技術資料

Fluke 1625-2 GEO Earth Ground Tester Kit

主要功能

The Fluke 1625-2 is a unique earth ground tester that can perform all four types of earth ground measurement:

- 3- and 4-Pole Fall-of-Potential (using stakes)
- 4-Pole Soil Resistivity testing (using stakes)
- Selective testing (using 1 clamp and stakes)
- Stakeless testing (using 2 clamps only) Adjustable limits - for quicker testing
- IP56 rated for outdoor use
- Rugged carrying case

產品概述: Fluke 1625-2 GEO Earth Ground Tester Kit

The Most Complete Stakeless Earth Ground Tester

The Fluke 1630-2 FC Stakeless Earth Ground Clamp is the kind of high-quality, rugged tool you expect from Fluke. Heavy-duty clamp jaw stays in alignment and in calibration even in every day, on-the-job industrial environments. Test the grounding components of equipment in hard-to-reach spaces, including areas that are indoors or fully paved and do not permit driving auxiliary test stakes. Stay on line—identify ground loop resistance without the need to disconnect then reconnect the earth electrode from the system.

Stakeless earth ground measurement testing

- You can also perform earth ground tests in places you’ ve not considered before: inside buildings, power pylons, or anywhere you don’ t have access to soil
- The Fluke 1625-2 earth ground tester can measure earth ground loop resistances using only clamps
- With this test method, two clamps are placed around the earth ground rod and each are connected to the tester

The Fluke 1625-2 improves your earth ground testing process with:

- Automatic Frequency Control (AFC) - identifies existing interference and chooses a measurement frequency to minimize its effect, providing more accurate earth ground value
- R* measurement - calculates earth ground impedance at 55 Hz to more accurately reflect the earth ground resistance that a fault-to earth ground would see
- Adjustable limits - for quicker testing

The Fluke 1625-2 gives you versatility in earth ground testing

- 3- and 4-pole fall-of-potential, earth resistance loop testing
- 4-pole soil resistivity testing
- Selective earth ground rod testing using 1 clamp
- Stakeless earth ground rod testing using 2 clamps

The Fluke 1625-2 offers you simpler, faster earth ground tests than ever before

- The 1625-2 offers internal memory storage up to 1500 records
- Accessible via USB port for rapid data transfer and viewing of results
- This earth ground tester also gives you world-class accessories that take the tedium out of earth ground testing

Additional tool features

- Heavy duty stakes can be hammered into dry, hard soil.
- And new color-coded wires make setup simple and help eliminate mistakes and speed up setup and tear down time as much as 50%
- IP56 rated for outdoor use
- Rugged carrying case

規格: Fluke 1625-2 GEO Earth Ground Tester Kit

General Specifications	
Memory	Inteal memory storage up to 1500 records accessible via USB port
Measuring function	Interference voltage and frequency, earthing resistance 3- and 4-pole with/without clip-on current transformer, resistance 2-pole with AC, 2- and 4-pole with DC
Display	4 digit (2999 Digit) - 7 segment liquid crystal display, with improved visibility
Operation	Ceal rotary switch and function keys
Temperature Range	
Operating temperature	-10°C to 50°C (14°F to 122°F)
Storage temperature	-30°C to 60°C (-22°F to 140°F)

Temperature coefficient	±0.1% of reading/°C < 18°C > 28°C
Type of protection	IP56 for case, IP40 for baery door according to EN60529
Max voltage	Waing – socket "clamp" to socket E, ES, S or H
	U_{rms} = 0 V
	Sockets E, ES, S or H to each other in any combination, max. U_{rms} = 250 V (pertains to misuse)
Safety	Protection by double and/or reinforced insulation. Max. 50 V to earth per IEC61010-1. Pollution degree 2
Quality standard	Developed, designed and manufactured to comply with DIN ISO 9001
Exteal field influence	Complies with DIN 43780 (8/76)
Auxiliary power	6 x 1.5 V alkaline (IEC LR6 or type AA)
Baery life span	With IEC LR6/type AA: typ. 3,000 measurements (R_E+R_H ≤ 1 kΩ)
	With IEC LR6/type AA: typ. 6,000 measurements (R_E + R_H > 10 kΩ)
Dimensions (W x H x D)	250 x 133 x 187 mm (9.75 x 5.25 x 7.35 in)
Weight	≤ 1.1 kg (2.43 lb) without accessories 7.6 kg (16.8 lb) incl. accessories and baeries in carrying case
Case material	Polyester
Measurement of Interference Voltage DC + AC (U_{ST})	
Measuring limits of error: method	Full wave rectification
Measuring range	1 V to 50 V
Display range	0.0 V to 50 V
Resolution	0.1 V
Frequency range	DC/AC 45 Hz to 400 Hz sine
Accuracy	±(5% of rdg + 5 digit)
Measuring sequence	Approx. 4 measurements/s
Inteal resistance	Approx. 1.5 MΩ
Max. overload	U_{rms} = 250 V
Measurement of Interference Frequency (F)	
Measuring limits of error: method	Measurement of oscillation period of the interference voltage
Measuring range	6.0 Hz to 400 Hz
Display range	16.0 Hz to 299.9 Hz to 999 Hz
Resolution	0.1 Hz to 1 Hz
Range	1 V to 50 V
Accuracy	±(1% of rdg + 2 digit)
Earthing Resistance (RE)	

