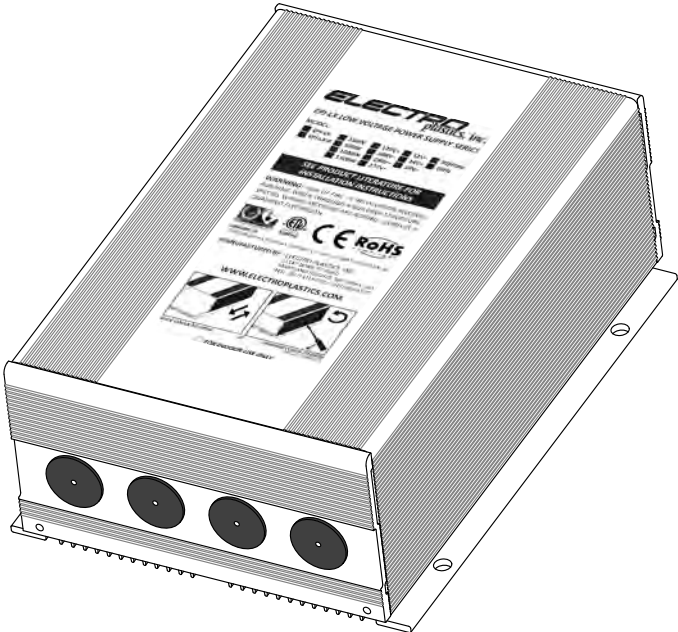


1

Description

The EPI-LX-R power supply series is built to the highest safety standard, with built-in circuit breakers on the primary and secondary sides. The load, which is divided into separate circuits to provide SELV (Safety Extra-Low Voltage), is connected to an interface board. Additionally, a built-in regular board serves as an intelligent switch to enable/disable the line voltage in such a way that switching/pulsing does not harm the power supply's toroidal coil(s). The interface and regulator boards are both RoHS compliant.



Design

The power supply's mechanical design is both functional and installation friendly. This slim and congenial design is made from extruded aluminum profiles providing a high performance cooling structure as well as an enclosure eliminating air sound. Sound is also reduced by the high quality winding of the coils themselves, thus making the power supply essentially silent. All vibrating parts are isolated, thereby eliminating transmittal of noise to the building structure.

Surge

Traditional power supplies / transformers have a high starting current which creates a surge that is many times higher than a nominal current. The larger EPI-LX-R power supplies have a unique parallel connection that reduces the surge by one third for a 1500 VA power supply and one half for a 1000 VA power supply. For certain areas (particularly residential applications), NEC requires AFCI circuit breakers on 120 VAC systems. To simplify wiring and circuit breakers, use 230 VAC models.

Controls

Controls are to be chosen carefully, as power supplies started up often in quick succession will be ruined as a result of the large amount of heat developed in the primary coil. The heat developed in the power supply increases by I²R, so when the starting current occurs, the heat developed can be up to 1000 times normal. A power supply is not ruined by the load but by the starting current which generates an abundant amount of heat. This causes the insulation in the transformer to be destroyed. To ensure long life and maximum efficiency, use only recommended controls for the EPI-LX-R power supply series.

Derating of Power Supplies and Wires

Power Supplies that are exposed to high ambient temperatures above 77°F (25°C) must be derated, i.e., the maximum permitted load must be reduced. It is also very important not to bundle up wires carrying high amps as they will overheat, thereby inhibiting the ability to carry the intended current.

2

Supplied Parts

- 1
- One (1) power supply
- 2
- Four (4) self-drilling screws (#8-18)
- 3
- Four (4) recessed bumpers

3

Installation Guidelines

To ensure optimum conditions and a long service life for the EPI-LX-R power supply it is important to:

- ▶
- Mount the power supply in a vertical position (with load wires routing from bottom panel) so that heat is dissipated effectively.
- ▶
- Never put a power supply where the ambient temperature is higher than 77°F (25°C), unless specified otherwise on the power supply's rating plate.

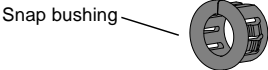
- ▶
- The power supply must not be in contact with flammable materials, as it is completely normal for power supplies to heat up, and it is not unusual for the surface of the enclosure on a power supply to be hot to the touch.
- ▶
- The power supply must not be covered with an insulating material.
- ▶
- It is preferable not to place the power supply in 'quiet' areas, such as bedrooms and reading rooms, as the magnetization of the iron core may generate a low noise which could be annoying.
- ▶
- Avoid placing the power supply on large surfaces, which may transmit vibration; good mounting points are concrete pillars, brick walls and steel girders.
- ▶
- Do not place the power supply in the vicinity of monitors and television screens, as it can affect the picture's positions.
- ▶
- The power supply must be positioned so that it can easily be accessible for servicing and repairs.

