

# Tetra® LED Systems

## Power Supply

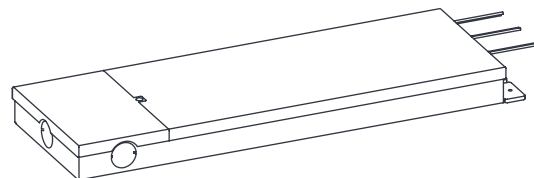
Installation Guide

**12**  
Volt

GEPS12-180U-NA (120-277 VAC input / 12 VDC output / 180W)

### Power Supply Features

- Supports all 12 VDC Tetra Products
- Dry and Damp Location Rated
- Class 2 Power Supply
- 120-277 VAC Input
- Three 60 Watt Output Banks



## BEFORE YOU BEGIN

Read these instructions completely and carefully.

### WARNING/AVERTISSEMENT

#### RISK OF ELECTRIC SHOCK

- Disconnect power at fuse box or circuit breaker before servicing or installing product.
- Properly ground Tetra® power supply.

#### RISK OF FIRE

- Minimum 5 cm (2") spacing from heat producing components required.
- Minimum 10 cm (4") to side and 2.5 cm (1") spacing in compartment surrounding component required.
- Use only approved wire for input/output connection. Minimum size 18 AWG (0.82 mm<sup>2</sup>).
- Follow all local codes.
- Application considerations potentially requiring additional spacing include high ambient temperature seen by the power supply, poor contact with a heat dissipating material, inadequate ventilation, or direct exposure to sun.

#### RISQUES DE DÉCHARGES ÉLECTRIQUES

- Coupez l'alimentation électrique à la boîte de fusibles ou au disjoncteur avant l'entretien ou l'installation du produit.
- Assurez-vous de correctement mettre à terre le bloc d'alimentation Tetra®.

#### RISQUES D'INCENDIE

- Un espacement minimum de 5 cm (2") entre les composantes émettrices de chaleur est requis.
- Un espacement minimum de 10 cm (4 po) entre 2 alimentations de puissance est requis ainsi qu'un espacement minimal de 2,5 cm (1 po) avec toute enceinte.
- N'utilisez que des fils approuvés pour les entrées/sorties de connexion. Taille minimum 18 AWG (0.82 mm<sup>2</sup>).
- Respectez tous les codes locaux.
- Certaines applications pourraient requérir un espacement additionnel, p. ex. une température ambiante élevée autour du bloc d'alimentation, un mauvais contact avec une matière dissipatrice de chaleur, une ventilation inadéquate ou une exposition directe au soleil.

### CAUTION/ATTENTION

#### RISK OF INJURY

- While performing installations described, gloves, safety glasses or goggles should be worn.

#### RISQUES DE BLESSURE

- Lors de l'exécution des installations décrites, des gants, des lunettes de sécurité ou des lunettes de protection doivent être portées.

### Save These Instructions

Use only in the manner intended by the manufacturer. If you have any questions, contact the manufacturer.

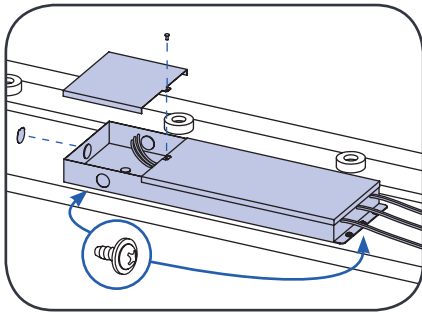
### Prepare Electrical Wiring



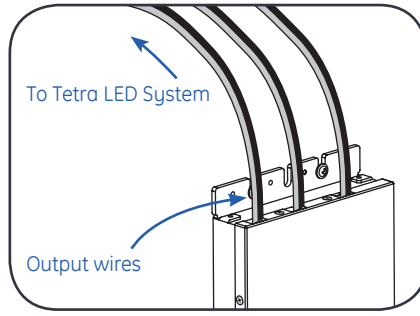
#### Electrical Requirements

- Limited to use in dry and damp locations.
- The suitability of rain enclosure shall be determined if intended for wet location.
- The grounding and bonding of the LED Driver shall be done in accordance with National Electric Code (NEC) Article 600.
- Follow all National Electric Codes (NEC) and local codes.

