

## Power Line Power Supply Models 78100R and 78101R



- ▼ 5W switch mode power supply and PL-20 power line communication coupler combined in a single compact package
- ▼ Universal input voltage range (90 – 240 VAC)
- ▼ Interchangeable power cord supports world wide plug requirements
- ▼ US/Japan and Continental Europe power plugs included (Model 78101R only)
- ▼ Isolated design supports worldwide safety requirements
- ▼ RoHS-compliant
- ▼ Meets the mandatory California Energy Commission Efficiency Level IV regulations

### Description

The Model 7810xR RoHS-compliant Power Line Power Supply is a universal switching power supply that includes a communication coupling circuit for LONWORKS® PL-20C and PL-20N C-band power line communication technology. It has a universal input voltage range (90VAC – 240VAC) and supports easy replacement of the power cord to make it compatible with power plugs in all parts of the world. Model 78101R ships with two power cords – US/Japan and Continental Europe. Model 78100R does not include a power cord and is available only in high volume. This power supply is designed for use only with LONWORKS PL-20 communication devices.

Figure 1 shows the schematic for using the power supply/coupler described in this datasheet with a product containing a PL 3120® or PL 3150® Smart Transceiver. For component values and recommended part numbers/suppliers for this design, refer to example 12, section *Recommended Coupling Circuit Schematics* in Chapter 4 of the *PL 3120/ PL 3150 PL Smart Transceivers Data Book*. The power line coupler in the power supply incorporates line-to-neutral coupling.

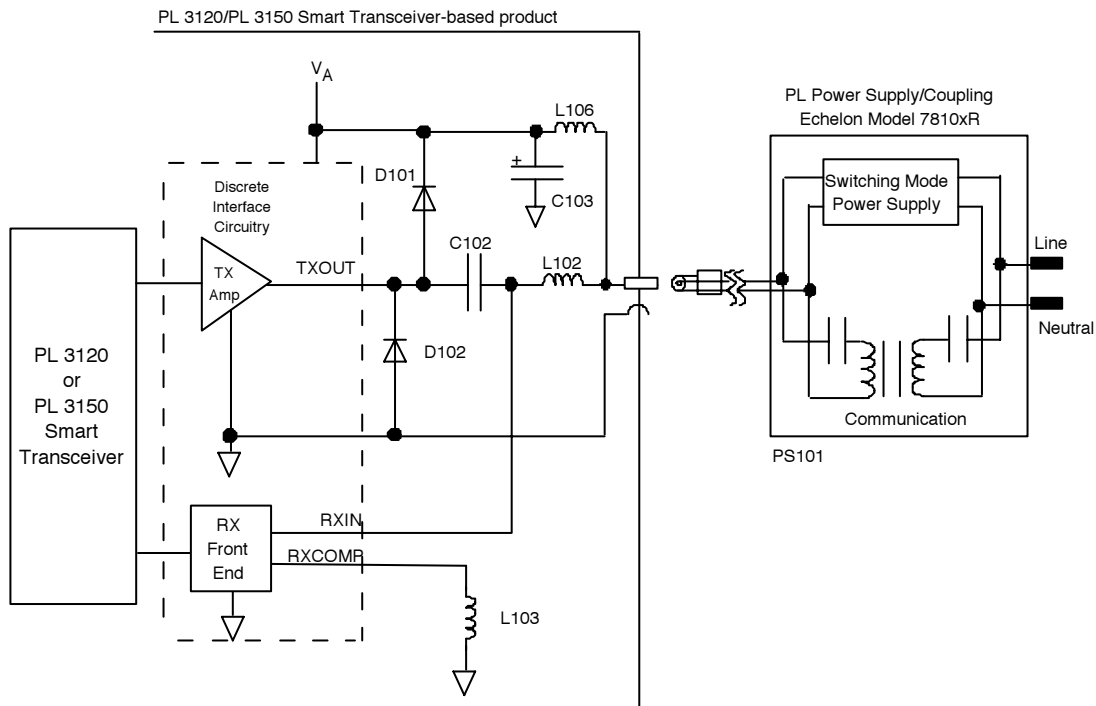


Figure 1: L-N Isolated Power Supply/Coupler Schematic

---

## Input Specifications

Input Voltage Range	90-240VAC
Input Frequency	50-60Hz
Inrush Current	6A max. (cold start)
Input Power	<0.5W (min.) – 10W (max.)


## Output Specifications

Output Voltage	12 volts @ 125mA
Output voltage range	17.2V (no load) – 11V (full load)
Output Current (maximum)	400mA
Max. Power (total)	5 watts
Ripple p-p (worst case)	200 mV
Efficiency	> 63%
Short Circuit Protection	Enabled

## General Specifications

Operating Temperature	0°C to 40°C @ full load and natural convection
Storage Temperature	-40°C to +85°C
Operating Humidity	0-90% RH @ 50°C (non condensing)
Storage Humidity	0-96% RH max @ 50°C (non condensing)
Vibration	5Hz - 7.5Hz @ 0.5" D.A., 5.5Hz-200Hz @ 1.5G (includes sine and random)
Shock	30g @ 11ms; 100g @ 3ms (half sine)
Energy Regulations	California Energy Commission Regulations CEC 400-2005-012 Table U-1, EFFICIENCY LEVEL IV
EMC	FCC Part 15 Class B, EN55022 Class B, EN55024, EN50065-1, CISPR 22 Class B, VCCI Class B
Agency Listing	U.L. 60950, cU.L. C22.2 No. 60950-00, TÜV-GS, CE, CCC, JET
Leakage Current	0.25mA

## Mechanical Specifications

Weight	<160gms + AC Cable
Size	99.6 x 43.5 x 30.8 mm (L x W x H)
Output Cord	L = 1.8m
Input Cord.	L = 1.5m
Output Connection	

## Ordering Information

Product	Echelon Model Number
Power Line Power Supply (Includes US/Japan and Continental Europe power cords.)	78101R
Power Line Power Supply without power cord (Requires separate purchase of a power cord with appropriate plug type; only available in high volume.)	78100R

---

Copyright © 2006, Echelon Corporation. Echelon, LON, LonWORKS, LonMARK, LonBuilder, NodeBuilder, LonManager, LonTalk, LonUsers, LonPoint, Digital Home, Neuron, 3120, 3150, LNS, /LON, LonWorld, ShortStack, Panoramax, Panoramax Powered by Echelon, LonMaker, the Echelon logo, and the LonUsers logo are trademarks of Echelon Corporation registered in the United States and other countries. Pyxos, LonLink, LonResponse, LonSupport, LONews, Open Systems Alliance, OpenLDV, Powered by Echelon, LNS Powered by Echelon, LonWORKS Powered by Echelon, Networked Energy Services Powered by Echelon, NES Powered by Echelon, Digital Home, Digital Home Powered by Echelon, and Thinking Inside the Box are trademarks of Echelon Corporation. Other trademarks belong to their respective holders.

### Disclaimer

Neuron Chips, Free Topology Twisted Pair Transceiver Modules, and other OEM Products were not designed for use in equipment or systems which involve danger to human health or safety or a risk of property damage and Echelon assumes no responsibility or liability for use of the Neuron Chips or Free Topology Twisted Pair Transceiver Modules in such applications. ECHELON MAKES AND YOU RECEIVE NO WARRANTIES OR CONDITIONS, EXPRESS, IMPLIED, STATUTORY OR IN ANY COMMUNICATION WITH YOU, AND ECHELON SPECIFICALLY DISCLAIMS ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. 003-0425-01B