

# Tetra<sup>®</sup> LED Systems Power Supply

GEPS24-100U-NA (120-277 VAC input / 24 VDC output / 100W)

## Power Supply Features

- Supports all 24 VDC Tetra Channel Letters, Box signs and Contour Product
- Class 2 wiring per NEC Article 725
- Dry and damp location rated



## 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<sup>®</sup> power supply.
- Must be enclosed in a end product.

#### RISK OF FIRE

- Requires minimum 5 cm (12") spacing from heat producing components.
  - Requires minimum 10 cm (4") to side and 2.5 cm (1") spacing in compartment surrounding component.
  - 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.
  - 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 Tetra<sup>®</sup> supply wire to make connection from Tetra<sup>®</sup> power supply to Tetra<sup>®</sup> 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<sup>®</sup>.
- Doit être inclus à l'intérieur d'un produit final.

#### 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.
  - Certains environnements de l'application pourraient requérir un espacement additionnel tels que la température ambiante autour de l'alimentation, un mauvais contact avec une matière dissipatrice de chaleur, une ventilation inadéquate ou une exposition directe au soleil
  - N'utilisez que le fil d'approvisionnement Tetra<sup>®</sup> pour faire la connexion entre l'alimentation Tetra<sup>®</sup> et la bande DEL Tetra<sup>®</sup>.
  - 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.

## Prepare Electrical Wiring



#### Electrical Requirements

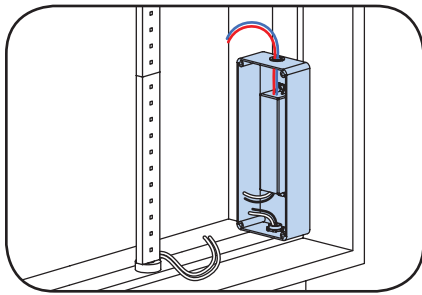
- Limited to use in dry and damp locations.
- The suitability of rain enclosure shall be determined if intended for wet location.
- The grounding and bonding of the LED Driver shall be done in accordance with National Electric Code (NEC) Article 600.
- Follow all National Electric Codes (NEC) and local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

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.

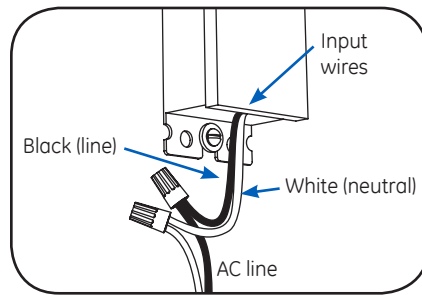
**Note:** This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment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

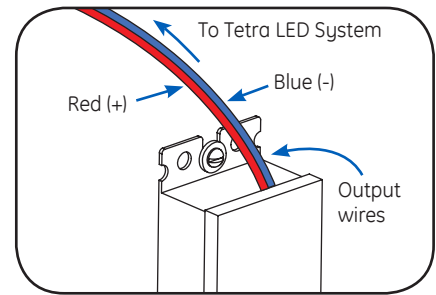
## Power Supply Installation



- 1** Mount the power supply with the base in contact with the mounting surface in an electrical enclosure with adequate dimensions to satisfy the power supply spacing requirements described in the Warning Section above, and suitable for the installation environment. 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 DC connections with LED module must also be protected by a weather box or with electrical grade silicone. Please, refer to the LED module install instructions for more details



- 2** Connect the AC line to the black (line) and white (neutral) input wires of the power supply using 18-14 AWG (0.82-2.08 mm<sup>2</sup>) or 18-10 AWG (0.82-5.26 mm<sup>2</sup>) twist-on wire connectors.



