

# VENTEX TECHNOLOGY, LLC User's Guide

## CHANNEL LETTER SERIES: VT9030CL-120 / 277

- UL 2161 Listed Outdoor Type 3 • CSA Approved // cUL •
- For Direct Mount Inside Channel Letters •

Thank you for purchasing a Ventex electronic neon power supply. Please read the following tips and directions carefully to ensure proper installation and operation of our products. It is the responsibility of the user to ensure installation complies with local electrical codes.

### FEATURES AND BENEFITS

- Input Line Surge Protection (Varsistor Type)
- Line and Load Regulated Output (self-adjusting output regardless of load size or input voltage fluctuations)
- Open circuit, overload and ground faults will shut down
- Note: Under a fault condition, unit will attempt to reset 2 more times, then latch off permanently unless the fault clears. Intermittent faults will not affect the operation of the unit.
- Will not trip on capacitive currents up to 15mA
- High Power Factor (Energy Saving and Cost Effective)
- Ground Connection via Mounting Foot
- 1/2" conduit nipple on the primary
- Integral Sleeve GTO-10 Output Leads
- UL2161 Listed
- Complies with CSA22.2, No. 107.1, No. 13
- Can be directly mounted on rigid sign face material (UYMR2)

SPECIFICATIONS:	VT9030CL-120	VT9030CL-277
Input Vac, Nominal (50/60Hz)	120VAC	277VAC
Input Voltage Range	108V-132VAC	240V-310VAC
Input Current @ Max Load	0.9A rms	0.5A rms
Power Factor	0.95	0.92
Input Leads	18 AWG 36in. (0.9M)	
Output Voltage / Current	0V-9000V / 30mA rms	
Output H-V Leads	GTO-10 INTEGRAL SLEEVE (18 AWG) 32in. (0.8M)	
Operating Temperature	-30°F to 122°F (-34°C to 50°C)	

When Operating at Ambient Temperatures Higher than Above Limit, Reduce Load by 10% for each 9°F ( 5°C) Ambient Rise.

### MAXIMUM DRIVING DISTANCES BETWEEN PAIR OF ELECTRODES

GAS TYPE >	NEON			ARGON-MERCURY			MODEL WEIGHT	MODEL DIMENSIONS			Minimum Enclosure Volume
	TUBE DIAMETER >	10mm	12mm	15mm	10mm	12mm		15mm	L	W	
9030CL Max Load ft(m)	21' (6.4M)	26' (7.9M)	34' (10.0M)	25' (7.6M)	31' (9.5M)	40' (12.2M)	30 oz 850 g	6.65"	3.13"	1.55"	125 in <sup>3</sup> (2050cm <sup>3</sup> )
								16.9cm	7.95cm	3.94cm	

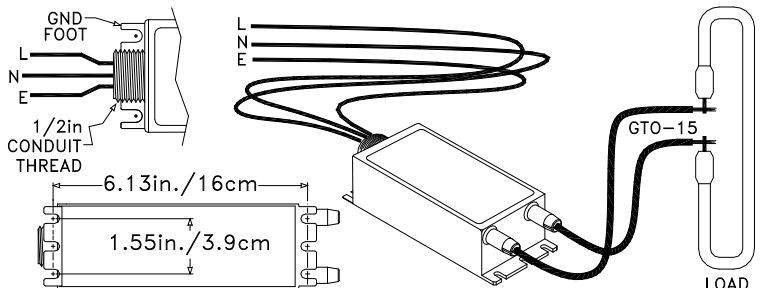
Note: Each pair of electrodes is equivalent to one foot of tubing. Footage chart is intended as a guide only. Actual distance will vary due to application

### RIGID SIGN FACE MOUNTING:

While the use of a UYMR2 Rigid Sign Face Material from the Sign Components Manual typically requires a minimum of 1 inch spacing from a heat producing part, Neon Power Supply Models VT9030CL-120/277 have been evaluated by UL as compliant to be directly mounted to a UYMR2 Rigid Sign Face Material having a minimum temperature rating of 70°C (158°F) and a minimum enclosure volume as per Table above without additional evaluation or testing.

### READ CAREFULLY BEFORE INSTALLATION

1. Be sure the high voltage output leads are connected firmly to the gas tube(s) and electrodes are properly insulated before engaging power. Intermittent connection of high voltage wires can cause hazardous arcing.
2. The power supply's grounding wire must be connected to ground.
3. Contact with the transformer's high voltage output leads can cause shock, burns or death.
4. High voltage leads and gas tubes should be at least 1.5 inches away from all surfaces.
5. Output leads should not be grounded.
6. Output leads cannot be run in conduit.
7. When operating two or more power supplies in the same installation, be sure units are at least 12 inches apart.
8. The transformer can be mounted directly inside a channel letter and/or mounted on the back wall, underneath tubes.
9. The transformer should not be mounted in a position where it can stand in water.
10. Please see Installation & Troubleshooting Guide for Ventex Indoor & Outdoor Electronic Transformers at ventextech.com or call Technical Support at (877) 908-9193

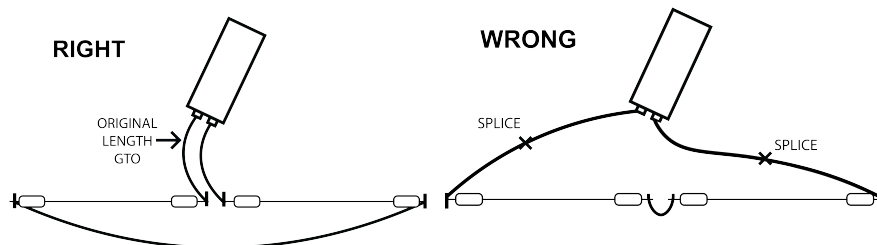


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## INSTALLATION AND OPERATION

