

November 15, 2019

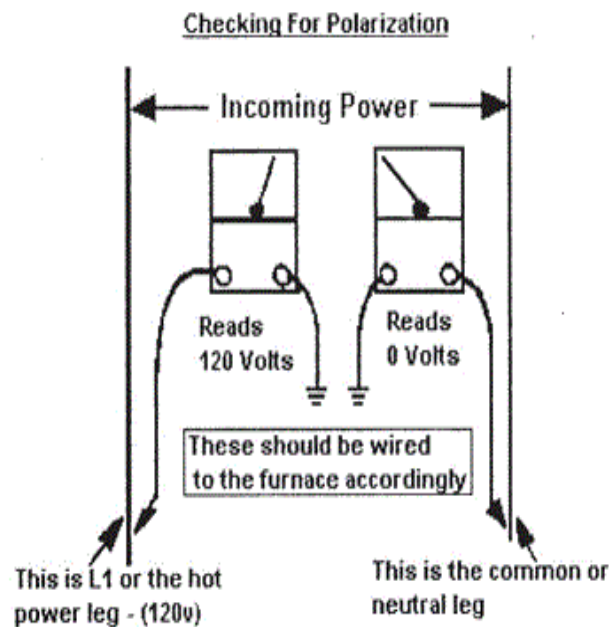
## Phasing / Polarity Faults in Furnaces

If you get a 9 code on a furnace, it could be the result of one of the following;

- Improper grounding (check furnace ground connections thoroughly)
- Reversed line polarity
- Transformer phasing

**To test polarity:** (see figure “Checking for Polarization”)

- Place your meter leads on L1 and Ground, you should read 120v
- Place your meter leads between Common and Ground, you should read 0 volt.
- If you read 0 volts on L1 to Ground and 120 volts on Ground to Common the polarity is incorrect and must be changed



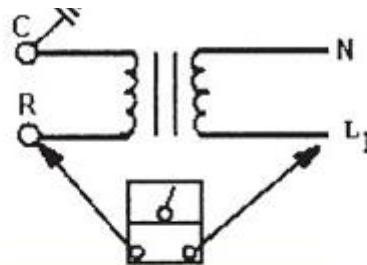
**To test transformer phasing:** (see figure “Testing Transformer Phasing”)

- Place your meter leads between the L1 going the primary side of the transformer and the secondary, R (24v) terminal of the transformer. If you read approximately 96 volts the primary and secondary of the transformer are in phase.

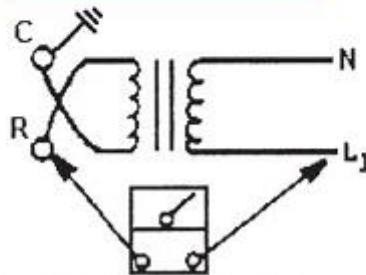
**Notes:**

- **Normal conditions:** If you read 96 at the primary and 24 at the secondary this adds up 120 volt which is normal average voltage. (L1 to secondary R + secondary R to C = L1 to Common)
- **Abnormal Conditions:** If you were to read 144 volts the primary and secondary are out of phase

**Testing Transformer Phasing**



Reads 96 Volts - In Phase



Reads 144 Volts - Out of Phase