

## Features

- Frequency Range: 10 kHz to 10 MHz
- Current Ratings of 16, 32, 63 and 100 Amps
- Fully Compliant with MIL-STD-461D/E/F/G
- Remote Switching of Line Under Test
- Four-conductor, 50 $\Omega$ , 50  $\mu$ H, Network appropriate for 3 $\emptyset$  Delta and Wye Power Configurations
- Three-Year Warranty



## Description

The LI-3P-4x Series consists of four separate models of four-conductor, 50 $\Omega$ , 50  $\mu$ H Line Impedance Stabilization Networks (LISNs). The primary differences between the four models are their respective current ratings:

<b>LI-3P-416</b>	<b>16 Amps</b> (per line, continuous)
<b>LI-3P-432</b>	<b>32 Amps</b> (per line, continuous)
<b>LI-3P-463</b>	<b>63 Amps</b> (per line, continuous)
<b>LI-3P-4100</b>	<b>100 Amps</b> (per line, continuous)

These LISNs provide the necessary measurement platform for performing power line conducted emissions compliance testing per MIL-STD-461, CE102, conducted emissions, radio frequency potential, power leads. The LISNs perform the following functions:

- provide a defined, stable power line impedance across its frequency range for the Equipment Under Test (EUT);
- isolate the EUT and measurement circuit from the power source, thereby minimizing its influence on the measurements; and,
- couple the disturbance voltages to the coaxial measurement port, which connects to the measuring instrument.

The LISNs use air-core inductors to prevent saturation and permeability variation. The mounting plates are left unpainted in order to facilitate connection to earth ground in their installation, which is essential due to high leakage currents.

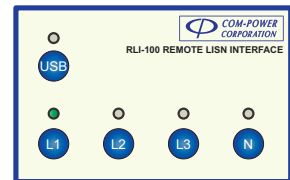
The side panels for each LISN are louvered for cooling purposes. The LI-3P-463 and LI-3P-4100 also include two internal cooling fans operated by a switch on the rear panel.

### The following items are included with each LISN:

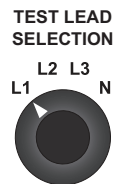
- ✓ Mating Socket Connector (for power input cable)
- ✓ Mating Plug Connector (for EUT power cable)
- ✓ RLI-100 Remote LISN Interface Unit
- ✓ Fiber Optic Cable (30 meters)
- ✓ (2) AC Power Adapters (6 VDC, 500 mA, unregulated)
- ✓ AC Power Adapter (15 VDC, 500 mA, unregulated) (LI-3P-463 and LI-3P-4100 models only)

## Remote or Local Operation

Remote switching of the line under test (L1, L2, L3, N) is performed using the **RLI-100 Remote LISN Interface**, which controls the LISN via fiber optic connection.



In addition to the remote method, the line under test can also be selected using the mechanical, four-position switch located on the front panel of the LISNs.



Using either switching method, the lines which are not selected are internally terminated into 50 ohms, while the selected line is terminated by the 50 ohm input impedance of the measuring instrument.

## Transient Protection

The Com-Power **LIT-930A Transient Limiter** is a recommended accessory for protection of the RF input of your measuring instrument from potentially damaging, instantaneous voltage transients.

The transient limiter also reduces the possibility of overload by incorporating two 5 dB attenuation/impedance matching pads, in addition to its low-pass and high-pass filter sections which further attenuate any out-of-band emissions.



## Calibration

Each LISN is individually calibrated in compliance with the relevant requirements of MIL-STD-461. Impedance and Insertion Loss data is supplied with each unit, along with the certificate of calibration. Calibration is traceable to NIST.

Recognized ISO 17025 accredited calibration is also available upon request.

