

Neon Transformer Installation Guide

⚠ DANGER!

**HIGH
VOLTAGE**



- ◆ Remove primary power before servicing the sign or transformer in any way.
- ◆ Secondary-Circuit Ground-Fault Protected (SCGFP) transformers will NOT provide protection against electrical shock. Potentially hazardous high voltage can be present.
- ◆ Service and/or installation should only be performed by qualified personnel.
- ◆ Do not assume power is removed from transformer if ground fault trip occurs (the transformer will automatically make 3 reset attempts within approximately 10 seconds.)
- ◆ Installation must be in total compliance with the National Electrical Code®, the requirements of Underwriters Laboratories and applicable local codes.
- ◆ Failure to properly ground this transformer will result in the transformer case and any metal connected to it (enclosure, conduit, sign frame, etc.) becoming electrified when a secondary ground fault exists.

This Neon Transformer is suitable for use only in dry and damp locations and is designated Outdoor Non-Weatherproof Dry or Damp Type 2.

INSTALLING the FRANCE 15030 or 9060 P8G-3UE Neon Transformer (see installation diagrams on reverse side):

1. Securely mount the transformer in an approved metallic enclosure (transformer can, raceway, sign body, etc.).
2. Run the service wires through conduit into approved enclosure.
3. Connect the line (or "hot") service wire (black – 120 volt, or red - 277 volt) to the transformer's black or red wire. Connect the neutral service wire (white) to the transformer's white wire.
4. Bond the service grounding wire (green or bare) to the sign enclosure per UL48 and the National Electrical Code. Electrically connect another wire (green or bare) to this same service ground connection or to a terminal secured to a grounded part of the sign enclosure. Connect the free end of this wire to the identified service ground ("G") terminal or green wire on the transformer. (Alternatively, the transformer may be grounded by bonding its baseplate to the sign enclosure. Proper bonding may require the removal of paint from the baseplate at the point of bonding.) Improper grounding can result in electrifying all metal connected to the transformer during a secondary ground fault condition.
5. Run GTO wires from the first neon tubing electrodes through separate conduit, raceway, sign body, etc. to each transformer secondary high voltage bushing. (These wires should be kept as short as possible, but may not exceed 20 feet.) Sign tubing may be connected to two high voltage outputs on one end or on opposite ends of transformer. (Please reference Figures 1 & 2 on reverse side of this page).

Note: High voltage connection hardware is color-coded - only connect GTO between one brass and one silver output.

Note: Per National Electrical Code, special care must be taken to avoid intertwining of the secondary and primary wiring. Keep the high voltage secondary wiring well-separated from the primary wiring.

6. Make sure to securely tighten all service and high voltage output terminal nuts.
7. Replace cover on transformer box, raceway, etc., if applicable.

TROUBLESHOOTING a tripped 15030 or 9060 P8G-3UE Transformer:

⚠ DANGER! HIGH VOLTAGE - Assure transformer is properly grounded before troubleshooting. (See note 4 above)

Service Switch does not operate without proper grounding of transformer.

DIAGNOSTIC LED OPERATION	
LED Fault Code	Indicates
Steady ON	Operating normally
Continuous Flashing	In Service Mode
1 - Flash	15 second Diagnostic & Auto Reset Mode
2 - Flash	Secondary Ground Fault with service ground connected
3 - Flash	Secondary Ground Fault when service ground not connected
4 - Flash	Input Voltage exceeds 120% of rated
5 - Flash	Line & Neutral reversed on input connections

