Megohmmeter RESISTOMAT®
Model 24508

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 fulfills 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.

- 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)
Calibration resistors for device testing  
Model series 1270

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

<table>
<thead>
<tr>
<th>Model</th>
<th>Resistance Value</th>
<th>Accuracy</th>
<th>Voltage Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>1270</td>
<td>10 kΩ</td>
<td>1 %</td>
<td>-0.005 %/V</td>
</tr>
<tr>
<td>1271</td>
<td>10 kΩ</td>
<td>1 %</td>
<td>-0.005 %/V</td>
</tr>
<tr>
<td>1272</td>
<td>10 kΩ</td>
<td>1 %</td>
<td>-0.005 %/V</td>
</tr>
<tr>
<td>1273</td>
<td>10 kΩ</td>
<td>1 %</td>
<td>-0.02 %/V</td>
</tr>
<tr>
<td>1274</td>
<td>10 kΩ</td>
<td>1 %</td>
<td>-0.02 %/V</td>
</tr>
<tr>
<td>1275</td>
<td>10 kΩ</td>
<td>1 %</td>
<td>-0.02 %/V</td>
</tr>
<tr>
<td>1276</td>
<td>10 kΩ</td>
<td>5 %</td>
<td>-0.02 %/V</td>
</tr>
<tr>
<td>1277</td>
<td>10 kΩ</td>
<td>5 %</td>
<td>-0.04 %/V</td>
</tr>
<tr>
<td>1278</td>
<td>10 kΩ</td>
<td>10 %</td>
<td>-0.04 %/V</td>
</tr>
</tbody>
</table>

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.

WKS Certificate Calibration  
The manufacturer test certificate (WKS) includes the proof of traceability national standards as well as protocolling of measurement results and uncertainties.

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 determine 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.