# Power Supply Installation

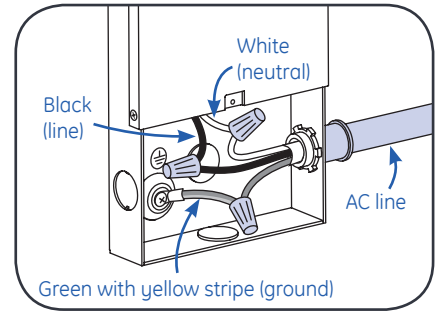


**1** Remove the junction box cover and carefully remove knockout for AC line input wires. Install appropriate electrical fittings in the knockout holes for wire protection. Securely mount the power supply with the base in contact with the mounting surface in accordance with the power supply spacing requirements described above. If used in a wet location, the power supply and electrical connections shall be protected from weather by a suitable rain enclosure, and not subject to saturation with water or other liquids. If not protected from the weather, the output connections may be sealed with electrical grade silicone.



**2** Connect the supply wire that is attached to the Tetra LED System to the red (+) and black (-) output wires of the power supply as outlined in the **“Electrical Connections”** section of your LED system’s Installation Instructions.

**NOTE:** Three 60 watt output banks per power supply. Do not interconnect output terminations.



**3** Connect the AC line to the black (line) and white (neutral) input wires of the power supply and connect the branch circuit ground to the green wire with a yellow stripe (ground) wire using appropriately sized twist-on wire connectors.

**NOTE:** To avoid overloading this power supply with LED modules, please refer to the specific module loading guides.

**NOTE:** For installation in Canada, a disconnect switch of appropriate rating needs to be placed within 29.5 ft. (9 m) of primary side of the power supply. The switch voltage rating shall not be less than the branch circuit voltage. The switch must also support twice the amount of input current.

**NOTE:** When installing power supply, connect to the appropriate sized building breaker or disconnect device for line, neutral and ground connections, in accordance with National Electric Code (NEC) Article 600 and all local regulations.

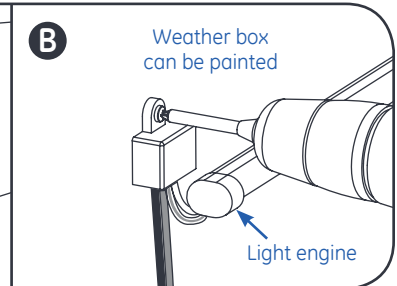
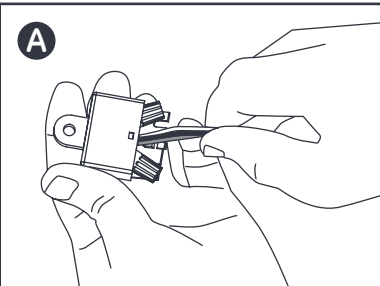
**NOTE:** Exceeding maximum load per bank will cause the LEDs to dim or blink. Once the excess load is removed, cycle the input power to restart the power supply.

## OPTIONAL

A Weather Box (GEXNWB2) may be used to house and seal Class 2 connections.

A) Insert wire connectors into weather box. Fill with electrical grade silicone and close box.

B) Secure the weather box using a #6 or #8 (M2 or M3) screw.



