



INSTALLATION MANUAL LED SYSTEM 100 (1/2 Watt)



By **Ventex**
Technology, Inc.

* A SERIES-DRIVEN CONSTANT CURRENT LED SYSTEM FOR SIGNAGE *



LED DRIVER: **VLP100-120 // VLP100-277**

LED STRING: **VL-x100** (x= LED Color > W=White, CW=Cool White, R=Red)

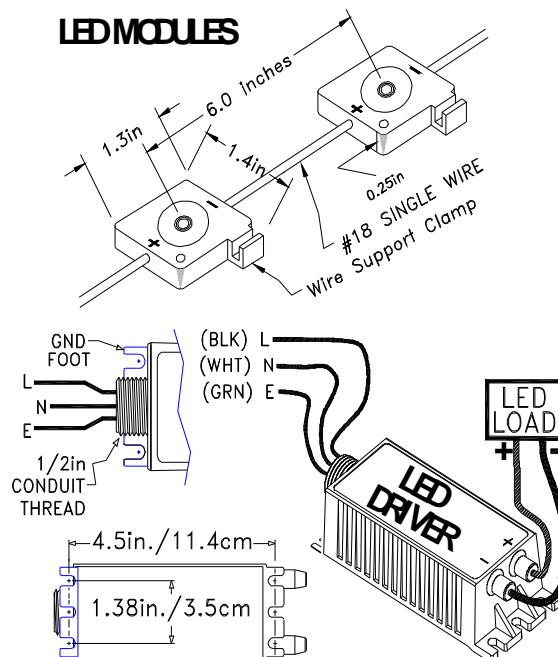
Thank you for purchasing the **VenBrite™** LED SYSTEM. For proper installation and operation please read the following directions and tips carefully. It is the user's responsibility to ensure installation complies with national and local electrical codes.

The **VenBrite™** LED System has been designed especially for installation in channel letter signs, raceway/wireway & remote applications. The System is UL Recognized and may be used in non-enclosure rated signs as well as reverse channel letter applications where the direct mounting of LED modules and/or driver on polycarbonate may occur under suitable conditions.

SPECIFICATIONS

LED DRIVER:		VLP100-120	VLP100-277
Input Voltage, (50/60Hz)		120VAC (+/- 10%)	277VAC (+/-10%)
Input Current @ Max Load		0.5A rms	0.25A rms
Power Factor		0.95 min	0.92 min
Input Conduit Connection		1/2 Conduit Thread	
Input Leads - L(Blk), N(Wht), E(Grn)		18 AWG 18" (0.46M) - UL1015	
Input Surge Protection		Varistor Type	
Output Voltage		0-400 VDC (+/- 200VDC max to Gnd)	
Output Current (Line-Load Regulated)		120mA (Factory Set)	
Output Leads (+ pos & - neg)		18 AWG 18" (0.46M) - VA-W02 (+red) VA-W00 (-Blk)	
Maximum Modules (ft) per Driver:	WHITE = 120 (60ft) p/n: VL-W100		
	COOLWHITE = 120 (60ft) p/n: VL-CW100		
	RED = 150 (75ft) p/n: VL-R100		
Minimum Modules per Driver:		1 LED Module (all colors)	
Allowable Module to Module Pitch:		Minimum = 2 inches // Maximum = 6 inches	
Accessory: LED Wire		P/N= VA-W09 (18 AWG,600V,WHT,VW-1)	
Accessory: Wire Nut		P/N= VA-WN01	
Built-In Protection:		GFI, Open & Short Circuit, Overload, Reverse Polarity	
Driver Size: L x W x H (cm)		4.85" x 2.0" x 1.45" (12.4cm x 5.0cm x 3.7cm)	
Driver Weight		12.5 oz (350g)	
Agency Approvals & Compliance:		  RoHS Compliant	
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			

