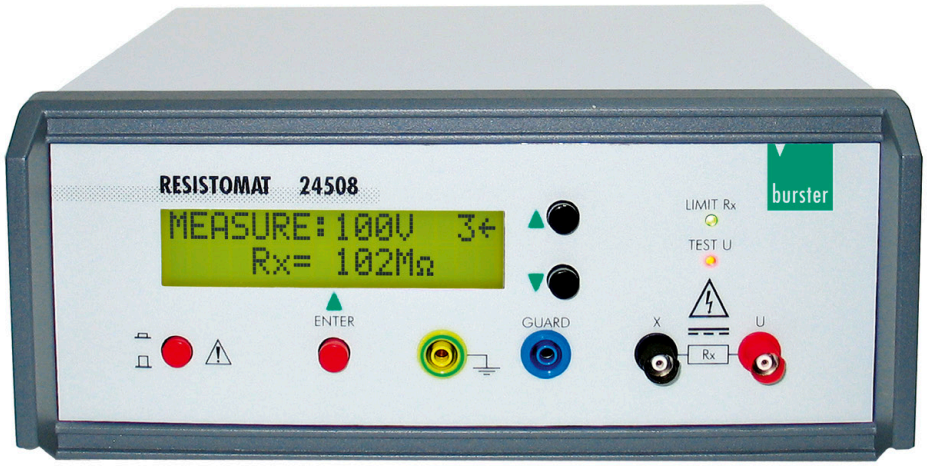
Megohmmeter RESISTOMAT®

Model 24508

Code:	24508 EN
Delivery:	ex stock
Warranty:	24 months

24508 EN



- **Resistance measurement range from 50 kΩ ... 10 TΩ**
- **Current measurement range 10 pA ... 10 mA**
- **Automatic / manual switch of measurement range**
- **Test voltage 45 V, 100 V, 250 V, 500 V**
- **Limit value indicator**
- **RS232 interface (USB and Ethernet option)**

Application

Based on its specifications, this device can be used in various applications. It is especially suitable for resistance measurement on insulating materials such as e.g. cable insulations, foils, textiles, surfaces, insulating liquids, etc. With a test voltage of 45 V, 100 V, 250 V and 500 V the device fulfils most test specifications such as e.g. DIN 51953, 53482 and 54345.
The guard switching allows single resistance measurements in a triangle wiring. This could be e.g. a two line cable with common shield or the measurement of insulating materials on a guardring measurement cell.
The selection of the measurement range is done manually or automatically. Fast subsequent measurements can be realized by the internal limit value indicator. When the measured value exceeds the limit the limit value indicator switches and activates a potential-free relay output. The megohmmeter RESISTOMAT® model 24508 is the right instrument for its use in laboratory as well as in industrial applications.

Description

The megohmmeter RESISTOMAT® model 24508 is a microprocessor controlled measurement device for insulation resistances. The device has an easy-to-use structure in a sturdy metal housing. Easy access to the interior components allows an optimal service.
The measurement range stretches from 50 kΩ up to 10 TΩ resp. 10 pA up to 10 mA with a test voltage of 45 V, 100 V, 250 V and 500 V. The configuration of the device is done via the two line LCD display with the help of the simple menu structure. It goes without saying that all configurations can also be effected via the RS232 interface. The connections for the potential-free limit output as well as the external measurement start / stop are located on the backside.

