

# Ground wire detection

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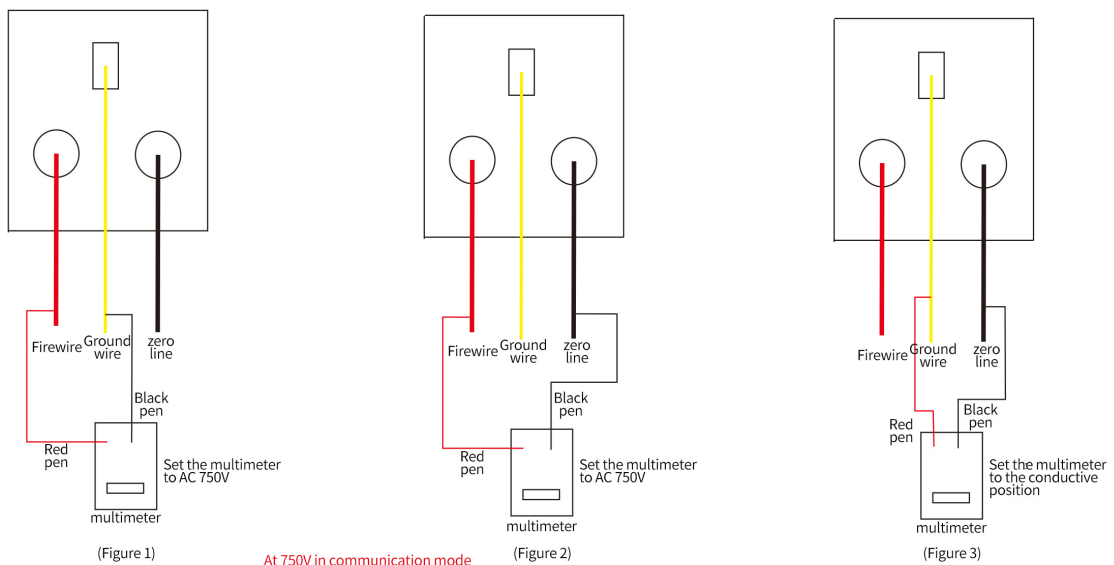
# instructions

## The detection method for whether the grounding is good:

Method 1: Multimeter Test (except for Step 3 which requires power-off detection, the other 2 steps are all conducted with power on)

1. Step 1, set the multimeter to AC mode 750V, connect the red pen to the live wire and the black pen to the ground wire (as shown in Figure 1), measure the voltage value V1 and record it
2. Step 2, set the multimeter to AC mode 750V, connect the red pen to the live wire and the black pen to the neutral wire (as shown in Figure 2), measure the voltage value V2 and record it
3. Step 3, set the multimeter to the conductive mode, connect the red pen to the ground wire and the black pen to the neutral wire (as shown in Figure 3), and measure whether the multimeter beeps and has a resistance value

**Conclusion:** When the voltage V1 measured in step 1 is  $220V \pm 10V$ , the voltage V2 measured in step 2 is  $220V \pm 10V$ , and the result measured in step 3 is that the multimeter will beep and have a resistance value, and the above conditions are met at the same time, it can be judged that this grounding is effective

