

Measuring Function	Measuring Range	Resolution at Upper Range Limit 4% 30000 / 3% 3000 ¹⁾	Input Impedance		Intrinsic Uncertainty at Max. Resolution under Reference Conditions $\pm(\dots \% \text{ rdg.} + \dots \text{ d})$		Overload Capacity ³⁾	
			DC	AC ⁶⁾	DC	AC ⁹⁾	Value	Time
					$\pm(\dots \% \text{ rdg.} + \dots \text{ d})$	$\pm(\dots \% \text{ rdg.} + \dots \text{ d})$		
V	3 V	100 μV	2.1 M Ω	2.1 M Ω // < 50 pF	0.1 + 10 ⁴⁾	0.2 + 10 (>500 d)	600 V DC AC eff sine	Cont.
	30 V	1 mV	2.1 M Ω	2.1 M Ω // < 50 pF	0.1 + 5	0.2 + 10 (>500 d)		
	300 V	10 mV	2.1 M Ω	2.1 M Ω // < 50 pF	0.1 + 5	0.2 + 10 (>500 d)		
	600 V	100 mV	2.1 M Ω	2.1 M Ω // < 50 pF	0.1 + 5	0.2 + 10 (>500 d)		
			Open-Circuit Voltage	Measuring Current, Approx.	$\pm(\dots \% \text{ rdg.} + \dots \text{ d})$			
m Ω @1A (4 L)	3 m Ω	0.001 m Ω	3.5 ... 4 V	1 A ⁷⁾	1 + 10		$\pm 0.6 \text{ V}^{11)}$	Cont.
	30 m Ω	0.001 m Ω	3.5 ... 4 V	1 A ⁷⁾	0.5 + 10 (Valid as of 10% of R)			
	300 m Ω	0.01 m Ω	3.5 ... 4 V	1 A ⁷⁾	0.5 + 10			
m Ω (4 L)	30 m Ω	0.01 m Ω	3.5 ... 4 V	200 mA	0.25 + 10		$\pm 0.6 \text{ V}^{11)}$ 4)	Cont.
	300 m Ω	0.01 m Ω	3.5 ... 4 V	200 mA	0.25 + 10 (Valid as of 10% of R)			
	3 Ω	0.1 m Ω	3.5 ... 4 V	20 mA	0.25 + 10			
	30 Ω	1 m Ω	3.5 ... 4 V	20 mA	0.25 + 10			
Ω (2 L)	300 Ω	10 m Ω	3.5 ... 4 V	1 mA	0.1 + 10 ⁴⁾		600 V DC AC eff sine	max. 10 s
	3 k Ω	100 m Ω	3.5 ... 4 V	100 μA	0.1 + 5 ⁴⁾			
	30 k Ω	1 Ω	3.5 ... 4 V	20 μA	0.1 + 5			
	300 k Ω	10 Ω	3.5 ... 4 V	20 μA	0.1 + 5			
	3 M Ω	100 Ω	3.5 ... 4 V	10 μA	0.1 + 5			
	30 M Ω	1 k Ω	3.5 ... 4 V	10 μA	1.5 + 10			
\rightarrow	300 Ω	0.1 Ω	3 V	1 mA	1 + 5			
\rightarrow	3 V	0.1 mV	3 V	1 mA	1 + 5			
			Test Voltage	Measuring Current				
M Ω @ ... V	30 M Ω	0.01 M Ω	50/100/250/500 V	< 1.5 mA	2 + 10		600 V DC/AC	max. 10 s
	300 M Ω	0.1 M Ω	50/100/250/500 V		2 + 10			
	3000 M Ω ¹⁰⁾	1 M Ω	50/100/250/500 V		3 + 10			
			$f_{\text{min}}^{2)}$		$\pm(\dots \% \text{ rdg.} + \dots \text{ d})$			
Hz	300 Hz	0.01 Hz	1 Hz		0.05 + 5 ⁵⁾		600 V AC	Cont.
	3 kHz	0.1 Hz						
	Temperature Sensor	Measuring Range	Resolution	Intrinsic Uncertainty at Max. Resolution under Reference Conditions $\pm(\dots \% \text{ rdg.} + \dots \text{ d})$ ⁸⁾				
$^{\circ}\text{C} / ^{\circ}\text{F}$	Pt 100 ⁹⁾	-200.0 ... +100.0 $^{\circ}\text{C}$	0.1 $^{\circ}\text{K}$	1 K + 5		600 V DC AC eff sine	max. 10 s	
		+100.0 ... +600.0 $^{\circ}\text{C}$		0.5 + 5				
	Pt 1000	-200.0 ... +100.0 $^{\circ}\text{C}$		1 K + 5				
		+100.0 ... +600.0 $^{\circ}\text{C}$		0.5 + 5				
	Ni 100	-60.0 ... +180.0 $^{\circ}\text{C}$		0.5 + 5				
	Ni 1000	-60.0 ... +180.0 $^{\circ}\text{C}$		0.5 + 5				

- 1) Display: 3% places in following ranges: 3 m Ω @ 1A, 30 m Ω , \rightarrow , M Ω @...V, a different sampling rate can also be selected in the rAtE menu for saving and transmitting measured values.
- 2) Lowest measurable frequency for sinusoidal measuring signals symmetrical to the zero point
- 3) At 0° to + 40° C
- 4) ZERO is displayed for "zero balancing" function.
- 5) Range 3 V~: $U_E = 0.15 V_{\text{eff/rms}} \dots 3 V_{\text{eff/rms}}$
30 V~: $U_E = 1.5 V_{\text{eff/rms}} \dots 30 V_{\text{eff/rms}}$
300 V~: $U_E = 15 V_{\text{eff/rms}} \dots 300 V_{\text{eff/rms}}$
600 V~: $U_E = 300 V_{\text{eff/rms}} \dots 600 V_{\text{eff/rms}}$
For voltages > 100 V: power limiting of $1.8 \cdot 10^6 \text{ V} \cdot \text{Hz}$
- 6) 20 ... 45 ... 65 Hz ... 1 kHz sine, see influences on page 4.
- 7) Pulsating measuring current with interval of $T = 1 \text{ s}$
- 8) Plus sensor deviation
- 9) Temperature value is based upon the characteristic curve per EN 60751.
- 10) In the case of high resistance values of greater than 300 M Ω , the capacitive influence of the person performing the measurement or the measurement cable may distort the measured value. Use short or shielded measurement cables for this reason.
- 11) In the event of an overcharge, the integrated FF 1.6 A/1000 V fuse blows.

Key

rdg. = reading (measured value), R = measuring range, d = digit(s),
2/4 L = 2/4-wire measurement

Applicable Regulations and Standards

IEC 61010-1 DIN EN 61010-1 VDE 0411 Part 1	Safety requirements for electrical equipment for measurement, control and laboratory use Part 1: General requirements
EN 60529 VDE 0470-1	Test instruments and test procedures Protection provided by enclosures (IP code)
DIN EN 61326-1 VDE 0843-20-1	Electrical equipment for measurement, control and laboratory use – EMC requirements – Part 1: General requirements