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Part No.: 7100.3000.G

Wolfgang Warmbier Systeme gegen Elektrostatik

◆ Untere Gießwiesen 21 ◆ 78247 Hilzingen ◆ Tel.: +49-7731-86880 ◆ info@warmbier.com

Metriso 3000

(Part No.: 7100.3000.G)

- Suitable for resistance to ground and point-to-point resistance measurements according to IEC 61340-4-1 Ed. 2.0 and IEC 61340-2-3
- Suitable for measuring the electrical resistance of footwear and flooring in combination with a person according to IEC 61340-4-5.
- Integrated data logger for 50.000 test values and USB communication port for data transmission
- Display language changeable to German / English / French / Spanish
- Report generating software "ETC" for data acquisition, recording and managing. A complete test report can be generated and archived.
- Menu driven measurement with ESD test point selection and automatic limit value allocation.
- A barcode scanner can be used to identify test points before testing
- Low ohmic measurement range $1\Omega 10k\Omega$ to measure the resistance of grounded objects
- Built-in 10 M Ω test resistor to check the instrument before usage



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Technical data:

Test voltage:
Test range:DC 10V, 100V, 500VTest range: 1Ω to 1,2T Ω Resistance: 1Ω to 1,2T Ω Temperature:
Humidity: -10° C to $+70^{\circ}$ CHumidity:10% to 90%Operation:Battery operated or with

<u>Size:</u> Weight: -10°C to +70°C 10% to 90% Battery operated or with rechargeable batteries 225 x 130 x 140 mm (WxHxD) 1,4 kg

Supplied with:

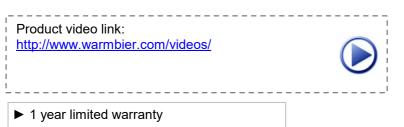
- Digital high resistance tester Metriso 3000
- USB cable
- Software "ETC" on CD-ROM
- Connecting cables
- User's manual in German / English / French

Technical specifications

| Meas. Qty. | | U _M ² | | Range | Measuring Range | Reso- lution | Intrinsic Error ¹ | Measuring Uncertainty | Overload Capacity | | |
|------------------|-----------------------------------|-----------------------------|---------|-------|-------------------|-----------------|------------------------------|--|--|------------------|--|
| R _{ESD} | 0 | | | | 10 kΩ | 1.0 kΩ 9.99 kΩ | 0.01 k | ±(5% rdg. + 10 d) | ±(7% rdg. + 10d) | | |
| | 10 V | | | | 100 kΩ | 10.0 kΩ 99.9 kΩ | 0.1 k | \pm (5% rdg. + 3 d) ⁵ | ±(7% rdg. + 3 d) | | |
| | | | | | 1 MΩ ⁴ | 100 kΩ 999 kΩ | 1 k | ±(5% rdg. + 3 d) | ±(7% rdg. + 3 d) | | |
| | | | | | 10 MΩ | 1.00 MΩ 9.99 MΩ | 10 k | ±(5% rdg. + 3 d) | ±(7% rdg. + 3 d) | | |
| | | 100 V З | / 500 V | | 100 MΩ | 10.0 MΩ 99.9 MΩ | 100 k | ±(5% rdg. + 3 d) | ±(7% rdg. + 3 d) | 500 V AC/DC TRMS | |
| | | | 3 | | 1 GΩ | 100 MΩ 999 MΩ | 1 M | ±(5% rdg. + 3 d) | ±(7% rdg. + 3 d) | | |
| | | 1 | | | 10 GΩ | 1.00 GΩ 9.99 GΩ | 10 M | ±(5% rdg. + 3 d) | ±(10% rdg. + 3 d) | | |
| | | | | | 100 GΩ | 10.0 GΩ 99.9 GΩ | 100 M | ±(8% rdg. + 3 d) | ±(10% rdg. + 3 d) | | |
| | | | | | 1 TΩ | 100 GΩ 999 GΩ | 1 G | ±(25% rdg. + 5 d) | ±(50% rdg. + 20 d) | | |
| U | - | | | | 100 V | 10.0 V 99.9 V | 0.1 V | ±(2.5% rdg. + 3 d) | ±(5% rdg. + 3 d) | 500 V AC/DC TRMS | |
| AC/DC | | | | | 500 V | 100 V 499 V | 1 V | $\pm (2.5\% \text{ tug.} + 5 \text{ u})$ | $\pm (5\% \text{ tug.} + 5 \text{ u})$ | | |
| | Display range as of 01.0 Ω | | | (| 1 00 Ω | 1.0 99.9 Ω | 0.1 <u>Ω</u> | | ±(5% rdg. + 3 d) | 500 V AC/DC TRMS | |
| R | | | | sof | 1 kΩ | 100 999 Ω | 1Ω | $\pm (2.5\%$ rdg. + 3 d) | | | |
| | | | | | 10 kΩ | 1.00 9.99 kΩ | 10 Ω | | | | |

