

# Tetra® LED Systems Power Supply

(GEPS12-180U)

## Power Supply Features

- Supports Tetra miniMAX, Tetra MAX, Tetra PowerMAX, Tetra PowerStrip and Tetra miniStrip lighting systems
- UL: Class 2 wiring per NEC Article 725, Dry and Damp location rated
- IEC: SELV, IP66 rated: separate enclosure required
- 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

- Use only Tetra® supply wire to make connection from Tetra® power supply to Tetra® LED strip.
- Use only approved wire for input/output connection. Minimum size 18 AWG (0.82 mm<sup>2</sup>)
- Follow all local codes.

#### 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 l'alimentation électrique Tetra®.

#### RISQUES D'INCENDIE

- N'utilisez que le fil d'approvisionnement Tetra® pour faire la connexion entre l'alimentation Tetra® et la bande DEL Tetra®.
- 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.

### ⚠ CAUTION/ATTENTION

#### RISK OF INJURY

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

#### RISQUE 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.

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.

## Prepare Electrical Wiring



### Electrical Requirements

- Limited to use in dry and damp locations.
- 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.
- These products are only suitable for connection to a circuit from a Class 2 power source. These products have not been evaluated for use when connected to a power source that does not comply with Class 2 voltage and energy limited supplies.

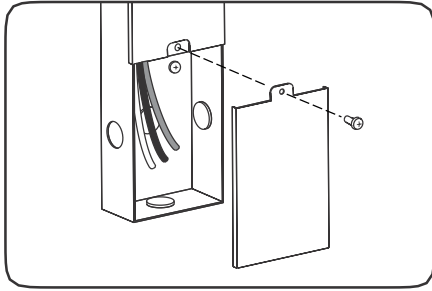
**Note:** This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment 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.

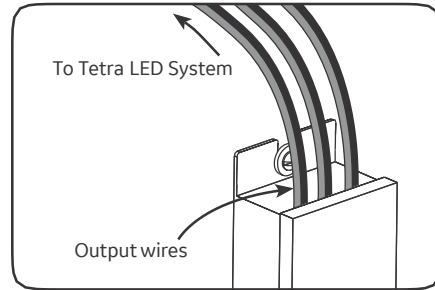


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## Power Supply Installation

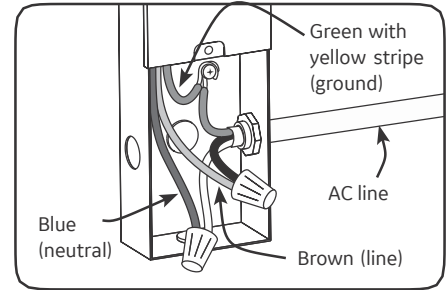


- 1 Mount power supply and remove junction box cover. Carefully remove knockout for AC line input wires. Install appropriate electrical fittings in the knockout holes for wire protection.



- 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 brown (line) and blue (neutral) input wires of the power supply using 18-14 AWG (0.82-2.08 mm<sup>2</sup>) twist-on wire connectors. Ground power supply by connecting green wire with yellow stripe to grounding screw. Replace junction box cover.

**NOTE:** For CSA approval, a disconnect/toggle switch of appropriate rating needs to be placed within 29.5 ft. (9 m) of primary side of the power supply. The minimum rating of the switch must be either 120 or 220 Volts AC. 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 and neutral connections, in accordance with local, state or country regulations.

**NOTE:** The grounding and bonding of the power supply and overall sign shall be done in accordance with National Electric Code (NEC) Article 600.

## Retrofit Instructions

1. **(Existing Signs Only)** Prior to installation, survey the site for information regarding power and accessibility inside and outside the building. Ensure that the branch circuit supplying the existing transformer or ballast will be within the voltage ratings of the new LED power supply, and have a current rating not exceeding 20A, or that permitted by applicable local, state, or country electrical codes (whichever is less).
2. **(Existing Signs Only)** Remove the existing lighting equipment to be replaced, such as neon tubing or fluorescent tubes; and associated transformers and ballasts. Care should be taken not to break the existing neon or fluorescent tubes.  
**NOTE:** Follow all federal and local regulations when disposing of neon tubing, fluorescent tubes, transformers and ballasts.
3. **(Existing Signs Only)** If removal of the existing lighting equipment eliminates the disconnect switch, as required by applicable local, state, or country electrical codes; a new disconnect switch must be installed.
4. **(Existing Signs Only)** Make sure the removal of lighting equipment does not compromise the integrity of the sign body (i.e. water intrusion). Fill in all holes 0.5 in. (13 mm) or smaller with the appropriate amount of rated caulk or sealant. For holes greater than
5. 0.5 in. (13 mm), use an aluminum or zinc coated steel patch with rivets and sealant.  
Using the layout guidelines within the LED module installation instructions, determine required number of LED modules required
6. to illuminate the sign.  
Using the applicable LED module maximum Loading chart, determine the number of Tetra Class 2 Power Supplies required to power the
7. number of LED modules required to illuminate the sign, so as not to overload any single power supply output.
8. Follow the LED module instructions to properly mount the LED modules.
9. Connect the DC output of the power supply to the LED modules using the Power Supply Installation instructions above.  
Connect the power unit to the supply in accordance with the applicable local, state, and country electrical codes, and the Power Supply Installation instructions above.
10. If required, the disconnect switch shall be installed by qualified personnel, in accordance with applicable local, state, and country electrical codes.

# Power Supply Specifications

Performance Data	Min	Typical	Max
Input Voltage (VAC)	90	100-277	305
Input Frequency (Hz)	-	50/60	-
Input Current (A)	0.70	-	2.50
Output Voltage (VDC)	11.64	12.0	12.32
Output Current (ADC) - Each output	-	-	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	12 in. x 2.7 in. x 1.6 in. (305 mm x 68 mm x 40 mm)		

\*Maximum case temperature is 80°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	GEMM71-2, GEMM50-2, GEMM41-2, GEMM32-2	0.324W	170 modules/68 ft. (20.73m) per bank;	15 ft. (4.6 m)	23 ft. (7.0 m)	38 ft. (11.6 m)	65 ft. (19.8 m)	
	GEMMBL-1, GEMMRD-1	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-1	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-1	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)	
Tetra MAX	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)	
	GEMX71-2, GEMX50-2, GEMX41-2, GEMX32-2	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-1, GEMXGL-1, GEMXBL-1	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-1	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-1	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-1	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)	
	GEMXH71-2, GEMXH50-2, GEMXH41-2, GEMXH32-2	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-1	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	GEPM71-2, GEPM50-2, GEPM41-2, GEPM32-2	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)	86 ft. (26.2 m)
	Tetra PowerStrip	GESS71-1, GESS50-1, GESS41-1, GESS32-1	2.8W/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		3.72W/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		GEWHBSP3, 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)
	GEBSH71-1, 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)	

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:



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