



60B+/D+/E+



4105A/B

Basic function	Range	Basic accuracy		
		60B*	60D*	60E*
Measuring voltage	1000V/2500V		±10%	
	2500V/5000V			±10%
	250V/500V/1000V	±10%		
Current of short circuit	250V(R=250kΩ) 1mA	±10%		
	500V(R=500kΩ) 1mA			
	1000V(R=1MΩ) 1mA			
Median resistance	<4mA		✓	✓
	<1.8mA	✓		
Median voltage 1000V	200MΩ : 6.0~199.9MΩ		±(5%±5bit)	
	2GΩ : 0.06~1.999GΩ		±(5%±5bit)	
	20GΩ : 0.6~19.99GΩ		±(5%±5bit)	
Voltage test 2500V	200MΩ : 5.0~199.9MΩ		±(5%±5bit)	
	2GΩ : 0.05~1.999GΩ		±(5%±5bit)	±(5%±5bit)
	20GΩ : 0.5~19.99GΩ		±(5%±5bit)	±(5%±5bit)
	20GΩ : 5.0~199.9GΩ			±(5%±5bit)
Jack position 5000V	2GΩ : 0.05~1.999GΩ			±(5%±5bit)
	20GΩ : 0.5~19.99GΩ			±(5%±5bit)
	20GΩ : 5.0~199.9GΩ			±(5%±5bit)
Range Insulation Resistance	250V: 0.1MΩ~20MΩ	±(4%reading ±2bit)		
	500V: 0.1MΩ~50MΩ			
	1000V: 0.1MΩ~100MΩ			
	250V: 20MΩ~500MΩ	±(1%reading ±6bit)		
	500V: 50MΩ~1000MΩ			
	1000V: 100MΩ~2000MΩ			
Measuring Voltage	AC 750V		±(1%±6bit)	±(1%±6bit)
Jack position	Insulation resistance: L, E AC750V: ACV G			

1. This digital ground resistance tester is a new generation of electrical test Instruments, beautiful and practical style.
2. Full-featured, high accuracy, convenient and reliable operation, dustproof moisture-proof structure, better suited to field use.
3. It can be used to measure a variety of power systems, electrical equipment, lightning protection equipment grounding system grounding resistance value, it Can Also measure AC voltage

Technical data

Basic Function				
4105A	Ground resistance	20Ω	±(2%+0.1Ω)	0.01Ω
		200Ω	±(2%+3d)	0.1Ω
		2000Ω		1Ω
	Ground resistance(AC current)	200V	±(2.0%+6d)	0.1V
4105B	Ground resistance	10Ω	±(3%+0.1Ω)	0.01Ω
		100Ω	±(3%+3d)	0.1Ω
		1000Ω	±(3%+8d)	1Ω
	Ground resistance(AC current)	750V	±(1.0%+10d)	1V

General features	
Display	84.8×59.8mm LCD display, max display "1999"
Over range presentation	It will display "1" on the top number when it is over range
Power	Alkaline battery LR (1.5V)×8 (can contact with power adapter) When the battery is low, it will display a low battery sign
Power Dissipation	Electricity cost (no-load)≤800mw
Work environment	Temperature 0~40; relative humidity 30%~80RH
Product size	175(L)×110(W)×70(D)mm
Weight	Approx: 680g (include battery)



4105C

Earth Resistance Soil Resistivity Tester

Earth Resistance Soil Resistivity Tester is specially designed and manufactured for measuring earth resistance, soil resistivity, earth voltage, AC voltage. Adopting the latest digital and micro-processing technology, precise 4-pole, 3-pole and simple 2-pole method for earth resistance measurement, importing FFT and AFC technology, with a unique function of anti-interference capability and the ability to adapt to the environment, consistency of repeat testing, to ensure high precision, high stability and reliability for prolonged measure, which is widely used in electric power, telecommunications, meteorology, oil field, construction, lightning protection, industrial electrical equipment and other earth resistance, soil resistivity, earth voltage, AC voltage measurement.