LED MODULES



INSTALLATION INSTRUCTIONS: **CAUTION:** Output NOT Class 2. Make sure input power is off prior to installation. 1. This LED System is suitable for dry or damp locations. Do not mount where it can stand in water. 2. Primary wiring must be connected by a licensed electrician and comply with National Electrical Code, NFPA 70 including the use of disconnect switches and enclosures 3. The VLP100 series LED driver can be direct mounted in enclosure or non-enclosure rated self contained channel letter, raceway/wireway or remote applications. 4. DO NOT ground output wiring. 5. Input Grounding wire of LED driver must be connected to ground. 6. If using multiple LED drivers, maintain at least 6 inches of distance between them. *This will minimize the effects of "electronic crosstalk."* 7. Mount LED driver using proper size hardware (# 8 sheet metal screws or pop rivets). Optional UL approved mounting methods may also be used. LED modules can be mounted using the attached peel & stick VHB tape, # 6 screws, 1/8in pop-rivets or an approved UL recognized adhesive may also optionally be used. 8. If LED driver is mounted on a metallic surface, make sure it is grounded to metal frame via ground foot provided on the LED driver, using UL approved mounting methods. Typically a straight run of LED modules would be fastened using a screw or rivet in each end module while the middle modules are held down using VHB tape (attached to bottom of each module). 9. **Observe output polarity.** Although LED Driver & LED modules will not be damaged by reverse polarity, there will be no light produced. 10. DO NOT connect LED Strings in parallel. 2 LED Strings connected in parallel will try to share the output current from the LED driver and run dimmer than normal. 11. DO NOT use a dimmer on input of the LED driver. *The driver maintains a constant output current regardless of load or primary voltage.* 12. DO NOT connect **VenBrite™** LED Modules to a Class 2 supply. 13. DO NOT over load. *The driver has overload protection. If the Maximum number of LED's per driver is exceeded the unit will Latch OFF.*

14. When connecting the LED driver secondary to the LED Module String use the following:

A) **For Enclosure Rated Sign:** Any application approved UL wire connector and #18AWG, 600V wire, can be used.

B) **For Non-Enclosure Rated Sign:** use Ventex Wire nut P/N: VA-WN01 or Ideal Industries Wire Connector cat no. #30-x61 (where 'x' = package style) for return/jumper wire. Use LED wire, Ventex P/N: VA-W09 (#18 AWG, 600V, White, VW-1). This LED wire, sold separately, is unique & integral to the LED system. No substitutes allowed. Typically a single stroke LED string will need a return wire from the end farthest away from the driver. (See examples next page). This same wire can also be used to jumper between led string ends as required.

15. **Mounting on Suitable Sign face material:** A temperature test was conducted with LED modules in a box with an overall density of 1 module/6in3 (98cc) & LED driver in a box with an overall density of 1 driver/31in3 (500cc). The maximum case temperature measured was 83 deg C for both driver & LED case. The suitability of any condition that would result in a more severe wattage density shall be determined. The temperature rating of any UYMR2 material the LED module or driver may be mounted to shall be considered in the end product.

VenBrite™ LED strings can easily be mounted in a number of different configurations. For a double stroke letter, Fig. 1 below shows a simple loop pattern that will minimize the use of a return wire. Fig. 2 shows a single stroke pattern with return wire. The return wire, sold separately, is pressed into a wire support clamp located on each module to facilitate assembly. Fig. 3 shows a raceway application. **NOTE: Output polarity is required.**