Power supply, battery life expectancy:

The instrument is supplied including the batteries (8 x 1,5 V mignon cells)



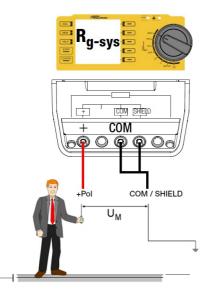
▶ Recommended calibration interval: 2 years

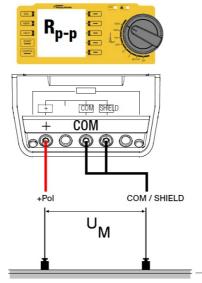
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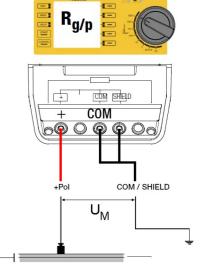


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Possible measurements with the Metriso 3000 Test-Kit







R_{G system} Resistance of person / ESD shoes / flooring to ground R_{P-P} Point to Point Resistance R_G Resistance to ground or groundable point

Accessories (optional):



Part No. 7100.3000.TF Temperature/humidity sensor



Part No. 7100.3000.SC.2D 1D/2D Barcode Scanner



Part No. 7100.3000.Z502H Battery-Pack Metriso3000 8 LSD-NiMH rechargeable



Part No. 7100.3000.Z502R Charger for battery pack Metriso3000 (EU/US/UK)

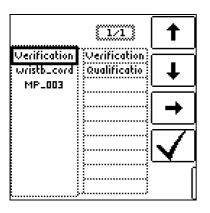
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Menu driven Measurement



1/3

wristb_int

wristbliext

wristb_sys shoe_con shoe_diss per_systA per_systB per_Met_A per_Met_B

Verification wristb_cord

wristbucord

MP_003

î

T

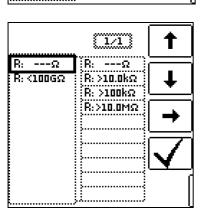
1. Measurement type selection

Select Qualification or Verification for the ESD control element

2. ESD control element selection

Example: Wrist strap. The upper limits are already predefined in the instrument.

1/10; ↓



3. Number of measurements

Enter the amount of measurements.

4. Lower Limit

If required, a *lower* limit value can be entered.