- ◆ Ensure the line and neutral service wires are connected properly and are not reversed. Black or red wires should be "hot", while white wires should be neutral. If power is applied to a transformer with the line and neutral wires reversed, the tubing will be flashed a total of four times over a ten second period, then trip off. If the supply wires appear to be connected properly, the polarity of the service wires themselves may be reversed (i.e. the black or red wire is actually the neutral and the white wire is actually the hot wire).
- ◆ Verify the service grounding wire is actually ground and is properly bonded to the sign enclosure. Verify that the transformer's identified service ground ("G") terminal or green wire is grounded via wire (or via the transformer mounting plate) to the sign enclosure.
- ◆ Check for excessive leakage currents caused by moisture within or on the sign, tubing installed too close to metal, contaminated insulators or standoffs, or conductive debris such as insects, dirt, etc. between live high voltage sign components and ground.
- ◆ Check for electrical shorts or arcs from live high voltage sign components to ground. To help locate the source of such faults, Secondary-Circuit Ground-Fault Protection (SCGFP) may be placed in "Service" mode. To activate service mode, momentarily depress the small pushbutton on the end panel of the transformer. While in service mode, power is applied and the SCGFP feature will be disabled for approximately 29 minutes, after which the transformer will return to normal operation. Return to normal operation at any time by removing and reapplying service power or by pressing the service button again. **Warning: During Service Mode, no protection against an abnormal arc-induced electrical fire exists.**
- ◆ **No protection against electrical shock exists during any operational mode.**
- ◆ After the source of any fault is removed, the transformer can be reset by removing and reapplying supply power.

FRANCE

15030 P8G-3UE & 9060 P8G-3UE Normal Power Factor

Figure 1

Standard Series Wiring Method

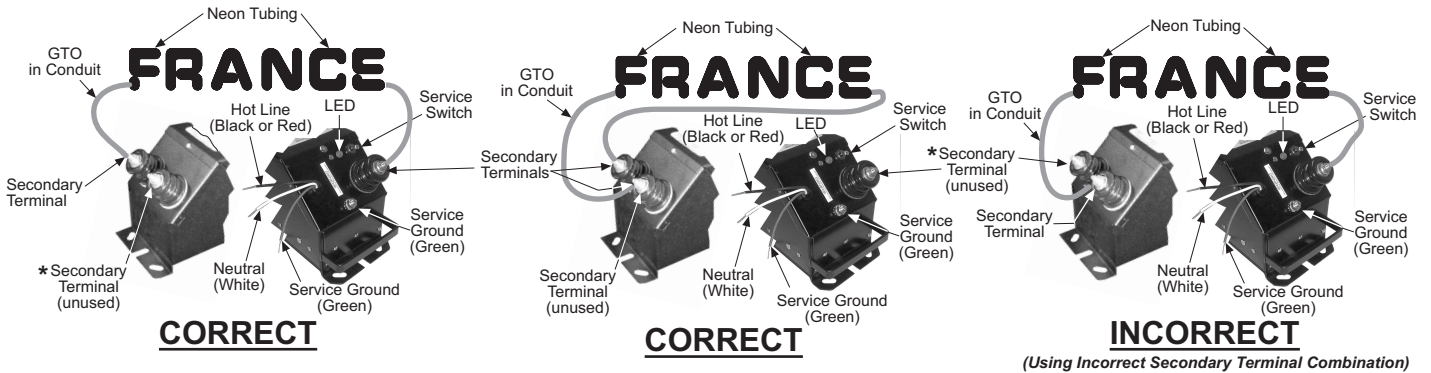
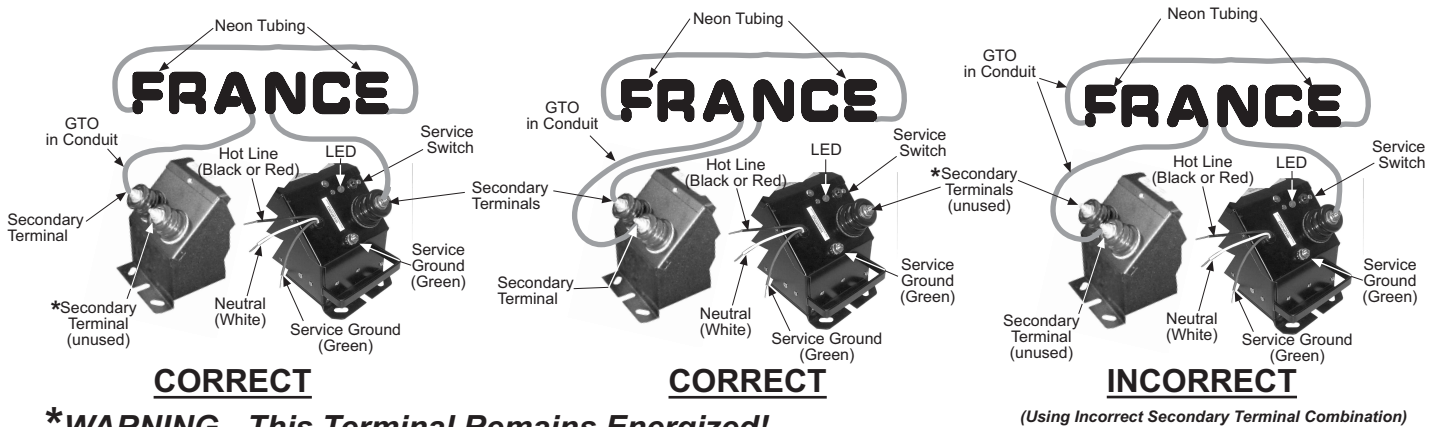