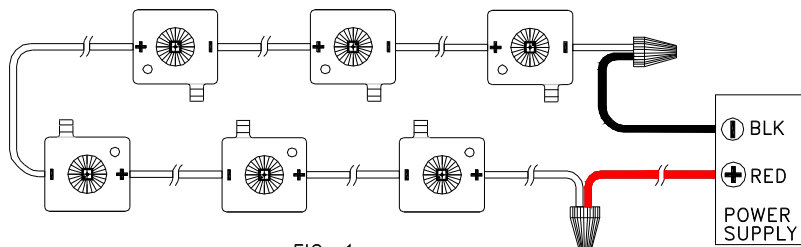


FIG. 1

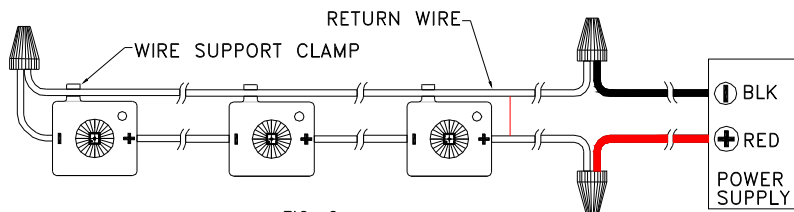


FIG. 2

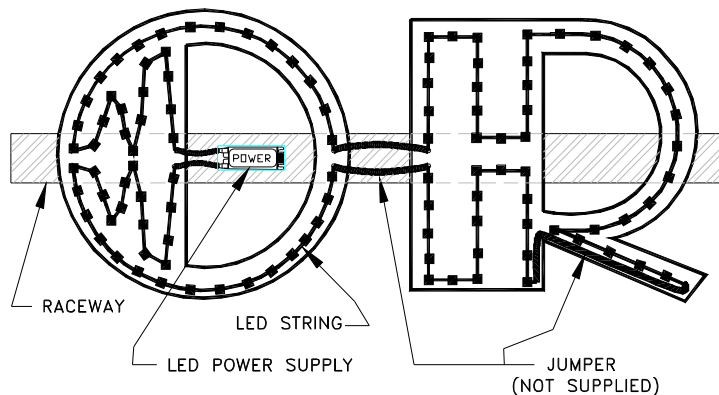


FIG. 3

TROUBLE - SHOOTING TIPS

There is a protection circuit in the LED driver that will latch off (trip) the power whenever an open circuit, GFI or overload condition occurs. If your LED sign is off, and the AC input power is on, the LED driver has probably tripped due to fault conditions. If so, remove power to the supply. This action will reset the protection circuit. Wait at least 5 seconds before reapplying power. If tripping continues, remove power and check the following:

1. Is output wiring properly connected? Turn off power and check wiring.
2. Does LED driver have correct input VAC voltage? Measure volts AC into driver. Check the breaker. Check the wiring.
3. Is there a break in the output series connected circuit? Jumper the cut wire.
4. Is there a short circuit at the LED driver output? Look for damaged wire.
5. Is output wired reverse polarity? Make sure driver + output is connected to + of 1st LED Module. Make sure each successive LED module is connected + to -
6. Have the maximum modules per LED driver been exceeded? Count the modules and confirm number is within maximum listed under "specifications"

Note: Do not attempt to disassemble LED driver or LED module for repairs. This action will void any warranty offers made by Ventex.

INSTRUCTIONS FOR REPLACING A DEFECTIVE LED MODULE

In the event of a defective LED in a module, a parallel shunt, located in the module, will allow current to continue to flow through and light the remaining LED modules. This will allow identification of the faulty LED module. Simply turn off the power and replace with the correct color module using UL recognized hardware (wire nut, butt splice, etc) for Enclosure rated signs and for Non-Enclosure rated signs use Ventex Wire nut (VA-WN01) or Ideal Industries (#30-x61) and if needed Ventex LED Wire (VA-W09). Turn power back on.

HOW TO RETROFIT AN EXISTING SIGN: (CAUTION: Disconnect all power to sign before beginning retrofit to VenBrite Led System.)

1. Remove channel letter face.
 2. Install a disconnect switch if missing.
 3. For Neon Signs: Carefully remove neon tubing, tube supports, GTO wire, bushings, PK housings (if used) and transformers. For Fluorescent Signs: Carefully remove Fluorescent tubes, tube supports, wire covers, output wiring and Ballasts. For LED Signs: Carefully remove power supplies, LED modules and output wiring.
- NOTE: Comply with all applicable federal and local regulations when disposing of channel letter neon, fluorescent or LED lighting system components.**
4. Remove all debris from the sign. Clean the application surface of the sign interior with an oil-free, non-residue solvent or cleaner, following manufacturer's directions. Any residue can interfere with proper adhesion of the VHB tape affixed to the LED module back.
 5. Inspect the sign interior for holes. Fill openings ½ inch or smaller with rated caulk or silicone, following manufacturer's directions. Use a metal patch secured with screws or rivets on larger openings or holes. Do NOT fill drain holes
 6. Install VenBrite LED System as instructed in this Installation Manual.