

Earth Resistivity and Resistance Tester

Earth Resistance Measurements with 4, 3 and 2 Wires

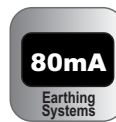


Technical Datasheet



K4106

The K4106 is a 2/3/4-wire digital Earth resistance/Earth Resistivity Tester equipped with a microcomputer and can measure earth resistances and calculate earth resistivity's (ρ), using the "Wenner" 4 pole method. This instrument is ideal for Earth measurements also in large Earthing systems because it uses a considerable test current of 80mA (max) yielding a high resolution of 1m Ω on 2 Ω range. The Earth Resistivity measurement is useful for soil surveys to establish the optimum earth electrode system design and site, to avoid extra cost of re-working electrode installations. It can also be suitable for geological investigations.



Specifications *Detailed specifications on page 2*

FUNCTION	RANGE
Measuring Method	Earth resistance: Fall-of-potential method (currents and voltages measured via the Probes) Measurement method of Earth Resistivity (ρ):
Memory Capacity	800 Data
LCD	Dot-matrix 192x64 monochrome
Over-range Indication	"OL"
Overload Protection	Between E-S(P) and between E-H(C) terminals AC280V / 10 sec.
Applicable Standards	IEC 61010-1 CAT.III 300V Pollution degree 2 IEC 61010-031 IEC 61557-1, 5 IEC 61326-1 (EMC) IEC 60529(IP54)
Power source	R6P(AA)(1.5V) x 8
Dimensions	167(L) x 185(W) x 89(D)mm
Weight	550g approx.

Standard Accessories

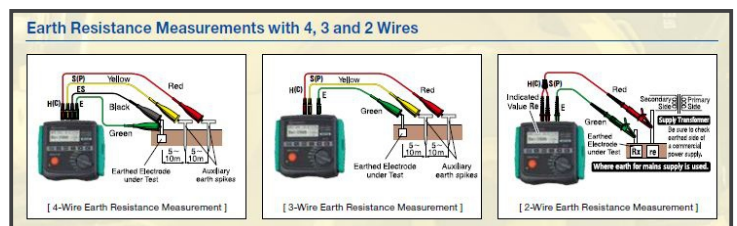
K7229A (Earth precision measurement), K7238A (Simplified measurement test leads), K8032 (Auxiliary earth spikes [2 spiks/set]) x2 sets (4 spikes in total), K8200-04 (Cord reel [4 pcs]) x1 set, K8212-USB (USB adaptor with "KEW Report(Software)"), K9121 (Shoulder strap), K9125 (Carrying case), R6 x 8, Instruction manual, Calibration certificate

Ordering Information

Branches: Johannesburg | Cape Town | Durban | Port Elizabeth | Bloemfontein
 011 872 5500 | 021 556 3091 | 031 569 1024 | 041 452 1172 | 051 430 4958
 National Telephone Number: 08 61 62 5678

Features

- High test current up to 80mA yielding resolution of 0.001 Ω on 2 Ω range.
- Advanced Filtering method (based on FFT Fast Fourier Transform) reduces noise interference for obtaining stable measurements.
- Earth resistance measurement with 4, 3 and 2 wires
- Earth resistivity tester (ρ) using 4 pole Wenner method
- 800 Data storage points
- Test current frequency in four bands of 94 / 105 / 111 / 128Hz
- Earth (Ground) Resistance 200k Ω
- Earth Soil Resistivity 200k Ω
- "Zero adjust" the Residual Resistance (Rk)
- Soil Earth Resistivity is automatically calculated
- Distance set within a range of 1.0 to 30.0m at 0.1m steps
- Several sub-results and parameters can be shown on the display: Resistance of the Auxiliary Earth Spikes, Frequency of Test Current, Voltage and Frequency of Interference (noise), Residual Resistance Rk, etc.
- Memory, recall and download - results via USB adaptor
- Warning indication of noise & high resistance of auxiliary earth spikes
- Robust design with IP54 protection.



email: sales@major-tech.com

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Earth Resistance Measurements with 4, 3 and 2 Wires



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800 Data storage points



2/3/4-Wire digital earth resistance tester

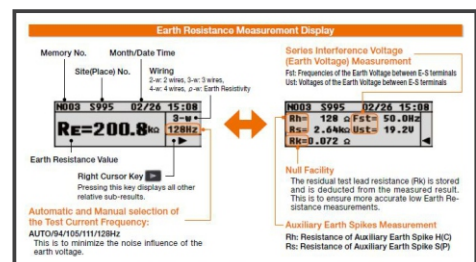


IP 54 Dust and Drip proof



Earth Soil Resistivity 200kΩ
Earth Soil Resistivity 200kΩ

Function	Range	Resolution	Measuring Range	Accuracy
Earth (Ground) Resistance Re (2/3/4 wires) Rg (at Resistivity) ρ only)	2Ω	0.001Ω	0 ~ 2.099Ω	± 2%rdg ± 0.03Ω ± 2%rdg ± 5dgt
	20Ω	0.01Ω	0 ~ 20.99Ω	
	200Ω	0.1Ω	0 ~ 209.9Ω	
	2000Ω	1Ω	0 ~ 2099Ω	
	20kΩ	10Ω	0 ~ 20.99kΩ	
	200kΩ	100Ω	0 ~ 209.9kΩ	
Auxillary Earth Resistance Rh,Rs				8% of Re+Rh+Rs
Earth Resistivity ρ	2Ω	0.1Ω · m ~ 1Ω · m (Auto-ranging)	0 ~ 395.6Ω · m	p-Accuracy depends on measurement of Rg ρ = 2 X π X a X Rg "a" is distance of auxillary earth spikes: 1.0 ~ 30.0m (0.1m steps)
	20Ω		0 ~ 3956Ω · m	
	200Ω		0 ~ 39.56Ω · m	
	2000Ω		0 ~ 395.6kΩ · m	
	20kΩ		0 ~ 1999kΩ · m	
	200kΩ			
Series Interference Voltage Ust (A.C only) <small>Note 3)</small>	200V	0.1V	0 ~ 50.9Vrms	± 2%rdg ± 2dgt (50/60Hz)
				± 3%rdg ± 2dgt (40 ~ 500Hz)
Frequency Fst	Auto-ranging	0.1Hz 1Hz	40 ~ 500Hz	± 1% ± 2dgt)
Operating Temperature	-10°C ~ 50°C, relative humidity 75% or less (no condensation)			
Storage Temperature	-20°C ~ 60°C, relative humidity 75% or less (no condensation)			



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