General Specification

Function	fMeasurement of 2/3/4-pole earth resistance, soil resistivity, earth voltage, AC voltage
Power Supply	DC 9V (Zi-Mn dry battery R14S 1.5V 6 PCS, continuous standby for 300 hours)
Measurement Range	Earth Resistance: 0.00Ω-30.00kΩ Soil Resistivity: 0.00Ωm-9000kΩm
Measuring Mode	Precise 4-pole measurement, 3-pole measurement, simple 2-pole measurement
Measuring Method	Earth Resistance: rated current change-pole method, measurement current 20mA Max Soil Resistivity: 4-pole measurement (Wenner method) Earth Voltage: average rectification(between P(S)-ES)
Test Frequency	128Hz/111Hz/105Hz/94Hz(AFC)
Short-circuit Test Current	AC 20mA max
Open-circuit Test Current	AC 40V max
Test Voltage Wave	Sine wave
Electrode Distance Range	Can be set 1m-100m
Shift	Earth Resistance: 0.00Ω-30.00kΩ, automatic shift Soil Resistivity: 0.00Ωm-9000kΩm, automatic shift
Backlight	Blue screen backlight, suitable for dim places
Display Mode	4-digital super-large LCD display, blue screen backlight
Measuring Indicator	During measurement, LED flash indicator, LCD count down display, progress bar indicator
LCD Frame Dimension	128mm×75mm
LCD Window Dimension	124mm×67mm
Dimension	L×W×H: 215mm×190mm×95mm
Standard Test Wire	4 wires: each for red 20m, black 20m, yellow 10m, and green 10m
Simple Test Wire	2 wires: each for red 1.6m and black 1.6m
Auxiliary Earthing Rod	4 rods: Φ10mm×150mm
Measuring Rate	Earth voltage: about 3 times/second Earth resistance, soil resistivity: about 5 seconds/time

General Specification

Function	
Measuring Times	Over 5000 times (Short-circuit test, interval time should be at least 30 seconds)
Line Voltage	below AC 600V
RS232 Interface	Possess RS232 interface, software supervision, storage data can be uploaded to computer, saved or printed.
Communication Wire	One piece of RS232 communication wire, with length 1.5m
Data Storage	300 sets, "MEM" icon storage indicator, flash display "FULL" icon to indicate storage is full
Data Hold	Data hold function: "HOLD" icon display
Data Access	Data read function: "READ" icon display
Overflow Display	Exceeding measuring range overflow function: "OL" icon display
Interference Test	Recognize interference signal automatically, "NOISE" icon display when interference voltage exceed 5V
Auxiliary Earthing Test	Can measure auxiliary earth resistance, 0.00kΩ-30kΩ(100R+rC<50kΩ, 100R+rP<50kΩ)
Alarm Function	When measuring value exceeds alarm setting value, there is "Toot-toot-toot" alarm hint
Battery Voltage	When battery voltage decreases to about 7.5V, battery voltage low icon will display, reminding to replace battery.
Power Consumption	Standby: about 20mA (Backlight shut off) Boot and with backlight: about 45mA (25mA without backlight) Measurement: about 100mA (Backlight shut off)
Weight	Total weight: 4.5kg (including package) Tester: 1443g (including battery) Testing wires: 1560g Auxiliary earthing rods: 935g (4pcs)
Working Temperature & Humidity	-10 C -40 C , below 80%rh
Storage temperature & humidity	-20 C -60 C , below 70%rh
Overload Protection	Measuring earth resistance: between each interfaces of C(H)-E-P(S)-ES, AC 280V/3 seconds
Insulation Resistance	Over 20MΩ (between circuit and enclosure it is 500V)
Withstanding Voltage	AC 3700V/rms (Between circuit and enclosure)
Electromagnetic Features	IEC61326(EMC)
Protection Type	IEC61010-1 (CAT III 300V, CAT IV 150V, Pollution 2), IEC61010-031, IEC61557-1 (Earth resistance), IEC61557-5 (Soil resistivity), JJG 366-2004

3. Intrinsic error and performance indicators under base conditions


Category	Measurement Range	Intrinsic Error	Resolution
Earth Resistance (R)	0.00Ω-30.00Ω	±2%rdg±3dgt	0.01Ω
	30.0Ω-300.0Ω	±2%rdg±3dgt	0.1Ω
	300Ω-3000Ω	±2%rdg±3dgt	1Ω
	3.00kΩ-30.00kΩ	±4%rdg±3dgt	10Ω
Soil Resistivity (ρ)	0.00Ωm-99.99Ωm	According to the precision of R (ρ=2πaR a: 1 m-100m, π=3.14)	0.01Ωm
	100.0Ωm-999.9Ωm		0.1Ωm
	1000Ωm-9999Ωm		1Ωm
	10.00kΩm-99.99kΩm		10Ωm
	100.0kΩm-999.9kΩm		100Ωm
1000kΩm-9000kΩm	1kΩm		
Earth Voltage	AC 0.0-600V	±2%rdg±3dgt	0.1V



