

Insulation Resistance

Scale/ Standard	Measuring Range	Nominal Range of Use	Nominal/Test Voltage U_N / U_T	Nom./Test Current I_N / I_T	Intrinsic Uncertainty ¹⁾	Measuring Uncertainty
① VDE0413	100 k Ω ... 100 M Ω	100 k Ω ... 10 M Ω	100 V 250 V 500 V 1000 V	1 mA	$\pm 2.5\%$	$\pm 30\%$ of measured value
②	10 k Ω ... 1 T Ω	100 k Ω ... 100 G Ω	100/1500 V 250/2000 V 500/2500 V 1000/5000 V	1 mA/0.7 mA 1 mA/0.5 mA 1 mA/0.4 mA 1 mA/0.1 mA	$\pm 5\%$	

ShortCircuit Current I_K 1.3 mA

Making Capacity for Insulation Resistance Measurement

Response Time < 100 G Ω : < 3 s; > 100 G Ω : < 8 s
also valid for test voltage or measuring
range changes

Direct and Alternating Voltage

Measuring range	Frequency	Internal resistance	Max. allowable voltage	Intrinsic error ¹⁾
0 ... 2000 V AC/DC	15 ... 500 Hz	5 M Ω	2200 V AC/DC max. 10 s	$\pm 5\%$

Protective Devices

Terminal	Internal Resistance	Max. Allowable Voltage	Protective Device
-Measurement cable	—	to +meas. cable/ to Guard cable: 2000 V DC/AC max. 10 s	via grounded damping diodes
+Measurement cable Insulation measurement	—	to -meas. cable/ to Guard cable: 2000 V DC/AC max. 10 s	Diodes in high-voltage cascade, ²⁾ PTC thermistor ²⁾ and series resistors
Guard cable	between Guard and meas. cables 90 k Ω	to meas. cable 2000 V DC/AC max. 10 s	PTC thermistor ²⁾ and series resistors
Battery	—	10 V	Pole protection with diodes voltage limiting in battery charger (optional)

¹⁾ with reference to scale length 97.5 mm (100 M Ω range) or 109.8 mm (1 T Ω range)

²⁾ PTC resistor cool-down period until start of new measurement:
at least 2 minutes must be observed!