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Location

Date

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ETC - Report Assistant

| Report assistant | | | | | | |
|--|--|--------------------------|--|---|--|--|
| aster data Test objects Testing | Measurements Comments Reporti | ng | | | | |
| Performed in accordance with | | Reason for testing | | 14 | | |
| V IEC 61340-4-1 | | Verification | | | | |
| EC 61340-2-3 | | Qualification | 1 | | | |
| EC 61340-4-5 | | | | | | |
| EC 61340-4-9 | | | | | | |
| Others | | ETC - Editor | | | | |
| instruments used | | | | | | |
| | | Text (old): IEC 613 | 40-4-1 | | | |
| Metriso 3000 | | Text (new): DIN EN | 1081 | | | |
| T/F Sensor Z550B | | | | | | |
| Others | | OK Cancel | | | | |
| | | | | | | |
| | | | | | | |
| | Send protocol | Create report | Report preview | xit | | |
| | | | | — . | | |
| Wolfgang Warmbi Systeme gegen Elektrost | er tik | | ort no. 80616093939 | Test repo | | |
| Systeme gegen Elektrost | er atik | | | Test repo | | |
| Systeme gegen Elektrost | er atik C0000001 | | | Test repo | | |
| V Systeme gegen Elektrost. Master data Customer no. | atik | 2018 | 30616093939 | - | | |
| Systeme gegen Elektrost. Aaster data Customer no. | c000001 | 2011 ktronik AG | Date of measureme Order no. | 16.06.2018 20180616093939 | | |
| Systeme gegen Elektrost. Naster data Customer no. Customer | C0000001 Fa. Mustermann Eleł | 2011 ktronik AG | Date of measureme Order no. Contractor | 16.06.2018 20180616093939 Warmbier | | |
| Systeme gegen Elektrost. laster data Customer no. Customer | C0000001 Fa. Mustermann Eleł Untere Giesswiesen | 2011 ktronik AG | Date of measureme Order no. | 16.06.2018 20180616093939 | | |
| Systeme gegen Elektrost. Aaster data Customer no. Customer Representative | C0000001 Fa. Mustermann Eleł Untere Giesswiesen 78247 Hilzingen | 2011 ktronik AG | Date of measureme Order no. Contractor | 16.06.2018 20180616093939 Warmbier | | |
| V Systeme gegen Elektrost Master data Customer no. Customer Representative | C0000001 Fa. Mustermann Eleł Untere Giesswiesen 78247 Hilzingen Max Meier | 2011 ktronik AG | Date of measureme Order no. Contractor <i>Tester</i> | 16.06.2018 20180616093939 Warmbier Pfeifle | | |
| Systeme gegen Elektrost. | C0000001 Fa. Mustermann Eleł Untere Giesswiesen 78247 Hilzingen | 2011 ktronik AG | 30616093939 Date of measureme Order no. Contractor <i>Tester</i> Object description | 16.06.2018 20180616093939 Warmbier | | |
| Systeme gegen Elektrost Master data Customer no. Customer Representative Test objects | C0000001 Fa. Mustermann Eleł Untere Giesswiesen 78247 Hilzingen Max Meier | 2011 ktronik AG | B0616093939 Date of measureme Order no. Contractor Tester Object description Part number | 16.06.2018 20180616093939 Warmbier Pfeifle | | |
| Systeme gegen Elektrost Master data Customer no. Customer Representative | C0000001 Fa. Mustermann Eleł Untere Giesswiesen 78247 Hilzingen Max Meier | 2011 ktronik AG | B0616093939 Date of measureme Order no. Contractor <i>Tester</i> Object description Part number Charge | 16.06.2018 20180616093939 Warmbier Pfeifle different buildings | | |
| Systeme gegen Elektrost laster data Customer no. Customer Representative est objects | C0000001 Fa. Mustermann Eleł Untere Giesswiesen 78247 Hilzingen Max Meier | 2011 ktronik AG | B0616093939 Date of measureme Order no. Contractor Tester Object description Part number | 16.06.2018 20180616093939 Warmbier Pfeifle | | |
| Systeme gegen Elektrost Aaster data Customer no. Customer Representative est objects Test object/-location | C0000001 Fa. Mustermann Eleł Untere Giesswiesen 78247 Hilzingen Max Meier | 2011 ktronik AG | B0616093939 Date of measureme Order no. Contractor <i>Tester</i> Object description Part number Charge | 16.06.2018 20180616093939 Warmbier Pfeifle different buildings | | |
| Systeme gegen Elektrost Master data Customer no. Customer Representative est objects Test object/-location | tik C0000001 Fa. Mustermann Elek Untere Giesswiesen 78247 Hilzingen Max Meier ESD areas | 2011 ktronik AG | B0616093939 Date of measureme Order no. Contractor <i>Tester</i> Object description Part number Charge Number of units | 16.06.2018 20180616093939 Warmbier Pfeifle different buildings 2 | | |
| Systeme gegen Elektrost Master data Customer no. Customer Representative est objects Test object/-location esting Beginning of testing | C0000001 Fa. Mustermann Elek Untere Giesswiesen 78247 Hilzingen Max Meier ESD areas | 2011 ktronik AG 21 | B0616093939 Date of measureme Order no. Contractor <i>Tester</i> Object description Part number Charge Number of units End of testing | 16.06.2018 20180616093939 Warmbier Pfeifle different buildings 2 31.07.2017 | | |
| Systeme gegen Elektrost Master data Customer no. Customer Representative est objects Test object/-location esting Beginning of testing Performed in accorda | C0000001 Fa. Mustermann Elek Untere Giesswiesen 78247 Hilzingen Max Meier ESD areas 31.07.2017 nce wit IEC 61340-2- | 2011 ktronik AG 21 | B0616093939 Date of measureme Order no. Contractor <i>Tester</i> Object description Part number Charge Number of units End of testing Reason for testing | 16.06.2018 20180616093939 Warmbier Pfeifle different buildings 2 31.07.2017 Verification | | |
| Systeme gegen Elektrost Master data Customer no. Customer Representative Test objects Test object/-location Sesting Beginning of testing | C0000001 Fa. Mustermann Elek Untere Giesswiesen 78247 Hilzingen Max Meier ESD areas 31.07.2017 nce wit IEC 61340-2- | 2011 ktronik AG 21 | B0616093939 Date of measureme Order no. Contractor <i>Tester</i> Object description Part number Charge Number of units End of testing Reason for testing | 16.06.2018 20180616093939 Warmbier Pfeifle different buildings 2 31.07.2017 | | |
| Systeme gegen Elektrost Aaster data Customer no. Customer Representative Sest objects Test object/-location Sesting Beginning of testing Performed in accorda Instruments used | C0000001 Fa. Mustermann Elek Untere Giesswiesen 78247 Hilzingen Max Meier ESD areas 31.07.2017 nce wit IEC 61340-2- | 2011 ktronik AG 21 | B0616093939 Date of measureme Order no. Contractor <i>Tester</i> Object description Part number Charge Number of units End of testing Reason for testing | 16.06.2018 20180616093939 Warmbier Pfeifle different buildings 2 31.07.2017 Verification | | |
| Systeme gegen Elektrost Master data Customer no. Customer Representative rest objects Test object/-location resting Beginning of testing Performed in accorda | C0000001 Fa. Mustermann Elek Untere Giesswiesen 78247 Hilzingen Max Meier ESD areas 31.07.2017 nce wit IEC 61340-2- | 2011 ktronik AG 21 | B0616093939 Date of measureme Order no. Contractor <i>Tester</i> Object description Part number Charge Number of units End of testing Reason for testing | 16.06.2018 20180616093939 Warmbier Pfeifle different buildings 2 31.07.2017 Verification | | |