4106C



4106C

Basic Function	Range	Resolution	Accuracy
Ground resistance	0.00Ω ~ 30.00Ω	0.01Ω	±2%rdg±3dgt
	30.0Ω ~ 300.0Ω	0.1Ω	±2%rdg±3dgt
	300Ω ~ 3000Ω	1Ω	±2%rdg±3dgt
	3.00kΩ ~ 30.00kΩ	10Ω	±4%rdg±3dgt
Ground voltage	AC 0.0 ~ 600V	0.1V	±2%rdg±3dgt
Soil resistivity	0.00Ω m ~ 99.99Ωm	0.01Ω m	According to the measurement accuracy of R (ρ=2πaR; a: 1 m~100m; π=3.14)
	100.0Ω m ~ 999.9Ωm	0.1Ω m	
	1000Ωm ~ 9999Ωm	1Ω m	
	10.00kΩ m ~ 99.99kΩm	10Ω m	
	100.0kΩm ~ 999.9kΩm	100Ω m	
1000kΩm ~ 9000kΩm	1kΩ m		
Measuring method	Grounding resistance: rated current pole changing method, measuring current 20mA Max. Soil resistivity: quadrupole method (Wenner method). Grounding voltage: average value rectification		
Test frequency	128Hz/111Hz/105Hz/94Hz(AFC)		
Test voltage waveform	Sine wave		
Short circuit test current	AC 20mA max		
Data storage	300 groups		
Data reference	"READ" symbol		
Open circuit test voltage	AC 40V max		
Data hold	"HOLD" symbol		
Overflow display	"OL" symbol		
Test line	red 20m, black 20m, yellow 10m, green 10m, red 1.6m, black 1.6m each 1 (total 6)		
Auxiliary ground rods	4 * φ 10mm×150mm		
USB interface	With USB interface, software monitoring, stored data can be uploaded to the computer, saved and printed; one 1.5m long communication line		
Alarm function	When the measured value exceeds the alarm setting value, alarm prompt "beep-beep-beep--"		
Auto power off	Auto power off after 15 minutes		
Overload protection	Measuring ground resistance: AC 280V/3 seconds between each port of C(H)-E, P(S)-ES		
Interference test	Automatically identify the interference signal, and the "NOISE" symbol indicates when the interference voltage is larger than 5V		
Auxiliary grounding test	With auxiliary grounding resistance value test function, 0.00kΩ ~ 30kΩ (100R+rC<50kΩ, 100R+rP<50kΩ)		
Protection level	IP65 (with cover closed)		
Battery voltage	When the battery voltage drops to about 7.5V and show the low battery voltage symbol "  ", please replace the battery		
Working current	Standby: about 20mA (backlight off); turn on the backlight: about 45mA (backlight off 25mA); measurement: about 100mA (backlight off)		
Accessories	Meter: 1; Grounding probe: 4; Test lead: 4; Simple test lead: 2; USB communication cable: 1; CD: 1; Meter bag: 1; Special charger: 1		
Power	DC 7.4V 2600mAh rechargeable lithium battery		
Color	Black + Orange		
LCD size	LCD size 128mm×75mm; LCD display area 124mm×67mm		
Weight	4765kg (including packaging)		
Size	280mm×260mm×160mm		
Standard packing box gross weight	about 6KG		

Clamp Earth Resistance Tester

6410 series of Clamp Grounding Resistance Tester, in the measurement of a grounding system with loop, does not require breaking down the grounding down lead, and no need the auxiliary electrode. It is safe, fast and simple in use.

6410 series clamp grounding resistance meter can measure ground faults which cannot be measured by traditional methods. It can be used in applications where traditional methods cannot be measured, because the 6410 series clamp grounding resistance meter measures the combined value of grounding body resistance and grounding lead resistance.