Measuring method	Current and voltage measurement with probe as IEC61557-5
Open circuit voltage	20/48 V, AC
Short circuit current	250 mA AC
Measuring frequency	94, 105, 111, 128 Hz selected manually or automatic. (AFC) 55 Hz in function R[1]
Noise rejection	120 dB (16 2/3 , 50 , 60, 400 Hz)
Max. overload	U_{rms} = 250 V

Electrical Measurement Specifications				
Iinsic Error or Influence Quantity	Reference Conditions or Specified Operating Range	Designation Code	Requirements or Test in Accordance with the Relevant Parts of IEC 1557	Type of Test
Iinsic error	Reference conditions	A	Part 5, 6.1	R
Position	Reference position ±90°	E1	Part 1, 4.2	R
Supply voltage	At the limits stated by the manufacturer	E2	Part 1, 4.2, 4.3	R
Temperature	0°C and 35°C	E3	Part 1, 4.2	T
Series interference voltage	See 4.2 and 4.3	E4	Part 5, 4.2, 4.3	T
Resistance of the probes and auxiliary earth electrodes	0 to 100 x R_A but ≤ 50 kΩ	E5	Part 5, 4.3	T
System frequency	99% to 101% of the nominal frequency	E7	Part 5, 4.3	T
System voltage	85% to 110% of the nominal voltage	E8	Part 5, 4.3	T
Operating error	$B = \pm(\lvert A\rvert + 1{,}15\sqrt{E_1^2 E_2^2 E_3^2 E_4^2 E_5^2 E_6^2})$		Part 5, 4.3	R
	B[%] = ± B/fiducial value x 100% A = iinsic error En = variations R = routine test T = type test			
Measuring range	0.020 Ω to 300 kΩ			
Display range	0.001 Ω to 2.999 Ω			
	3.00 Ω to 29.99 Ω			
	30.0 Ω to 299.9 Ω			
	0.300 kΩ to 2.999 kΩ			
	3.00 kΩ to 29.99 kΩ			
	30.0 kΩ to 299.9 kΩ			

Resolution	0.001 Ω
	0.01 Ω
	0.1 Ω
	1 Ω
	10 Ω
	100 Ω
Accuracy	±(2% of rdg + 2 digit)
Operating error	±(5% of rdg + 5 digit)
Measuring time	Typical 8 seconds with a fixed frequency 30 sec. max. with AFC and complete cycle of all measuring frequencies
Additional error because of probe-and auxiliary earth electrode resistance	$R_H(R_S + 2000\ \Omega)/R_E \times 1.25 \times 10^{-6}\% + 5$ digits
Measuring error of R_H and R_S	Typ. 10% of $R_E + R_S + R_H$
Max. probe resistance	≤ 1 MΩ
Max. auxiliary earth electrode resistance	≤ 1 MΩ
Automatic check if error is kept within the limits required by IEC61557-5. If after a measurement of probe-, auxiliary earth electrode- and earthing resistance, a measurement error of higher than 30% is assumed because of the influencing conditions, the display shows a waing symbol and a notice that RS or RH are too high.	
Automatic Switchover of Measuring Resolution in Dependence to Auxiliary Earth Electrode Resistance R_H	
RH with U_{meas} = 48 V	< 300 Ω
	< 6 Ω
	< 60 Ω
	< 600 Ω
RH with U_{meas} = 20 V	< 250 Ω
	< 2.5 kΩ
	< 25 kΩ
	< 250 kΩ
Resolution	1 mΩ
	10 mΩ
	100 mΩ
	1 Ω
Selective Measurement of the Earthing Resistance (R_E Clamp)	
Measuring method	Current and voltage measurement with probe as per EN61557-5 and current measurement in the individual branch with additional current transformer (patent applied for).