# Power Supply Specifications

Performance Data	Min	Typical	Max
Input Voltage (VAC)	108	120-277	305
Input Frequency (Hz)	-	50/60	-
Input Current (A)	-	-	2.0
THD	-	-	20
PF	0.9	-	-
Output Voltage (VDC)	11.0	12.0	13.0
Output Current (ADC)	-	-	5.0
Output Power (W)	-	-	180
Environmental Operating Temperature Range	-40°C	+25°C	+60°C*
Environmental Humidity (non-condensing)	10%	-	90%
Environmental Storage Temperature Range	-40°C	-	+85°C
Dimensions	15.7 in. x 5.1 in. x 1.3 in. (400 mm x 130.6 mm x 32.6 mm)		

\*Maximum case temperature is 85°C

Supports Tetra Products	SKUs	Rated Watts	Maximum Load	Remote Mounting Distance			
				18 AWG/ 0.82 mm <sup>2</sup>	16 AWG/ 1.31 mm <sup>2</sup>	14 AWG/ 2.08 mm <sup>2</sup>	12 AWG/ 3.31 mm <sup>2</sup>
Tetra miniMAX	GEMM71-W1, GEMM50-W1, GEMM41-W1, GEMM32-W1	0.324W	170 modules/68 ft. (20.73m) per bank; 510 modules/204 ft. (62.18 m) per PS	15 ft. (4.6 m)	23 ft. (7.0 m)	38 ft. (11.6 m)	65 ft. (19.8 m)
	GEMMRD-W1, GEMMBL-W1	0.384W	150 modules/60 ft. (18.29 m) per bank; 450 modules/180 ft. (54.88 m) per PS	15 ft. (4.6 m)	23 ft. (7.0 m)	38 ft. (11.6 m)	65 ft. (19.8 m)
	GEMMGL-W1	0.312W	150 modules/60 ft. (18.29 m) per bank; 450 modules/180 ft. (54.88 m) per PS	15 ft. (4.6 m)	23 ft. (7.0 m)	38 ft. (11.6 m)	65 ft. (19.8 m)
	GEMMPO-W1	0.480W	120 modules/48 ft. (14.63 m) per bank; 360 modules/144 ft. (43.89 m) per PS	15 ft. (4.6 m)	23 ft. (7.0 m)	38 ft. (11.6 m)	65 ft. (19.8 m)
	GEMS71-1, GEMS50-1, GEMS41-1, GEMS32-1	0.384W/ module	150 modules/60 ft. (18.29 m) per bank; 450 modules/180 ft. (54.88 m) per PS	30 ft. (9.1 m)	50 ft. (15.2 m)	80 ft. (24.4 m)	120 ft. (36.6 m)
Tetra MAX	GEMX71-W1, GEMX50-W1, GEMX41-W1, GEMX32-W1	0.456W/ module	128 modules/64 ft. (19.51 m) per bank; 384 modules/192 ft. (58.52 m) per PS	20 ft. (6.1 m)	30 ft. (9.1 m)	50 ft. (15.2 m)	86 ft. (26.2 m)
	GEMXRD-W1, GEMXGL-W1, GEMXBL-W1	0.480W/ module	120 modules/60 ft. (18.29 m) per bank; 360 modules/180 ft. (54.88 m) per PS	20 ft. (6.1 m)	30 ft. (9.1 m)	50 ft. (15.2 m)	86 ft. (26.2 m)
	GEMXPO-W1	0.360W/ module	160 modules/80 ft. (24.38 m) per bank; 480 modules/240 ft. (73.15 m) per PS	20 ft. (6.1 m)	30 ft. (9.1 m)	50 ft. (15.2 m)	86 ft. (26.2 m)
	GEMXRC-W1	0.288W/ module	200 modules/100 ft. (30.48 m) per bank; 600 modules/300 ft. (91.44 m) per PS	20 ft. (6.1 m)	30 ft. (9.1 m)	50 ft. (15.2 m)	86 ft. (26.2 m)
	GEMXYG-W1	0.540W/ module	106 modules/53 ft. (16.15 m) per bank; 318 modules/159 ft. (48.46 m) per PS	20 ft. (6.1 m)	30 ft. (9.1 m)	50 ft. (15.2 m)	86 ft. (26.2 m)
	GEMXH71-W1, GEMXH50-W1, GEMXH41-W1, GEMXH32-W1	0.720W/ module	80 modules/40 ft. (12.20 m) per bank; 240 modules/120 ft. (36.59 m) per PS	20 ft. (6.1 m)	30 ft. (9.1 m)	50 ft. (15.2 m)	86 ft. (26.2 m)
	GEMXHRD-W1	0.408W/ module	142 modules/71 ft. (21.64 m) per bank; 426 modules/213 ft. (64.92 m) per PS	20 ft. (6.1 m)	30 ft. (9.1 m)	50 ft. (15.2 m)	86 ft. (26.2 m)
	Tetra PowerMAX	GEPM71-W1, GEPM50-W1 GEPM41-W1, GEPM32-W1	1.32W	42 modules/28 ft. (8.53 m) per bank; 126 modules/84 ft. (25.60 m) per PS	20 ft. (6.1 m)	30 ft. (9.1 m)	50 ft. (15.2 m)
Tetra PowerStrip	GESS71-1, GESS50-1, GESS41-1, GESS32-1	2.4W/ module	20 modules/20.0 ft. (6.01 m) per bank; 60 modules/60.0 ft. (18.29 m) per PS	20 ft. (6.1 m)	25 ft. (7.6 m)	35 ft. (10.6 m)	40 ft. (12.1 m)
	GESSH71-1, GESSH50-1, GESSH41-1, GESSH32-1	3.63W/ module	16 modules/17.0 ft. (5.18 m) per bank; 48 modules/51.0 ft. (15.60 m) per PS	20 ft. (6.1 m)	25 ft. (7.6 m)	35 ft. (10.6 m)	40 ft. (12.1 m)
Tetra miniStrip	GEBS71-2, GEWWBSP3-50K, GEWWBSP3-41K, GEWWBSP3	1.10W/ module	53 modules/53 ft. (16.16 m) per bank; 159 modules/159 ft. (48.48 m) per PS	20 ft. (6.1 m)	25 ft. (7.6 m)	35 ft. (10.6 m)	40 ft. (12.1 m)
	GEBSH71-2, GEBSH50-1, GEBSH41-1, GEBSH32-1	1.49W/ module	38 modules/38 ft. (11.58 m) per bank; 114 modules/114 ft. (34.75 m) per PS	20 ft. (6.1 m)	25 ft. (7.6 m)	35 ft. (10.6 m)	40 ft. (12.1 m)