2. Specification

Model	Jaw Size (mm)	Range of Resistance (Ω)	Range of Current (A)	Storage Function	Alarm Function
6410	55×32	0.01--1000	--	99 Units	Yes
6410A	55×32	0.01--200	--	99 Units	Yes
6410B	55×32	0.01--1000	0.0--30.0	99 Units	Yes



6410

2.2. Ranges and Accuracy

Mode	Range	Resolution	Accuracy
Resistance Range	0.010Ω-0.099Ω	0.001Ω	± (1%+ 0.01Ω)
	0.10Ω-0.99Ω	0.01Ω	± (1%+ 0.01Ω)
	1.0Ω-49.9Ω	0.1Ω	± (1%+ 0.1Ω)
	50.0Ω-99.5Ω	0.5Ω	± (2%+ 0.5Ω)
	100Ω-199Ω	1Ω	± (3%+ 1Ω)
	200Ω-395Ω	5Ω	± (6%+ 5Ω)
	400-590Ω	10Ω	± (10%+ 10Ω)
Current Range	600Ω-1000Ω	20Ω	± (20%+ 20Ω)
	0.00mA-9.95mA	0.05mA	± (2.5%+ 1mA)
	10.0mA-99.0mA	0.1mA	± (2.5%+ 5mA)
	100mA -299mA	1mA	±(2.5%+10mA)
	0.30A-2.99A	0.01A	± (2.5%+ 0.1A)
	3.0A-9.9A	0.1 A	± (2.5%+ 0.3A)
	10.0A-19.9A	0.1 A	± (2.5%+ 0.5A)
20.0A-30.0A	0.1 A	± (3%+ 1A)	

2.3. Technical Specifications

Power Source: 6VDC (4pcs 5# alkaline battery)

Working Temperature: -10 ° -55 ° C

Relative Humidity: 10%-90%

LCD: 4-digit LCD, 47mm (L) × 28.5mm (W)

Meter Size: 275mm (L); 85mm (W); 56mm (H)

Meter Weight (including batteries): 1130g

Protection Level: Double insulation

Structural Feature: Clamp and jaw type

Range Shift: Automatic

External Magnetic Field: < 40A/m

External Electric Field: < 1V/m

Single Measuring Time: 1 second

Measurement Resistance Frequency: > 1KHz

Maximum Resistance Measurement Resolution: 0.001 Ω

Resistance Measurement Range: 0.01-1000 Ω

Current Measuring Range: 0.00-30.0A(C type)*

Measured Current Frequency: 50/65Hz

Storable Measurement Data: 99 Units

Setting Range of Resistance Alarm Critical Value: 1-199 Ω

Setting Range of Current Alarm Critical Value: 1-499mA(C type)*

Note: with "*" item is limited to C type

6412



Technical data

Basic Function		6412/6412 ⁺	
Measure mode	Measuring range	Resolution	Basic accuracy
Resistance	0.010-0.099Ω	0.001Ω	±(1%+0.01Ω)
	0.10-0.99Ω	0.01Ω	±(1.5%+0.01Ω)
	1.0-49.9Ω	0.1Ω	±(1%+0.1Ω)
	50.0-99.5Ω	0.5Ω	±(2%+0.5Ω)
	100-199Ω	1Ω	±(3%+1Ω)
	200-395Ω	5Ω	±(6%+5Ω)
	400-590Ω	10Ω	±(10%+10Ω)
Current Only for 6412	600-1300Ω	20Ω	±(20%+20Ω)
	0-80mA	0.05mA	±(2.5%+1mA)
	80-650mA	0.5mA	±(2.5%+2mA)
	650mA-4A	5mA	±(2.5%+10mA)
	4-30A	10mA	±(2.5%+20mA)