Technical Data

Resistance measurement range:	50 kΩ ... 10 TΩ divided in 8 measurement ranges
Measurement accuracy:	50 kΩ ... 1 TΩ: 2.5 % rdg. ± 1 count 1 TΩ ...10 TΩ: 10 % rdg. ± 1 count
Current range:	10 pA ... 10 mA divided in 8 measurement ranges
Measurement accuracy:	500 pA ... 10 mA: 2.5 % rdg. ± 1 count 10 pA ...500 pA: 10 % rdg. ± 1 count
Measurement voltage:	45 V, 100 V, 250 V, 500 V (other voltages upon request)
Measurement time:	freely selectable up to 999 s
Max. current in measurement circuit:	5 mA
Measurement range selection:	manually or automatically
Measurement connections:	BNC (red) measurement voltage BNC (black) measurement input 4 mm ø socket (blue) guard 4 mm ø socket (green) ground
Display:	two line LCD display measurement value 3 digits with unit
Limit value indicator:	potential-free relay output (max. 48 V, 1 A)
External measurement start:	via potential-free contact
Interface:	RS232 with 9 pin Sub Min D socket
Operating temperature range:	0 °C ... 45 °C
Storage temperature:	- 20 °C ... + 70 °C
Supply voltage:	230 V ± 10 % 50 Hz
Device security:	acc. to standard EN 61010-1
Power:	< 10 VA
Housing:	metal housing
Dimensions (W x H x D):	255 x 125 x 270 [mm]
Weight:	3 kg

Order Information

Digital Megohmmeter RESISTOMAT® incl. measurement leads 1 m length and RS232 cable	**Model 24508**

Accessories

Measurement leads 3 m length	**Model 24508-Z001**
USB Converter	**Model 9900-K351**
Ethernet Converter	**Model 9900-K453**
6-pin plug for ext. start and limit output	**Model 9942**
DKD/DAkkS Calibration Certificate	**Model 24DKD-24508**
WKS Calibration Certificate	**Model 24WKS-24508**
Guard ring electrodes for the measurements of surface or volume resistances	on request

Calibration resistors for device testing
Model series 1270

Operating voltage:		20 V ... 1000 V
Temperature coefficient:	typically maximum	± 0.15 %/K ± 0.30 %/K
Construction:		metal housing with PVC cover
Dimensions:		36 x 30 x 90 [mm]
Weight:		approx. 70 g

Model	Resistance Value	Accuracy	Voltage Coefficient
1270	10^{6} Ω	1 %	- 0.005 %/V
1271	10^{7} Ω	1 %	- 0.005 %/V
1272	10^{8} Ω	1 %	- 0.005 %/V
1273	10^{9} Ω	1 %	- 0.02 %/V
1274	10^{10} Ω	1 %	- 0.02 %/V
1275	10^{11} Ω	1 %	- 0.02 %/V
1276	10^{12} Ω	5 %	- 0.02 %/V
1277	10^{13} Ω	5 %	- 0.04 %/V
1278	10^{14} Ω	10 %	- 0.04 %/V

DKD/DAkkS Certificate Calibration

The calibration resistor model 1270 can be supplied with a DKD/DAkkS Calibration Certificate (German calibration service). The documented measurement results and tolerances are captured with standards and measurement instruments that are subject to regular comparison to the national standards of the Federal Rep. of Germany. The verification by the appointed state authorities is shown in the certificate itself as well as the calibration sign which is placed on the device.

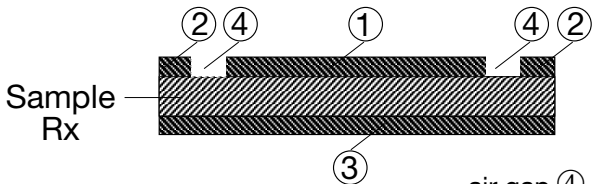
Model 12DKD-1270

WKS Certificate Calibration

The manufacturer test certificate (WKS) includes the proof of traceability national standards as well as protocolling of measurement results and uncertainties. **Model 12WKS-1270**

Application

Guard ring electrode



Guard Circuit

The guard connection is exemplified by a guard ring electrode.

Depending on the connection wiring the megohmmeter RESISTOMAT® model 24508 makes it possible to determinate the surface or volume resistance of the test sample.

For the determination of the surface resistance the measuring electrode ① is connected to the “X“ input, the guard ring ② is connected with the “U” input and the basic electrode ③ is connected with the guard input.

For the determination of the volume resistance the measuring electrode ① is connected with the “X” input, the guard ring ② with the guard input and the basic electrode ③ is connected with the “U“ input.