Innovative Utility Products

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GFL 6000

Ground Fault Locator

Operating Instructions

Warning – Read the entire instruction booklet before operation. Failure to do so could result in injury or death.

Product Description

The GFL 6000 is designed to locate cable faults that result in an electrical path to ground. This is accomplished by the unit detecting the ground radiant bleed out that is produced from the faulted cable. You will need a separate cable locator to locate the path of the entire cable for correct operation.

The GFL 6000 comes with:

- GFL 6000 A-frame
- GFL 6000 Receiver
- GFL 6000 dual power transmitter (rechargeable battery included)
- Ground Stake
- Wall charger
- Operating Manual

Unit Overview

The GFL 6000 Transmits a voltage charge repeatedly every 4-5 seconds. The charge is transmitted to the faulted cable through the output leads. Once the voltage charge reaches the fault in the cable, a portion of the electrical current will leak out to the earth ground surrounding the cable. The amount of current leaked to ground will depend on resistance of the fault and path to the ground stake vs the other available paths for the current to flow.

The A-frame (with receiver mounted to it) is then inserted into the ground along the path of the cable. As the voltage charges is pulsed down the cable, some of the current will leak out in to ground and travel back to the ground stake. As it does so, some of the current will travel up the A-frame to the receiver and cause the needle on the receiver to kick in the direction of the fault. The needle with bounce back and forth after a current spike is detected so only the initial kick will indicate the direction of the fault.

The receiver determines which probe on the A-frame receives the current first and cause the initial movement of the needle to kick in the direction of the fault.

The Transmitter is powered by an internal 12v rechargeable SLA battery. The battery is charged with a 110VAC wall adapter that is provided with the unit. To recharge the battery just simply plug the wall adapter into any 110v AC wall socket and then insert the other end into the 5.5mm charging socket located next to the power switch on the front of the unit.

The receiver is powered by 1 9v battery (included). The battery is changed by removing the 4 outside screws on the back of the receiver. The old battery can then be easily removed and a new one installed.

Operation Instructions

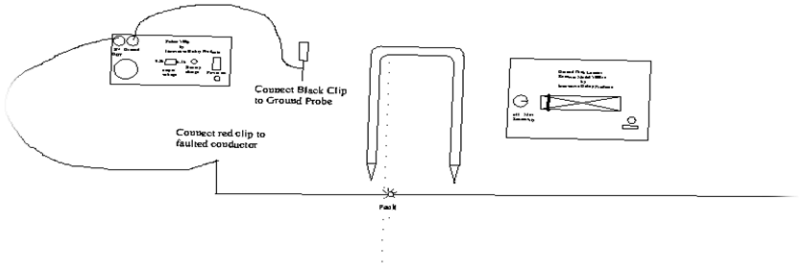
1. Ensure that the cable that is to be tested is free from any power and then isolate it by disconnecting it at both ends.
2. Assemble the A-frame and receiver by sliding the bracket attached to the bottom of the receiver into the bracket located on the top of the A-frame and then lock into place.
3. With the transmitter off, connect the black output lead to the provided ground stake and then insert the stake into the ground as far as possible.
4. With the transmitter off, connect the red output lead to the cable to be tested.
5. Once the transmitter is correctly connected and ensuring that no on is touching the cable, select the voltage to be applied by switching the output rocker switch to either 4800 volts or 6400 volts. Once the desired voltage is selected lift the red toggle switch guard up and flip the toggle switch to the on position. A green light should come on indicating the presence of high voltage and machine operation. The speaker should then beep every time the transmitter pulses (about every 4-5 seconds). Do not touch any component, cable, or stake while the Transmitter is operating.
6. Turn the receiver on and place the A-frame probes in the ground parallel to the path of the cable. Insert the probes into the ground adequately to ensure proper signal reception. When one of the probes on the A-frame receives a signal, the needle will then kick in the direction of the fault. Remember that only the initial kick of the needle is important.
7. Continue to move the A-frame along the cable path following the initial needle kicks of the receiver.

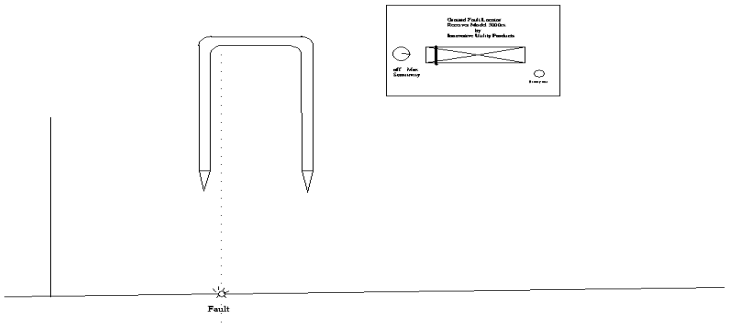
Comments/Notes

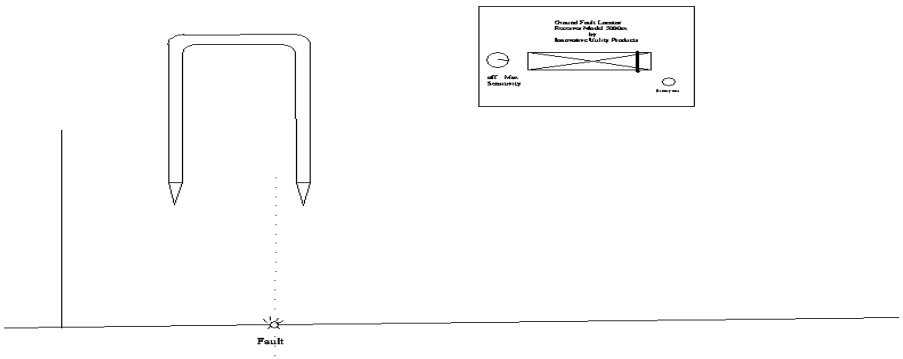
Warranty - Innovative Utility Products offers a 12-month warranty on all manufacture defects from the manufacture date on the unit. IUP will replace or repair any unit within a 12-month period unless it has shown signs of abuse or misuse. The unit must be returned to Innovative Utility Products for evaluation before any warranty repairs will be considered

8. Once you pass the fault in the cable the initial kick of the meter will kick in the reverse direction indicating that you have passed the fault. This indicates that the fault is between the last 2 A-frame insertion points.
9. Continue moving the A-frame along the path in the direction of the initial kick. Once the A-frame is located directly over the fault the needle should cease to move. Verify this by moving the A-frame in a circle shape around the fault watching the initial kick of the needle to verify the location of the fault. Mark the spot for repair.
10. Before repair, turn the transmitter off and disconnect it from the cable. **Never touch the transmitter, leads, ground stake, or cable while the transmitter is turned on.**

Figure 1







Tips:

If there is more than one fault in the cable there could be some confusion as all faults will result in needle kicks in their direction. The sensitivity can be adjusted to look for weaker or stronger signals that can indicate different faults.

It is possible for the needle to kick toward the transmitter if the A-frame is placed too close to it. Continue to move down the cable to gain access to signals from fault. It is also possible for the needle kicks to cease between the transmitter and the fault. If this happens, continue to move along the cable and the meter will begin moving again when signal is received.

If the A-frame cannot be inserted in the ground (concrete or asphalt) try using wet sponges. This can increase the conductivity of the A-frame.