



KIPOR POWER SYSTEMS

TECHNICAL SERVICE BULLETIN

#2013-006

Subj: Polarity Testers

I have received many calls from repair shops that are checking out Kipor generators, either upon sale of the generator or when completing a repair.

Typically, the question is “Why am I getting odd indications with the typical polarity indicator?” The explanation can be very simple, the polarity checker is designed for household circuits, NOT generators. In a household circuit, the “common” lead and the “ground” lead are bonded together in the electrical service panel, and this is connected to a grounding rod (earth ground).

In a conventional generator (no inverter), the neutral is NOT connected to the ground, so the indicator will show an “open ground.” This is normal operation and should not be considered abnormal.

In an inverter generator, there is no neutral to connect to a ground, so again, you will show an open ground. It is possible to have any of several other combinations show up on the tester, hot/ground reversed, hot neutral reversed, or even all lights on at the same time. Again, this is normal operation for an inverter generator.

The following page shows examples of each of these and will hopefully clear up any remaining questions.

Issued 3/27/2013 By

National Technical Services Manager

Polarity Test Readings

Testing household circuits

These testers are designed to check typical residential service with a hot wire (Pin 2) neutral wire (Pin 3) and a ground wire (Pin 1). In this type of wiring, the white wire (Pin 3) is connected to a terminal strip in the service panel. The green wires (Pin 1) go to a similar strip. Both wires are bonded together in the service panel with a heavy ground wire which is in turn connected to a grounding rod

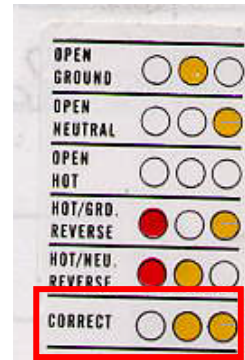
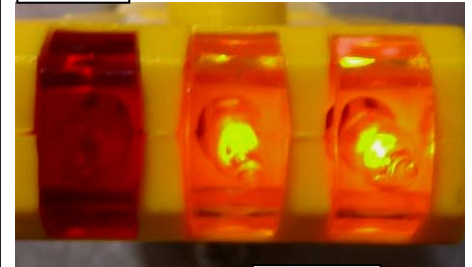



Fig. 1



	VAC	
20 A Receptacle		
	118~119	1+2
	0.86	1+3
	118~119	2+3

Testing Conventional Generators

A conventional generator has a hot wire (Pin 2) and a neutral wire (Pin 3). The neutral wire (Pin 3) is not connected to a ground (Pin 1) so the tester will always show an open ground. Additionally, you can check for continuity from the ground pin to the frame or the generator

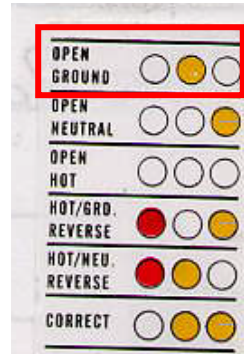
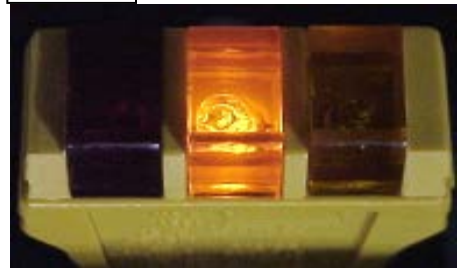



Fig. 2



	VAC	
20 A Receptacle		
	8.4~11	1+2
	110~112	1+3
	119~121	2+3

Testing Inverter Generators

An inverter generator has no neutral to connect to a ground so the tester will always show an open ground. The typical inverter 120 volt receptacle has two hot legs (Pin 2 & 3) and a ground (Pin 1). You can check for proper wiring with a volt-ohm meter. Check for 60-64 volts on each leg as per Figure 3. Additionally, you can check for continuity from the ground pin to the frame or the generator ground stud.

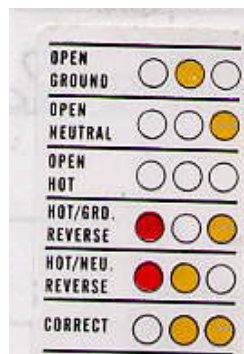
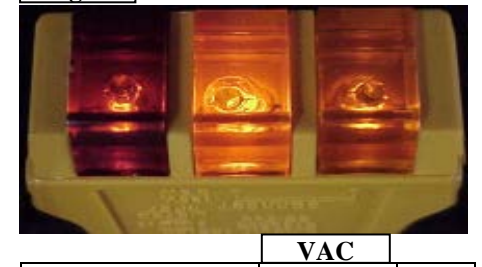



Fig. 3



	VAC	
20 A Receptacle		
	59~61	1+2
	59~61	1+3
	119~122	2+3