# Troubleshooting

Symptom	Solution
All letters are OFF	<ul style="list-style-type: none"><li>• Recycle AC power, turn it off, then turn on again.</li><li>• If still off, check the power supply DC output voltage using a voltmeter. It should be nominally 12V.<ul style="list-style-type: none"><li>» If there is DC output, inspect and correct all DC wire damage/polarity issues; If no issue is found, replace the OFF-module string.</li><li>» If there is no DC output, have a licensed electrician check the input AC voltage and if there is correct AC voltage, replace the power supply.</li><li>» If there is no AC voltage, correct the upstream AC issue.</li></ul></li></ul>
Some LEDs appear dim	<ul style="list-style-type: none"><li>• Ensure the overall length of the Tetra® LED System does not exceed the maximum load.</li><li>• Ensure the length of supply wire is equal to or below the recommended remote mounting distance.</li></ul>
Some of the letters are not illuminated	<ul style="list-style-type: none"><li>• Inspect and correct the wires of the non-illuminated letters for damage/polarity issues; If no issues are found, see the troubleshooting solution for "All letters are OFF."</li></ul>
Shadows	<ul style="list-style-type: none"><li>• Re-route supply wire and secure to the back of the can with electrical grade RTV silicone. Adjust wire connector orientation so that it does not cover any LEDs.</li><li>• Adjust LED layout to ensure uniformity of illumination of the face of the letter.</li></ul>

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

**Note:** This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

This Class [A] RFLD complies with the Canadian standard ICES-005. Ce DEFR de la classe [A] est conforme à la NMB-005 du Canada.

This product is intended to be used as a lamp control gear that is installed after the mains control switch.

Conforms to the following standards:



For the most up-to-date version of this installation guide, please visit <https://products.currentbyge.com/sign-lighting>