Figure 2

Virtually-Grounded Series Wiring Method



***WARNING - This Terminal Remains Energized!**

15030 P8G-3UE and 9060 P8G-3UE UNITS CAN BE FLASHED AND DIMMED.

NEON TRANSFORMER WITH UL2161 COMPLIANT SERVICE SWITCH

A push button style service switch is located on the same end of the case as the primary bushing or primary leads. To activate service mode: while the transformer is on, depress and hold the switch for 1 second and release. The tubing will flash on 3 times to indicate the transformer is in service mode (SCGFP circuit is disabled). The tubing should then remain on. The tube may not light if the tube is broken or shorted. The LED will constantly flash while unit is in service mode. The unit remains in service mode for 29 minutes. After 29 minutes, the unit will return to normal mode. To escape service mode before the 29 minutes has elapsed, depress the service switch and hold for 1 second and release, or turn power off, wait 3 seconds, then turn power on. The unit will restart in normal mode.

The 15030 P8G-3UE and 9060 P8G-3UE are universal transformers: These transformers can be used in place of transformer with the following voltage ratings:

15030 P8G-3UE: 10000 - 15000 volts

9060 P8G-3UE: 3000 - 9000 volts

When will a Secondary-Circuit Ground Fault Protection in the 15030 P8G-3UE or 9060 P8G-3UE Transformer NOT trip:

- ◆ Ground faults on the primary (line) side of the transformer. **Secondary-Circuit Ground-Fault Protected Transformers will NOT provide protection against electrical shock.**
- ◆ Series arcs in the sign system (arcs associated with defective tubing interconnections or between sign tubing sections).
- ◆ Breaks in the sign tubing, degassed tubing, or opens in the high voltage connections without a corresponding short or arc to ground.
- ◆ Shorts to an ungrounded metal part within or near a sign.

Luminous Tube Footage Chart

TUBING DIAMETER	TYPE TUBING	TUBING LENGTH RANGE (feet) ¹	
		15030 P8G-3U	9060 P8G-3U
9 mm	Ne	18 - 32	5 - 18
	Hg ²	22 - 39	6 - 22
10 mm	Ne	21 - 36	6 - 21
	Hg ²	25 - 44	7 - 25
11 mm	Ne	24 - 40	7 - 24
	Hg ²	28 - 48	8 - 28
12 mm	Ne	26 - 45	8 - 26
	Hg ²	31 - 54	9 - 31
13 mm	Ne	29 - 50	9 - 29
	Hg ²	33 - 60	10 - 33
14 mm	Ne	30 - 54	9 - 30
	Hg ²	36 - 64	11 - 36
15 mm	Ne	33 - 60	10 - 33
	Hg ²	40 - 72	12 - 40
18 mm	Ne	40 - 72	11 - 40
	Hg ²	45 - 80	14 - 45

¹ Based on average grade.
² All enclosed applications. Exposed and extremely cold climates may require footage be reduced by 10-20%.
 NOTE 1: Deduct approximately 1 foot from above figures for each pair of electrodes.
 NOTE 2: Recommended gas pressure for 10-ft plus lengths, increase 10% for tube lengths under 10 ft.

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