4

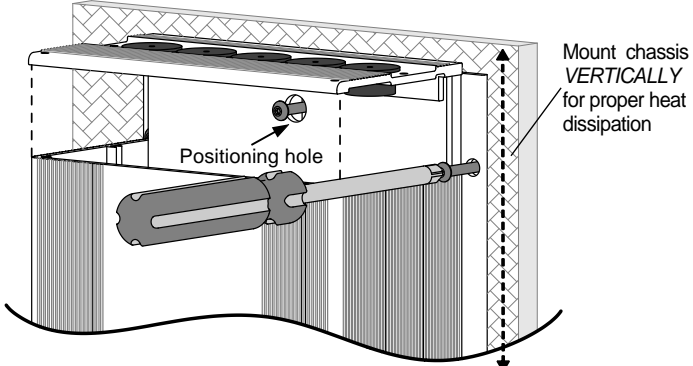
Installation Procedure

The installation must be carried out by an electrician and comply with electrical codes.

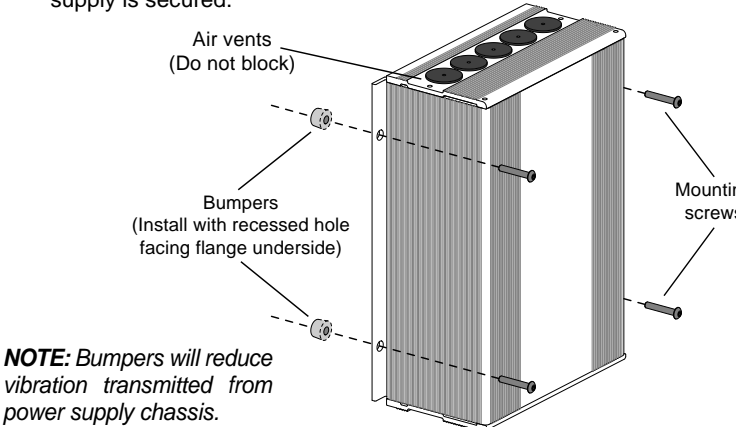
- 1
- Turn off power at the main electrical panel to avoid electrical shock. If needed, unhinge and remove cover of power supply.
- 2
- Remove snap bushing from positioning hole on power supply.



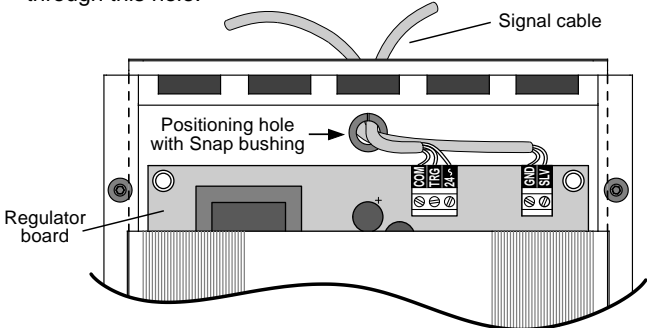
- 3
- Mark a center point at the top of the mounting location. Drive a screw (with head diameter less than positioning hole) partially into center point. Screw head should be offset enough so as to hang power supply.
- 4
- Hang power supply on center screw and align power supply accordingly. The center screw is a temporary placeholder while mounting screws and bumpers along outer flanges are secured.
- Do not rely on center screw to fully support weight of power supply.**



- 5
- Install bumpers on underside of power supply along outer flanges as shown below. Secure power supply to mounting surface with included mounting screws. Remove center screw once power supply is secured.



- 6
- Reinsert snap bushing into positioning hole. Route signal cable(s) through this hole.