Technical data

Model	6415	6415A
Features	Bench top	Box top
Function	Grounding resistance, soil resistivity, DC resistance, grounding voltage, AC current, leakage current measurement	
Range	Two-three-four-wire grounding resistance measurement: 0.00Ω~30.00kΩ	
	Grounding resistance measurement by selection method: 0.00Ω~3000Ω	
	Double-clamp method grounding resistance measurement: 0.01~100Ω	
	Grounding voltage: AC 0.0V~100.0V	
	Soil resistivity: 0.00Ωm~9000kΩm	
Measurement mode	Precision four-wire, three-wire method, simple two-wire, selection method, double-clamp method to measure grounding resistance	
	AC current: AC 0.00mA~600.0A	
Measurement method	Two-three-four-wire method measurement: pole-changing method, test current 20mA Max	
	Selection method measurement: pole changing method, test current 20mA Max	
	Double clamp method: non-contact mutual inductance measurement method, test current 1mA Max	
	Soil resistivity: quadrupole method (Wenner method)	
	DC resistance: pole changing method	
	AC current: average value rectification (clamp)	
	Grounding voltage average value rectification (between P(S)-ES interface)	
Backlight	Controllable white screen backlight, suitable for use in dark places	
Display	4-digit large LCD display with backlight	
Measurement indication	LED flashing indication during measurement, LCD countdown display	
Measurement time	AC current: about 2 times/second; grounding voltage: about 2 times/second; grounding resistance: about 7 seconds/time	
Measurement frequency	more than 5000 times (short circuit test, test once, stop for 30 seconds and test again)	
Line voltage	measurement below AC 600V	
Communication interface	With RS232 interface, the stored data can be uploaded to the computer through the software	
Data storage	2000 groups	
Overload protection	Measuring ground resistance: AC 280V/3 seconds between each port of C(H)-E, P(S)-ES	
Insulation resistance	above 20MΩ (500V between circuit and case)	
Withstand voltage	AC 3700V/rms (between circuit and case)	
Power supply	DC 9V (6 pcs R14S 1.5V zinc-manganese dry battery, continuous standby for 300 hours)	DC 8.4V (rechargeable battery, continuous standby for 300 hours)
Accessories	Meter: 1; Grounding probe: 4; Test lead: 4; Simple test lead: 2; USB communication cable: 1; CD: 1; Meter bag: 1; Special charger: 1	
Standard test lines	red 20m, black 20m, yellow 10m, green 10m each	
Auxiliary ground rods	4φ 10mm×150mm	
Simple test lines	red 1.6m, black 1.6m each	
Communication line	RS232 communication line 1, length 1.5m	
Current clamp	blue and black plugs, red and black plugs each	
Current clamp size	185mm×115mm×43mm	
Current clamp diameter	φ 68mm	
Power	DC 7.4V 2600mAh rechargeable lithium battery	
Current clamp lead length	2m	
Color	Black + Orange	
LCD size	128mm×75mm; display area: 124mm×67mm	
Weight	1232g	2560g
Size	215mm×190mm×95mm	280mm×260mm×160mm
Standard inner packing	Neutral kraft carton	



6415

6412⁺



Basic Function		140 Clamp-leaker	
Range	30mA~300mA 30A/300A	Range	Accuracy
Sampling rate	Approx. 2times/s	0.00mA~9.99mA	±1.2%±5dgt
Resolution	0.01mA	10.0mA~300.0mA	±1.5%±5dgt
Measuring range	0.00~300.0A(50/60Hz)	0.00A~9.99A	±1.2%±5dgt
Test way	CT pincer points	10.0A~99.9A	±1.5%±5dgt
Power	DC 3V Button-type battery LR-44*2 or SR-44*2	100A~199.9A	±2%±5dgt
Rate Power	Approx. 5mW	200.0A~300.0A	±4%±5dgt

Special Function	6412	6412 ⁺	140
Low battery indication	✓	✓	✓
Date hold/storage	✓	✓	✓
Auto power off	✓	✓	✓
Relative humidity	10%~90%	10%~90%	
Working environment	-10℃~55℃	-10℃~55℃	0~40℃
Outer magnetic field	<40A/m	<40A/m	
Outer electric field	<1V/m	<1V/m	
Unit measuring time	1s	1s	
Resistance measuring frequency	>1KHz	>1KHz	
Highest resolution of Resistance measuring	0.001Ω	0.001Ω	
Frequency of measured current	50Hz sine		
Storage measuring data	99group	99group	60 group
Setting range of resistance critical value alarm	1~199Ω	1~199Ω	
Setting range of current critical value alarm	1~499mA	1~499mA	
Protection scale	Double insulated	Double insulated	
Operation way	Auto range	Auto range	Auto range
Clamp size	32mm	32mm	40mm
Power	6V(4×1.5V)	6V(4×1.5V)	DC 3V

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6415A