



ISO 9001 : 2000, BS EN 9001
APPROVED BY BVQI



Quality and reliability is our tradition

KYORITSU

EARTH TESTER MODEL 4200



TRUE RMS

- The earth resistance from 0.05 to 1200Ω can be measured without the auxiliary earth spikes. (The Multiple Earthing System.)
- **True RMS**
Accurate true RMS readings of AC current including distorted waveform from 1mA to 30.0A
- **Noise Check Function**
A function to detect current, which effects on an earth resistance measurement and display "NOISE" mark on the LCD.
- **Memory function**
Save and display up to 100 measurement data.
- Data hold function / Buzzer function / Back light function
- Compliant with Safety Standards of IEC 61010-1 : CAT.IV 300V Pollution degree2



KEW EARTH CLAMP TESTER

MODEL 4200

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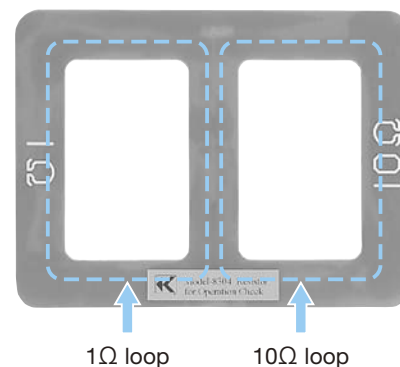
Specification

| Function | Range | Resolution | Measuring range | Accuracy |
|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------------|-------------|
| Earth resistance Auto range | 20Ω | 0.01 (Ω)※ | 0.00~20.99 (Ω) | ±1.5%±0.05Ω |
| | 200Ω | 0.1 (Ω) | 16.0~99.9 (Ω) | ±2%±0.5Ω |
| | | | 100.0~209.9 (Ω) | ±3%±2Ω |
| | | | 160~399 (Ω) | ±5%±5Ω |
| | 1200Ω | 1 (Ω) | 400~599 (Ω) | ±10%±10Ω |
| 600~1260 (Ω) | | | — | |
| AC current (50Hz / 60Hz) | 100mA | 0.1 (mA) | 0.0~104.9 (mA) | ±2%±0.7mA |
| | 1000mA | 1 (mA) | 80~1049 (mA) | |
| Auto range | 10A | 0.01 (A) | 0.80~10.49 (A) | |
| | 30A | 0.1 (A) | 8.0~31.5 (A) | |
| Operating system | Earth resistance function: Constant voltage injection, Current detection, (Frequency : Approx.2400Hz) Dual Integration AC current function : Successive Approximation | | | |
| Over-range indication | "OL" is displayed when input exceeds the upper limit of a measuring range | | | |
| Response time | Approx. 7 seconds (Earth resistance) Approx. 2 seconds (AC current) | | | |
| Sample rate | Approx. 1 times per second | | | |
| Power source | DC6V : R6P (sizeAA manganese battery) × 4pcs, or LR6 (sizeAA alkaline battery) × 4pcs | | | |
| Current consumption | Approx. 50mA (max. 100mA) | | | |
| Measurement time | Approx. 12 hours (when R6P is used) Approx. 24 hours (when LR6 is used) | | | |
| Auto power-off | Turns power off about 10 minutes after the last button operation. | | | |
| Applicable standards | IEC 61010-1 : 2001 (CAT.Ⅳ 300V Pollution degree2) | | | |
| Withstand voltage | AC5320Vrms / 5 seconds Between the Transformer jaws fitted parts and Case enclosure (except for jaws) | | | |
| Conductor size | Approx. 32mm max. | | | |
| Dimension | 246(L) × 120(W) × 54(D)mm | | | |
| Weight | Approx. 780g (including batteries) | | | |
| Accessories | Battery R6P : 4pcs Instruction manual : 1pc Resistor for operation check (MODEL 8304) : 1pc Hard case (MODEL 9128) : 1pc | | | |

★Crest factor ≤ 3 (50Hz / 60Hz, peak value shall not exceed 60A) ※Counts equal to or less than 4 counts are corrected to 0.

Accessories

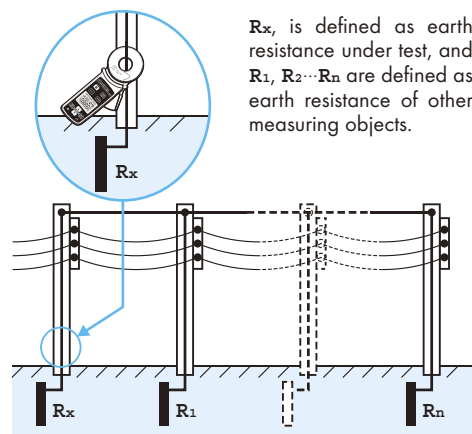
● Resistor for operation check



● Hard case



Why earth resistance can be found by only clamping it?

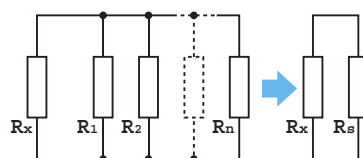


R_x is defined as earth resistance under test, and R_1, R_2, \dots, R_n are defined as earth resistance of other measuring objects.

Of these earth resistances, R_1, R_2, \dots, R_n can be considered that they are connected in parallel.

And can be regarded as a combined resistance R_s . The R_s can be regarded small enough against R_x since a combined resistance consists of several resistances.

Following is an equivalent circuit diagram of this circuit.



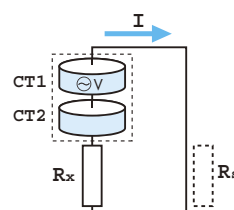
Voltage V is applied to the object (Resistance R_x) measured from the voltage injection transformer CT1, and the current I corresponding to the earth resistance is flowed.

The current I is detected with detection transformer CT2, and object (Resistance R_x) measured can be put out by the calculation. (refer to the right chart)

$$\frac{V}{I} = R = R_x + R_s$$

$$R_x \gg R_s = \frac{1}{\sum_{i=1}^n \frac{1}{R_i}}$$

$$\frac{V}{I} = R_x$$



! Safety Warnings :

Please read the "Safety Warnings" in the instruction manual supplied with the instrument thoroughly and completely for correct use. Failure to follow the safety rules can cause fire, trouble, electrical shock, etc. Therefore, make sure to operate the instrument on a correct power supply and voltage rating marked on each instrument.

■ For inquiries or orders :



**KYORITSU ELECTRICAL
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