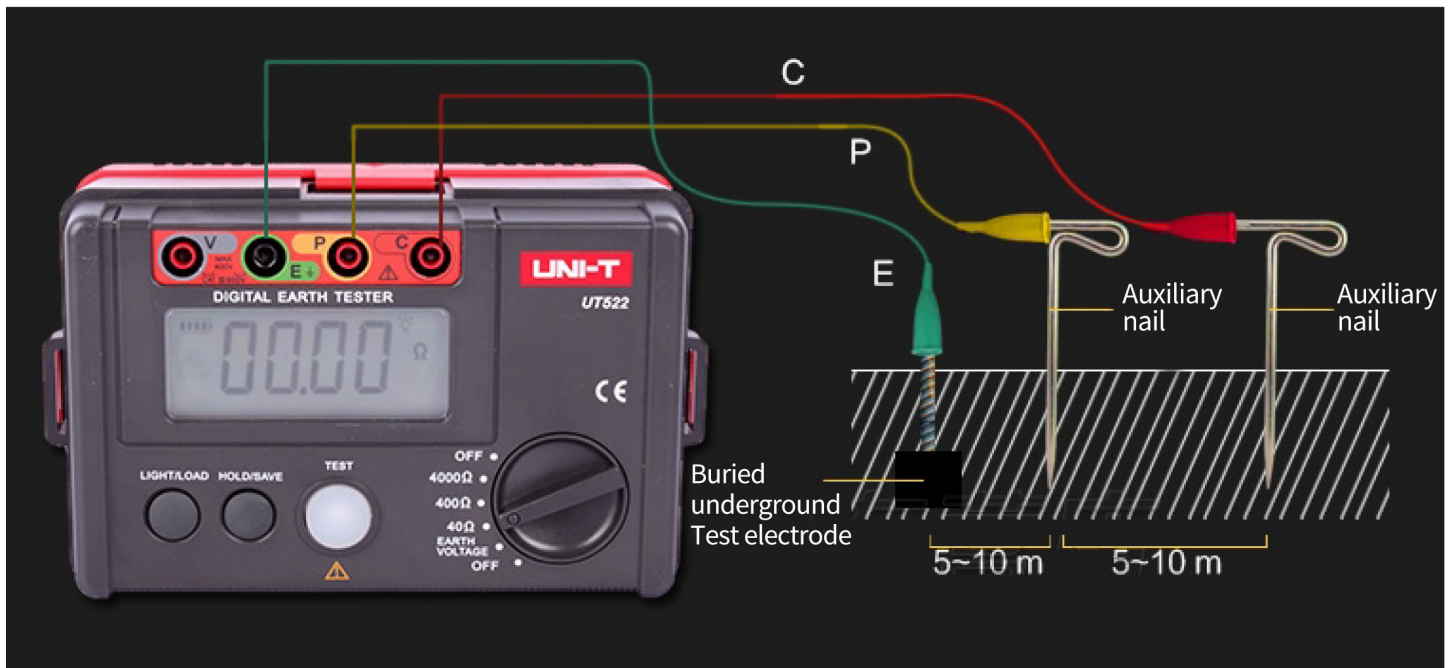


Physical picture of multimeter

## Method 2: Shake Table Test

Set the meter to the resistance range of 40 Ω, find the place where the ground wire is introduced, and balance and fix the auxiliary nail at 5M and 10M of the ground wire, as shown in the following figure (note: the grounding nail must be driven in damp soil)

**Conclusion:** If the test resistance value is  $\leq 4 \Omega$ , it indicates that introducing a ground wire is effective.



## Method 3: Socket Tester Testing Method

As shown in the figure below, each PIN pin is connected to the corresponding ground wire, neutral wire, and live wire

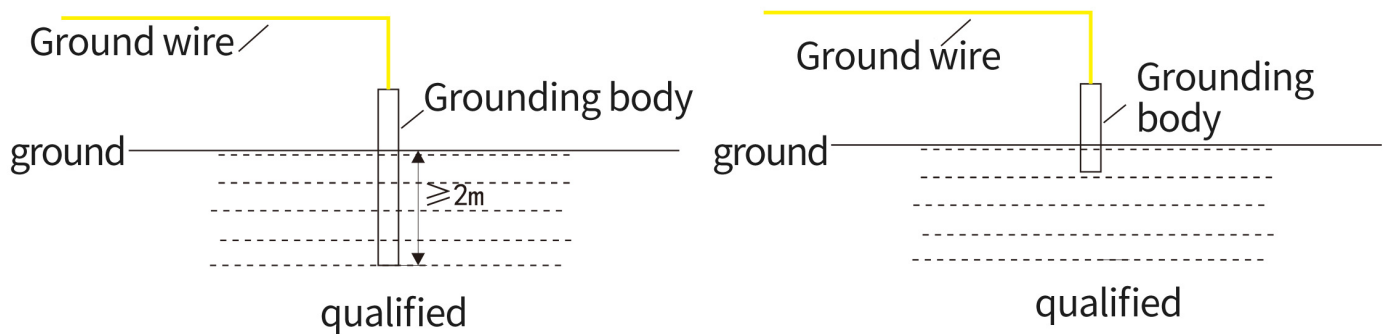
**Conclusion:** Use the table on the corresponding instrument to determine if the grounding is good.