1. Firmly secure the transformer to the application with proper size screws or pop rivets.
2. If transformer is mounted on key steel or metallic surface, make sure transformer is grounded to metal frame via ground plate provided on unit. Insure all H-V output leads and tubes are at least 1.50 inches away from metal.
3. Firmly connect high voltage output leads to electrodes of the gas tube (s).
4. Cover electrode connections with UL/CSA approved "boots" or other proper NEC insulation.
5. Wire the power supply to any standard three wire, grounded power source.
6. **Do Not** run GTO leads from an electronic power supply in metallic conduit, else, severe loss of driving distance, GTO failure, & "tripping" will occur.
7. **Do Not** load Ventex VT series power supplies with a mA meter or use a dimmer. The VT series maintains 30ma output regardless of load or primary voltage.
8. **Do Not** over load. The VT protects itself by tripping if there is an over load of glass and/or excessive capacitance coupling. Work from the footage chart. If in doubt, contact the Ventex or visit our website [www.ventextech.com](http://www.ventextech.com) to view the online footage chart or, preferably, use the online Voltage Calculator.
9. Keep GTO leads, particularly "Home Run" leads short and as far from each other and all surfaces as possible. Ventex recommends 1.5 inches as a minimum spacing if possible, else tie GTO leads halfway up Tube Supports, and take up any slack, such that GTO lead does not touch surface.
10. If a high voltage GTO cable has to be run through a thin sheet metal wall, special care must be taken. The sharp edge of a hole could cause rapid deterioration of the GTO cable. This can eventually cause a ground fault condition and "tripping". Use the largest diameter hole possible and always use an approved bushing to center the cable in the hole.
11. If leads have to cross, try to space them as far apart as possible and cross them at right angles
12. Maintain as much space as possible between multiple power supplies, their tubes and wiring. This will minimize the effects of "electronic crosstalk."
13. Balance glass load and "home-runs" as much as possible. This will minimize the chance of tripping due to excessively unbalanced load.
14. In all signs with multiple glass tubes or border glass, it is best to wire from the 'inside' glass outwards.  
*This minimizes current loss due to capacitance coupling through the border tube, and the chance of over loading and "tripping".*

### VIRTUAL WIRING METHOD



15. **CAUTION:** Unit will try to reset twice under a fault condition. If fault persists, the unit will latch off until Input power is cycled off then on. If fault clears during reset period then unit will operate normally. *Note: I/P power must be cycled off at least 5-10 seconds to clear the latch before turning back on.*

### TROUBLESHOOTING TIPS

There is a protection circuit in the transformers that will cut off (trip) the power whenever an open circuit, GFI or overload condition occurs. If your gas tube (sign) is off, and the AC input power is on, your transformer has probably tripped due to one of the above fault conditions. If so, follow procedure outlined below. Remove power to the transformer. This action will reset the protection circuit. Wait at least 10 seconds before reapplying power. If tripping continues, remove power and check the following:

- Are output leads connected securely and properly to the gas tube(s)?
- Is the gas tube broken or cracked, resulting in an open circuit?
- Is there a ground fault condition occurring within the system?
- Are gas tubes or H-V output leads in close proximity to metal, or any ground plane? (This may also cause tubes to dim.)
- Are multiple units mounted at least 12 inches apart from each other?
- Is unbalanced loading causing false tripping?
- Are tubes pumped to standard specification?

After completing the above check list and rectifying any detected problems, engage the input power to the transformer to re-energize the gas tube (sign). If the transformer still does not work properly, call Technical Support at (877) 908-9193 or see the Resources section of [ventextech.com](http://ventextech.com).

**Note: Do not attempt to disassemble the transformer. This action will void any warranty offers made by Ventex.**

## Ventex Technology, LLC. Warranty

Ventex Technology, LLC ("Ventex") warrants products purchased from Ventex shall be free from defects in material and workmanship and such products shall operate in accordance with specifications specified or assented to in writing by Ventex, at the time of sale, under normal, proper use and operating conditions. This warranty shall remain in effect for two (2) years from date of manufacture. If a product is defective, it will be repaired or replaced, at the sole discretion of Ventex, if returned to Ventex, transportation prepaid. Any improper use, operation beyond capacity, or alteration by anyone not specifically authorized in writing by Ventex shall void this warranty. Ventex's liability on any claim shall never exceed the purchase price of the specific product which gives rise to the claim.

The aforementioned is in lieu of all warranties, expressed or implied, including but not limited to, any warranty of merchantability or of fitness for any particular purpose. In no event shall Ventex be liable for consequential, incidental, indirect or special damages or liability, transformation, installation or substitution costs, delays or for any other damages, costs or expenses incurred, irrespective of how they occur.

There are no warranties, obligations and/or liabilities on the part of Ventex, whether for products, services or otherwise, which extend beyond the description mentioned in this document. No employee or representative of Ventex other than the President (by written, signed document) is authorized to change or expand this warranty in any way, or to grant any other warranty. No waiver of any term of this warranty by Ventex shall be deemed to imply any continuing or repeated waiver thereof.