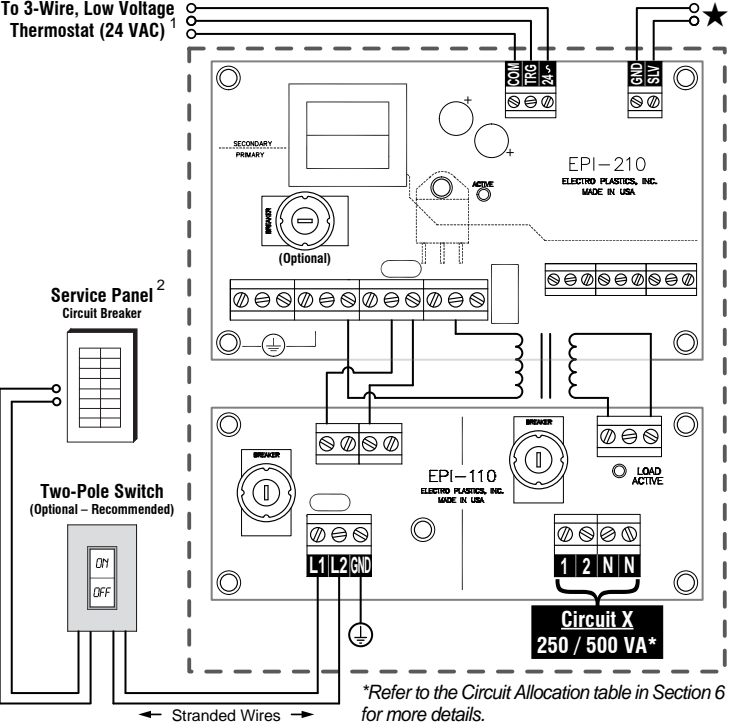


- 7
- Wire the EPI-LX-R power supply according to your application. See the wiring diagram in Section 5.
- 8
- Apply power to the EPI-LX-R power supply.

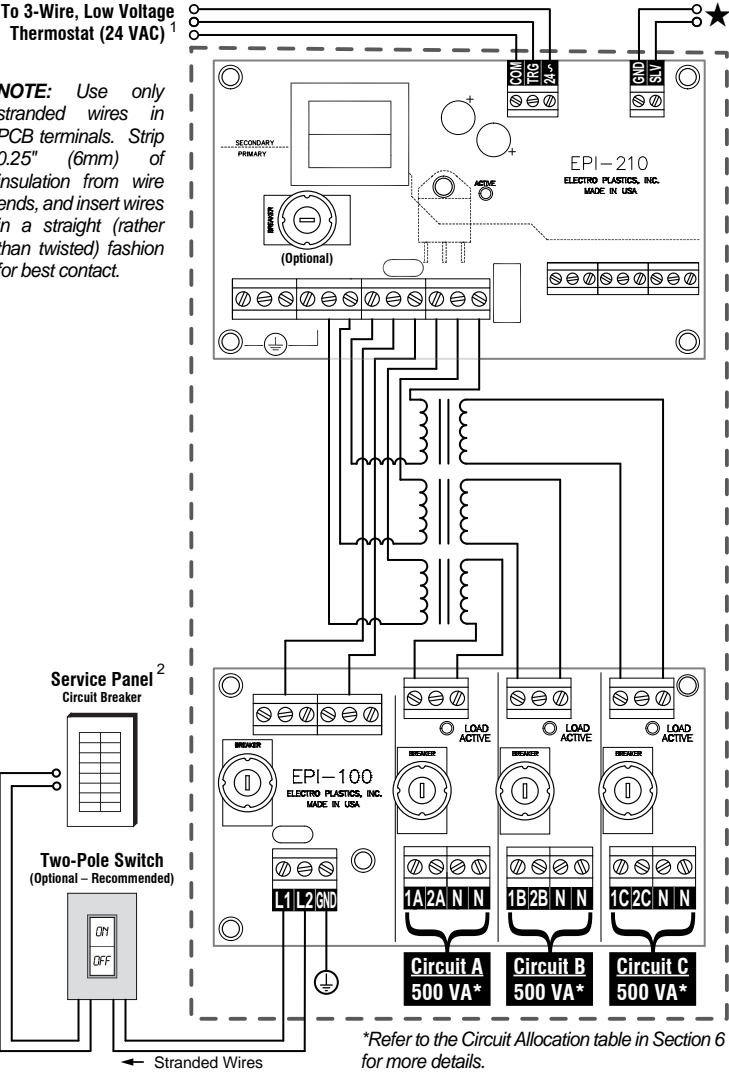
5 Wiring Diagram

The EPI-LX-R power supply series has 2 types of PCB interface boards.

5.1 EPI-110 + EPI-210 PCB ▶ EPI-LX-R (250, 500 VA) Wiring Diagram



5.2 EPI-100 + EPI-210 PCB ▶ EPI-LX-R (1000, 1500 VA) Wiring Diagram



¹ To bypass thermostatic control, place a shunt wire between the terminals marked (TRG) and (24-) on the EPI-210 PCB. Switching can also be implemented between these two terminals.