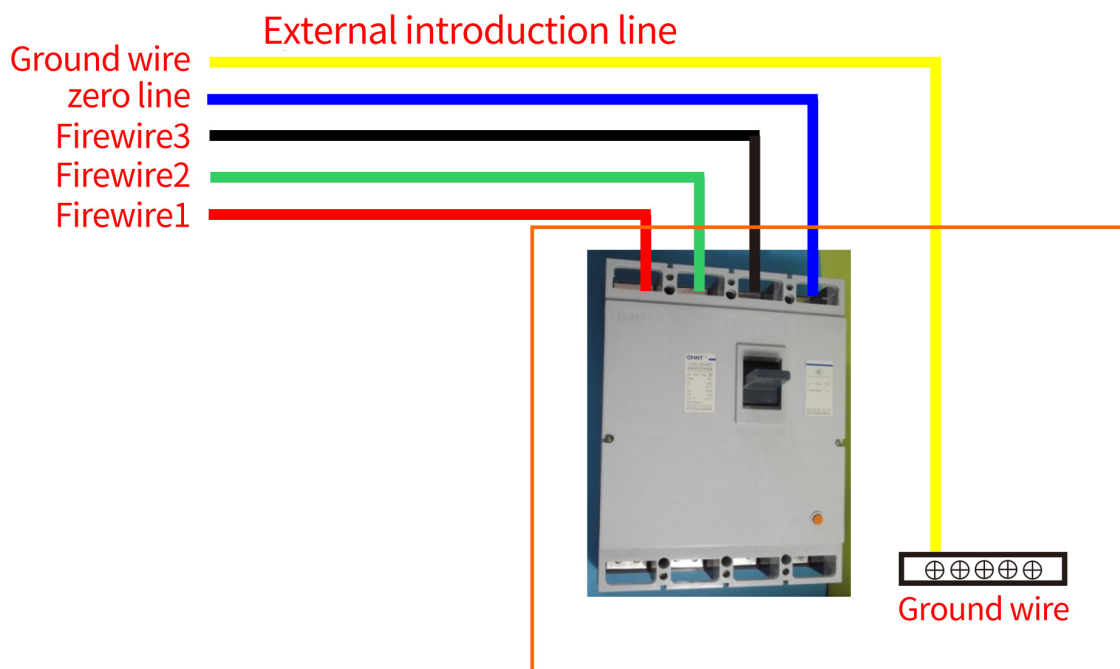


## Grounding requirements (for reference only):

Scenario 1: Self grounding wire generally requires the grounding body to be more than 2 meters deep into the ground. When connecting the grounding body to the ground wire, it is required to have good and stable contact without looseness, otherwise it will cause poor grounding, as shown in the following figure:



Scenario 2: External grounding wire is introduced. If it is a three-phase power supply, there are usually 5 cable lines introduced into the distribution box, 3 live lines, 1 neutral line, and 1 ground line. As shown in the following figure:



## The consequences of poor grounding:

1. It will affect the product's life cycle, and more seriously, there will be a large number of dead lights, making the product unable to function properly. At work, there may initially be a lack of color in the light beads, and then the entire light may not turn on.
2. It is also likely to have an impact on safety, as the lack of grounding protection can more easily cause fires or more serious consequences.