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Location

Date

Signature

Signature

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Wolfgang Warmbier

Systeme gegen Elektrostatik

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Wolfgang Warmbier Systeme gegen Elektrostatik ◆ Untere Gießwiesen 21 ◆ 78247 Hilzingen ◆ Tel.: +49-7731-86880 ◆ info@warmbier.com

| Measurements | | | | | |
|---------------------|--------------|--------|---------------------|--------------|--------|
| Building | | т | н | | |
| B0000002 Building_A | 34 | | 24.1 °C | 60.3 % | |
| | | E000 | 0005 ESD Chair 23 | | |
| Measurement type | Control item | MP | Measured value | Limit values | Passed |
| RESD | chair Rg | MP_001 | 429 MOhm 98.7 V | < 1 GOhm | Yes |
| RESD | chair Rg | MP_002 | 245 MOhm 98.7 V | < 1 GOhm | Yes |
| RESD | chair Rg | MP_003 | 355 MOhm 98.7 V | < 1 GOhm | Yes |
| | | E000 | 0006 ESD Chair 34 | | |
| Measurement type | Control item | MP | Measured value | Limit values | Passed |
| RESD | chair Rg | MP_001 | 85.2 MOhm 98.7 V | < 1 GOhm | Yes |
| RESD | chair Rg | MP_002 | 78.2 MOhm 98.7 V | < 1 GOhm | Yes |
| RESD | chair Rg | MP_003 | 76.2 MOhm 98.7 V | < 1 GOhm | Yes |
| | | E000 | 0007 ESD Chair 54 | | |
| Measurement type | Control item | MP | Measured value | Limit values | Passed |
| RESD | chair Rg | MP_001 | 5.3 GOhm 98.7 V | < 1 GOhm | No |
| RESD | chair Rg | MP_002 | 3.39 GOhm 98.7 V | < 1 GOhm | No |
| RESD | chair Rg | MP_003 | 4.71 GOhm 98.7 V | < 1 GOhm | No |

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