² Terminals marked with an "L2" can be used as neutral terminals. For certain areas, NEC requires AFCI circuit breakers on 120 volt systems. To simplify wiring and circuit breakers, use 230 volts.

★ **NOTE:** Up to 20 power supplies can be connected to one control unit with a turn on delay of 1.5 seconds between each power supply.



6 Product Specifications

Circuit Allocation

Model	Circuit I.D.				Maximum Output	Max. Capacity Per Circuit	
	X	A	B	C		Constant Load	Variable Load*
EPI-LX-R-250	✓				1 x 250 VA	80%	90%
EPI-LX-R-500	✓				1 x 500 VA	80%	90%
EPI-LX-R-1000		✓	✓	✗	2 x 500 VA	80%	90%
EPI-LX-R-1500		✓	✓	✓	3 x 500 VA	80%	90%

✓ = Circuit applicable ✗ = Circuit not applicable

*Variable load refers to a PTC type of draw (e.g. STEP Warmfloor™ self-regulating heating elements) as the load will draw less after startup for continuous duty cycles.

Product Classification

Model	Primary Voltage	Secondary Voltage		Frequency
		12 VAC	24 VAC	
EPI-LX-R-250	120 VAC	✓	✓	60 Hz
	230 VAC	✗	✓	50/60 Hz
EPI-LX-R-500	120 VAC		✓	60 Hz
	208 VAC		✓	60 Hz
EPI-LX-R-1000	120 VAC		✓	60 Hz
	208 VAC		✓	50/60 Hz
EPI-LX-R-1500	120 VAC		✓	60 Hz
	208 VAC		✓	50/60 Hz

✓ = Voltage available ✗ = Voltage not available

Dimensions & Weight

Model	Height "H"		Weight	
	in	mm	lb	kg
EPI-LX-R-250	11.5	292	14	6.4
EPI-LX-R-500	14.375	365	17	7.7
EPI-LX-R-1000	22.375	568	28	12.7
EPI-LX-R-1500	28.375	721	41	18.6

Replacement Circuit Breaker

Snap Action Miniature C.B.
(Type MB1)

Model MB1-XX-PH
(where XX = Amps)

Current Ratings:
2.5A, 5A, 10A, 15A, 20A, 25A

(AC/DC) Voltage:
250 VAC (maximum)
32 VDC (maximum)

Interrupting Capacity:
1000 A @ 250 VAC
2000 A @ 125 VAC
200 A @ 32 VAC

Circuit Breaker Designation

Model	Primary Circuit Breaker			Secondary Circuit Breaker	
	120 VAC	208 VAC	230 VAC	12 VAC	24 VAC
EPI-LX-R-250	5A		2.5A	1 x 25A	1 x 15A
EPI-LX-R-500	10A	5A	5A		1 x 25A
EPI-LX-R-1000	15A	10A	10A		2 x 25A
EPI-LX-R-1500	20A	15A	15A		3 x 25A

Ordering Information

Model Voltage Frequency

(Example) → EPI-LX-R-500 , 120/24V , 60Hz

7 Technical Specifications

- Power supply type:** Low voltage dry type isolation power supply
- Primary voltage:** 120, 208, or 230 VAC
- Secondary voltage:** 24 VAC
- Frequency:** 60 Hz (50/60 Hz for 230 VAC models)
- Efficiency:** 96%
- Insulation class:** B (130°C)
- Circuit protection:** Circuit breakers on primary and on secondary
- Enclosure:** For indoor use only
- Wire gauge (EPI-100/110 PCB):** 14 to 10 AWG (2.5 to 6 mm²)
- Wire gauge (EPI-210 PCB):** 20 to 14 AWG (0.5 to 2.5 mm²)
- Maximum signal load:** 2.5 A / 24 VAC
- Maximum control (per master signal):** 20 EPI-LX-R power supplies linked via GND and SLV terminals on each EPI-210 PCB

Warranty & Approvals

Electro Plastics, Inc. warrants this product, excluding circuit breakers, to be free from defects in the workmanship or materials, under normal use and service, for a period of ten (10) years (transformer coils) and two (2) years (internal electronics) from the date of purchase by the consumer. If during the warranty period the product is determined to be defective, Electro Plastics, Inc. (at its sole discretion) shall repair or replace it. Please refer to the Terms & Conditions of Sale, located at www.electroplastics.com for complete details.



Conforms to: CENELEC EN 61558-1, IEC 61558-1, IEC 61558-2-2, UL 5085-1, UL 5085-2-2, CSA C22.2 No. 66

Customer Assistance

For any questions regarding product installation or operation, contact us at:

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