Open circuit voltage	20/48 V AC	
Short circuit current	250 mA AC	
Measuring frequency	94, 105, 111, 128 Hz selected manually or automatically (AFC), 55 Hz (R^1)	
Noise rejection	120 dB (162/3, 50, 60, 400 Hz)	
Max. overload	Max. U_{rms} = 250 V (measurement will not be started)	
Measuring range	0.020 Ω to 300 kΩ	
Display range	0.001 Ω to 2.999 Ω	
	3.00 Ω to 29.99 Ω	
	30.0 Ω to 299.9 Ω	
	0.300 kΩ to 2.999 kΩ	
	3.00 kΩ to 29.99 kΩ	
Resolution	0.001 Ω	
	0.01 Ω	
	0.1 Ω	
	1 Ω	
	10 Ω	
Accuracy	±(7% of rdg + 2 digit)	
Operating error	±(10% of rdg + 5 digit)	
Additional error because of probe- and auxiliary earth typ. electrode resistance	$R_H(R_S + 2000\ \Omega)/R_{ETOTAL}$ x 1.25 x 10^{-6}% + 5 digits	
Measuring error of R_H and R_S	Typ. of 10% of $R_{ETOTAL} + R_S + R_H$	
Measuring time	Typ. 8 sec. with a fixed frequency 30 sec. max. with AFC and complete cycle of all measuring frequencies.	
Minimal current in single branch to be measured	0.5 mA	With transformer (1000:1)
	0.1 mA	With transformer (200:1)
Max. interference current through transformer	3 A	With transformer (1000:1)
1. With recommended current clamps/transformers.		
Resistance Measurement (R~)		
Measuring method	Current and voltage measurement	
Measuring voltage	20 V AC, square pulse	
Short circuit current	> 250 mA AC	
Measuring frequency	94, 105, 111, 128 Hz selected manually or automatically (AFC)	
Measuring range	0.020 Ω to 300 kΩ	

Display range	0.001 Ω to 2.999 Ω
	3.00 Ω to 29.99 Ω
	30.0 Ω to 299.9 Ω
	300 Ω to 2999 Ω
	3.00 kΩ to 29.99 kΩ
	30.0 kΩ to 299.9 kΩ
Resolution	0.001 Ω
	0.01 Ω
	0.1 Ω
	1 Ω
	10 Ω
	100 Ω
Accuracy	±(2% of rdg + 2 digit)
Operating error	±(5% of rdg + 5 digit)
Measuring time	Typical 6 seconds
Max. interference voltage	24 V, with higher voltages measurement will not be started
Max overload	U_{rms} max. = 250 V
Resistance Measurement (R DC)	
Measuring method	Current- voltage measurement as per IEC61557-4 possible
Measuring voltage	20 V DC
Short circuit current	250 mA DC
Formation of measured value	With 4-pole measurement wires on H, S, ES can be extended without additional error. Resistances > 1 Ω in wire E can cause additional error of 5m Ω/Ω.
Measuring range	0.020 Ω to 300 kΩ
Display range	0.001 Ω to 2.999 Ω
	3.00 Ω to 29.99 Ω
	30.0 Ω to 299.9 Ω
	300 Ω to 2999 Ω
	3.0 kΩ to 29.99 kΩ
	30.0 kΩ to 299.9 kΩ

Resolution	0.001 Ω
	0.01 Ω
	0.1 Ω
	1 Ω
	10 Ω
	100 Ω
Accuracy	±(2% of rdg + 2 digit)
Operating error	±(5% of rdg + 5 digit)
Measuring sequence	Approx. 2 measurements/s
Measuring time	Typical 4 second including reversal of polarity (2-pole or 4-pole)
Maximum interference voltage	≤ 3 V AC or DC, with higher voltages measurement will not be started
Maximum inductivity	2 Henry
Maximum overload	U_{rms} = 250 V
Compensation of Lead Resistance (R_K)	
Compensation of lead resistance (R_K) can be switched on in functions R_E 3-pole, R_E 4-pole (clamp), R AC, and R DC 2-pole	
Formation of measured value	$R_{display} = R_{measured} - R_{compensated}^2$
2. Value of setpoint ey RK = 0.000 Ω, variable from 0.000 to 29.99 Ω by means of measuring adjustment.	
Stakeless Ground Loop Measurement (Two Clamp Stakeless)	
Switch position	RA 4-pole (two clamp Stakeless)
Resolution	0.001 Ω to 0.1 Ω
Measuring range	0.02 Ω to 199.9 Ω
Accuracy	±(7% rdg + 3 digit)
Operating error	±(10% rdg + 5 digit)
Measuring voltage	Vm = 48 V AC (primary)
Measuring frequency	128 Hz
Noise current (IEXT)	Max. IEXT = 10 A (AC) (RA < 20 Ω)
	Max. IEXT = 2 A (AC) (RA > 20 Ω)
Measuring principle: Stakeless measurement of resistance in closed loops using two current transformers. Automatic range selection. The information regarding stakeless ground loop measurements is only valid when used in conjunction with the recommended current clamps at the minimum distance specified.	

機型

Fluke 1625-2 Kit

Fluke 1625-2 GEO Earth Ground Tester Kit

Includes:

- GEO Earth Ground Tester
- User’ s Manual
- Batteries
- Quick Reference Guide
- USB Cable
- 2 Clamps
- C1620 Professional Carrying Case
- 4 Earth Ground Stakes
- 3 Cable Reels

Fluke. *保持您的世界運作不懈。*

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