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

**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 0.5 in. (13 mm), use an aluminum or zinc coated steel patch with rivets and sealant.
5. Using the layout guidelines within the LED module installation instructions, determine required number of LED modules required to illuminate the sign.
6. Using the applicable LED module maximum Loading chart, determine the number of Tetra Class 2 Power Supplies required to power the number of LED modules required to illuminate the sign, so as not to overload any single power supply output.
7. Follow the LED module instructions to properly mount the LED modules.
8. Connect the DC output of the power supply to the LED modules using the Power Supply Installation instructions above.
9. 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)	108	120-277	305
Input Frequency (Hz)	-	50/60	-
Input Current (A)	0.35	-	1.1
Output Voltage (VDC)	23	24	25
Output Current (ADC)	-	-	4.0
Output Power (W)	-	-	96
Environmental Operating Temperature Range	-40°C	+25°C	+55°C*
Environmental Humidity (non-condensing)	0%	-	95%
Environmental Storage Temperature Range	-40°C	-	+85°C
Dimensions	9.5 in. x 1.7 in. x 1.2 in. (241 mm x 43.2 mm x 30.5 mm)		

\*Maximum case temperature is 85°C

Supports Tetra Products	SKUs	Rated Power	Maximum Load per Power Supply	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	GEMM2471-W1, GEMM2450-W1, GEMM2441-W1, GEMM2432-W1	0.348W/ module	220 modules/ 110 ft. (35.05 m)	20 ft./ 6.1 m	25 ft./ 7.6 m	35 ft./ 10.6 m	40 ft./ 12.1 m
Tetra MS	GEMS2471-W1, GEMS2450-W1, GEMS2441-W1, GEMS2432-W1	0.228W/ module	340 modules/ 85 ft. (25.91 m)	20 ft./ 6.1 m	25 ft./ 7.6 m	35 ft./ 10.6 m	40 ft./ 12.1 m
Tetra MAX	GEMX2471-W1, GEMX2450-W1, GEMX2441-W1, GEMX2432-W1	0.62W/ module	130 modules/ 87 ft. (26.42 m)	20 ft./ 6.1 m	25 ft./ 7.6 m	35 ft./ 10.6 m	40 ft./ 12.1 m
Tetra PowerMAX	GEPM2471-W1, GEPM2450-W1, GEPM2441-W1, GEPM2432-W1	0.84W/ module	96 modules/ 64 ft. (19.5 m)	20 ft./ 6.1 m	25 ft./ 7.6 m	35 ft./ 10.6 m	40 ft./ 12.1 m
Tetra PowerStrip SS	GESS2471-2, GESS2450-2, GESS2441-2, GESS2432-2	2.52W/ module	36 modules	20 ft./ 6.1 m	25 ft./ 7.6 m	35 ft./ 10.6 m	40 ft./ 12.1 m
	GESS24H71-1, GESS24H50-1, GESS24H41-1, GESS24H32-1	2.95W/ module	30 modules	20 ft./ 6.1 m	25 ft./ 7.6 m	35 ft./ 10.6 m	40 ft./ 12.1 m
Tetra PowerStrip DS	GEDS71-2, GEDS50-2, GEDS41-2, GEDS32-2	5.04W/ module	18 modules	20 ft./ 6.1 m	25 ft./ 7.6 m	35 ft./ 10.6 m	40 ft./ 12.1 m
	GEDSH71-3, GEDSH50-3, GEDSH41-3, GEDSH32-3	5.9W/ module	16 modules	20 ft./ 6.1 m	25 ft./ 7.6 m	35 ft./ 10.6 m	40 ft./ 12.1 m
Tetra EdgeStrip	GEBI71-2, GEBI50-2, GEBI41-2, GEBI32-2	2.52W/ module	36 modules/ 36 ft. (10.97 m)	20 ft./ 6.1 m	25 ft./ 7.6 m	35 ft./ 10.6 m	40 ft./ 12.1 m
	GEBIH71-2, GEBIH50-2, GEBIH41-2, GEBIH32-2	5.40W/ module	17 modules/ 18 ft. (5.49 m)	20 ft./ 6.1 m	25 ft./ 7.6 m	35 ft./ 10.6 m	40 ft./ 12.1 m
Tetra miniStrip DS	GEBD71-2, GEWWBDP6-50K, GEWWBDP6-41K, GEWWBDP6	1.68W/ module	50 modules/ 50 ft. (15.23 m)	20 ft./ 6.1 m	25 ft./ 7.6 m	35 ft./ 10.6 m	40 ft./ 12.1 m
	GEBDH71-2, GEBDH50-1, GEBDH41-1, GEBDH32-1	1.94W/ module	42 modules/ 42 ft. (12.79 m)	20 ft./ 6.1 m	25 ft./ 7.6 m	35 ft./ 10.6 m	40 ft./ 12.1 m
Tetra Contour LS	GEXNLRD-1	1.30W/ ft. (strip)	69 ft. (21m)	20 ft./ 6.1 m	30 ft./ 9.1 m	50 ft./ 15.2 m	86 ft./ 26.1 m
	GEXNLBL-1, GEXNLGL-1	1.73W/ ft. (strip)	52 ft. (15.85 m)	20 ft./ 6.1 m	30 ft./ 9.1 m	50 ft./ 15.2 m	86 ft./ 26.1 m
	GEXNL65-1, GEXNL32-1	3.17W/ ft. (strip)	29 ft. (8.8 m)	20 ft./ 6.1 m	30 ft./ 9.1 m	50 ft./ 15.2 m	86 ft./ 26.1 m
Tetra Contour	GEXNBL-1, GEXNGL-1, GEXNRD-1	1.52W/ ft. (strip)	59 ft. (17.9 m)	20 ft./ 6.1 m	30 ft./ 9.1 m	50 ft./ 15.2 m	86 ft./ 26.1 m
	GEXNYG-1, GEXNRC-1	2.27W/ ft. (strip)	40 ft. (12.19 m)	20 ft./ 6.1 m	30 ft./ 9.1 m	50 ft./ 15.2 m	86 ft./ 26.1 m
	GEXN65-1, GEXN32-1	3.17W/ ft. (strip)	29 ft. (8.8 m)	20 ft./ 6.1 m	30 ft./ 9.1 m	50 ft./ 15.2 m	86 ft./ 26.1 m

