \text{ Rdg} + 0.01\% \text{ FS})$
30 Ω	1m Ω	10mA	100mA	$\pm(0.03\% \text{ Rdg} + 0.01\% \text{ FS})$
3 Ω	100 $\mu\Omega$	10mA	100mA	$\pm(0.03\% \text{ Rdg} + 0.01\% \text{ FS})$
200m Ω	10 $\mu\Omega$	10mA	100mA	$\pm(0.03\% \text{ Rdg} + 0.01\% \text{ FS})$

Note: The 2 lowest ranges of the standard DO5000 are deleted in this model
Open circuit voltage \approx 5 V dc with Limit options for 20mV and 50mV

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<p>✓ Wide Measuring Range</p> <p>The long scale length 30000 count combined with its wide memory range enables the DO5000 to tackle the most demanding tasks with ease. The resolution is 0.1$\mu\Omega$ on the lowest range and the maximum reading is 30,000Ω.</p>	<p>✓ High Accuracy Large LCD Display</p> <p>The measuring accuracy $\pm 0.03\%$ ensures the highest quality of measurement.</p>
<p>✓ Programmable Measuring Current</p> <p>The measuring current is a maximum 10 Amps on the lowest ranges and may be programmed between 10 and 100% in 1% steps. This ensures that whatever specification you are testing, the DO5000 can be configured to your requirements.</p>	<p>✓ Measuring Current</p> <p>The measuring current may be selected for forward (+I), reverse (-I) or auto average mode which automatically switches the current and displays the average reading. This further enhances the measurement accuracy and reliability eliminating errors due to thermal emf.</p>
<p>✓ Programmable Hi/Lo limits</p> <p>Hi/Lo limits may be set with audible (beeper) and visual (red/green panel lamps) indicating if the measured values are outside the limits. In addition if one of the interfaces is fitted a signal is available to control other equipment.</p>	<p>✓ Fast Measuring Mode</p> <p>The normal measuring speed is approximately 2 measurements/second, for automated testing where speed is important a FAST mode is available which measures at 50 measurements /second, ideal for production lines.</p>
<p>✓ Automatic Temperature Compensation</p> <p>Automatically compensates the measured resistance value for temperature, referencing the value to 20°C, particularly useful when measuring materials which have a relatively high temperature coefficient.</p>	<p>✓ Open Circuit Voltage Limit</p> <p>To comply with some testing standards for switches it is possible to limit the open circuit voltage to 20 or 50mV.</p>
<p>✓ Digital Calibration</p> <p>The calibration of the DO5000 is all digital with no need to open the instrument. All adjustments are made via the front panel keyboard ensuring low cost of ownership. The calibration is protected with a password and the date of the last calibration is recorded.</p>	<p>✓ Interface Options</p> <p>For those wishing to automate their resistance measurements three interfaces are available. The RS232 and IEEE-488 interfaces are fully talk/listen and generally conform to the SCPI standard. The PLC interface carries all the connectors required to perform measurements and include potential free relay contacts for limit pass/fail and analogue output.</p>
<p>✓ Data Logging</p> <p>The DO5000 has the ability to store up to 4000 readings with date and time stamp. From the stored values max, min, average values may be displayed together with a calculation of the standard deviation.</p>	<p>✓ Ohms/Length & Length Feature</p> <p>This feature provides the ability to input the length of a cable and using the measured resistance, display the resistance per length (Ω/l). The length of a cable can also be displayed.</p>



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Measurement 4 wire eliminates lead resistance Display LCD graphics panel with backlight 30,000 count Range Selection Manual / Automatic Auto Zero Value Average Hold	Systems Interface RS232 fitted as standard, IEEE-488, PLC - option Terminals 4mm safety sockets Working Temperature 0°C ... 45°C Storage Temperature -10°C ... + 60°C Mains Supply 230 V $\pm 10\%$, 115 V $\pm 10\%$ 47 ... 63Hz	Safety IEC 1010 Class 1 Dimensions 339 x 324 x 131mm (WDH) Weight Battery Version 12 kg 15 kg Accessories supplied with RS232 interface, mains cord, handbook and certificate of conformity.
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Resistance Measurement

High Accuracy Measurement Solutions ...

If you are ...	with the DO5000 you can measure ...
<ul style="list-style-type: none"> • a fuse manufacturer • an automotive component manufacturer • an electrical/electronic component manufacturer • a resistor manufacturer • an electric motor and generator manufacturer and repairer • a cable manufacturer • a transducer manufacturer 	<ul style="list-style-type: none"> • the fuse resistance on production line using FAST mode 50 measurements per second and interface. • the air bag and seat belt detonator resistance • the ABS braking system coils • the switch contact resistance • the relay contact resistance • the resistance values for quality control and tolerance sorting • the winding resistance for the determination of heat rise in motors and generators • the cable resistance (usually 1 metre length) to ensure compliance with specification • the resistance measurement of transducers



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