

# Ohm and Current Meter TO 3

## Technical Specifications

### General Data

Measuring:	control via START-/STOP-button, Remote or internal timer
Reading rate:	approx. 1 reading per second within same range
Ranges:	7 ranges, auto ranging or manual ranging
Function:	controlled by buttons, RS 232 interface or remote at rear side
Response time:	to rated accuracy 10 minutes
Displays:	2 LCD's with 2 rows by 20 digits each range display in scientific form (e.g. 16.55 E9 for 16.55 GOhm) LED's to indicate $V_M$ ON! and FAULT LED's in all buttons
Indications:	limit indication by relay contact (max. 24 V/ 0.5 A) and beeper for overrun or underrun of programmable limit window; overflow or underflow indicated in display as OVERRANGE or UNDERRANGE and send via RS 232
Power Supply:	100 VAC to 240 VAC, 50 Hz to 60 Hz approx. 20 VA
Fuses:	main fuse in Euro-socket 1.6 AT; Rx-Low fuse at the rear side 1.6 AT; fuse in the switching power supply 2 AT (qualified technician required)
Connectors:	at the rear side for LIMIT and Remote via SUB-D 9 pole as well as GND and earth pole via 4 mm panel jack
Safety class:	Schutzklasse 1 (Germany)
Protective System:	Schutzart IP 40 (Germany)
Temperature:	operating: 15 °C - 23 °C - 35 °C storage: -10 °C to +60 °C
Humidity:	max. 50 %, no condensation allowed!
Housing:	desktop case with metal hand grip
Size in mm:	340 x 150 x 300 W/H/L
Weight:	5,5 kg



### I<sub>x</sub> (Current Measurement)

Measuring Range:	0.01 x 10 <sup>-12</sup> A resolution to 1.1 x 10 <sup>-3</sup> A
Display:	3½ digit (0.0 to 1.100)
Ranges:	7; full auto ranging or manual ranging
Accuracy at 23 °C +/- 1 K:	
range 1 to 5:	+/- 0,2 % +2 digit
range 6:	+/- 0,5 % +2 digit
range 7:	+/- 1 % +2 digit
Temperature Coefficient (15 to 35 °C):	+/- 0.02 % / K
DC Input Resistance of the Current Circuit (R <sub>i</sub> ):	
range 1:	200 Ω (auto)
range 1:	1.1 kΩ
range 2:	10.1 kΩ
range 3:	100 kΩ
range 4:	1 MΩ
range 5:	10 MΩ
range 6:	100 MΩ
range 7:	1 GΩ
Overvoltage protection at input R <sub>x</sub> / I <sub>x</sub> :	+/- 10 VDC
Overcurrent protection at input R <sub>x</sub> / I <sub>x</sub> :	+/- 10 mADC

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### High-Ohm (High Resistance Measurement)

Measuring range:

- at measurement voltage

1 V:  $0.9 \times 10^3$  to  $3.3 \times 10^{12} \Omega$

10 V:  $9 \times 10^3$  to  $33 \times 10^{12} \Omega$

100 V:  $90 \times 10^3$  to  $0.33 \times 10^{15} \Omega$

500 V:  $450 \times 10^3$  to  $1.6 \times 10^{15} \Omega$

up to  $2 \times 10^{15}$  detectable  
(through current measurement)

Ranges: 7; full auto ranging or manual ranging

Accuracy at 23 °C +/- 1 K within 12 months:

range 1 to 5: +/- 0.3 % +2 digits

range 6: +/- 0.5 % +2 digits

range 7: +/- 1 % +2 digits

Temperature coefficient: 15 °C to 35 °C: +/- 0,1 % / K

Test voltage: 10 V, 100 V, 500 V  
or variable 1 V bis 500 V in  
1 V steps

Accuracy of Test Voltage: at 23 °C: +/- 0,2 %

Temperature coefficient  
of Test Voltage: +/- 0.01 % / K

Test Current: max. 3 mA at 10 k $\Omega$   
load resistance

Test Voltage Source: continuous short-circuit  
allowed

Overvoltage protection at:

$V_M$  10 V: 20 VDC

$V_M$  100 V: 200 VDC

$V_M$  500 V: 750 VDC

var.  $V_M$  1 V to 500 V:  $2 \times V_M$ , max. 750 VDC

Test Voltage  $V_M$  OFF: EUT deloads over 10 k $\Omega$   
(the contact  $V_M$  is connectet  
to GND through a 10 k $\Omega$   
resistor)

Overvoltage at  $V_M$  OFF: +/- 100 VDC

$R_x$  /  $I_x$  connectors: coax jack 4 mm/13 mm  
(DIN 47284)

$V_M$  / GND: panel jack 4 mm