Chart continued on next page

Chart continued

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				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>
Line Fit Light	GEF12DHOLED-1 GEF12SGNHOLED-1 GEF12CWHOLED-1	5.8W/bar	16 ft.	-	-	-	-
	GEF18DHOLED-1 GEF18SGNHOLED-1 GEF18CWHOLED-1	7.2W/bar	16 ft.	-	-	-	-
	GEF24DHOLED-1 GEF24SGNHOLED-1 GEF24CWHOLED-1	11.5W/bar	16 ft.	-	-	-	-
	GEF30DHOLED-1 GEF30SGNHOLED-1 GEF30CWHOLED-1	14.4W/bar	16 ft.	-	-	-	-
	GEF36DHOLED-1 GEF36SGNHOLED-1 GEF36CWHOLED-1	17.3W/bar	16 ft.	-	-	-	-
	GEF42DHOLED-1 GEF42SGNHOLED-1 GEF42CWHOLED-1	20.2W/bar	16 ft.	-	-	-	-
	GEF48DHOLED-1 GEF48SGNHOLED-1 GEF48CWHOLED-1	23.0W/bar	16 ft.	-	-	-	-
	GEF60DHOLED-1 GEF60SGNHOLED-1 GEF60CWHOLED-1	28.8W/bar	16 ft.	-	-	-	-
	GEF64DHOLED-1 GEF64SGNHOLED-1 GEF64CWHOLED-1	30.2W/bar	16 ft.	-	-	-	-
	GEF72DHOLED-1 GEF72SGNHOLED-1 GEF72CWHOLED-1	34.6W/bar	16 ft.	-	-	-	-
	GEF84DHOLED-1 GEF84SGNHOLED-1 GEF84CWHOLED-1	40.3W/bar	16 ft.	-	-	-	-
	GEF96DHOLED-1 GEF96SGNHOLED-1 GEF96CWHOLED-1	46.1W/bar	16 ft.	-	-	-	-

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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