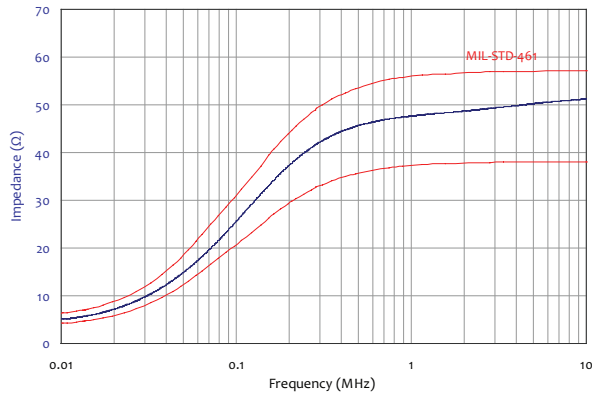
### Specifications

All values are typical, unless specified.  
All specifications are subject to change without notice.

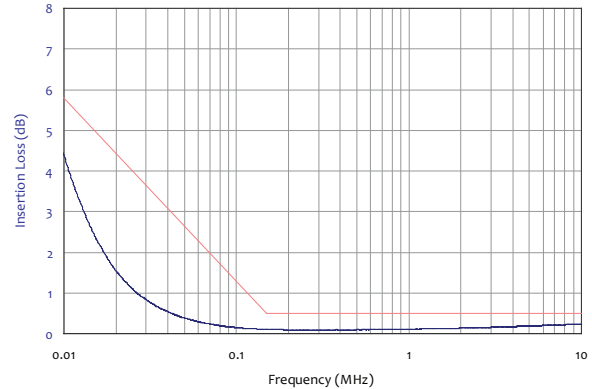
	LI-3P-416	LI-3P-432	LI-3P-463	LI-3P-4100
<b>GENERAL</b>				
Product Description	Line Impedance Stabilization Network (LISN)			
Application	Power Line Conducted Emissions Tests			
Standards	MIL-STD-461D/E/F/G			
Type	50Ω, 50 μH, (4) Conductor Network			
Frequency Range	10 kHz to 10 MHz			
Insertion Loss - 10 kHz to 150 kHz	<6 to <0.5 dB (decreasing linearly with the logarithm of frequency)			
Insertion Loss - 150 kHz to 30 MHz	<0.5 dB			
Isolation - 10 kHz to 200 kHz	>10 to >20 dB (increasing linearly with the logarithm of frequency)			
Isolation - 200 kHz to 2 MHz	>20 to >35 dB (increasing linearly with the logarithm of frequency)			
Isolation - 2 MHz to 10 MHz	>35 dB			
<b>INPUT POWER RATINGS FOR EQUIPMENT UNDER TEST (EUT)</b>				
Current (maximum continuous, per line)	16 Amperes	32 Amperes	63 Amperes	100 Amperes
AC Voltage (maximum)	500 Volts <sub>rms</sub> (line to line), 288 Volts <sub>rms</sub> (line to ground); 50 to 400 Hz			
DC Voltage (maximum)	705 Volts DC			
<b>ELECTRICAL</b>				
Remote Interface Power Inputs	6 Volts DC (unregulated), 500 mA (LISN and RLI-100 Remote LISN Interface)			
Cooling Fans Power Input	Not Applicable		15 Volts DC (unregulated), 500 mA	
<b>INPUT/OUTPUT CONNECTORS</b>				
Power Input Port Plug (affixed to LISN chassis)	Schneider Electric P/N: 83862	Schneider Electric P/N: 83874	Schneider Electric P/N: 81886	Schneider Electric P/N: 81898
Power Input Socket (for power input cable)	Schneider Electric P/N: PKF16M745	Schneider Electric P/N: PKF32M745	Schneider Electric P/N: 81486	Schneider Electric P/N: 81498
Power Output Port Socket (affixed to LISN chassis)	Schneider Electric P/N: PKF16F745	Schneider Electric P/N: PKF32F745	Schneider Electric P/N: 81286	Schneider Electric P/N: 81298
Power Output Port Plug (for EUT power cable)	Schneider Electric P/N: PKE16M745	Schneider Electric P/N: PKE32M745	Schneider Electric P/N: 81386	Schneider Electric P/N: 81398
RF Measurement Port	50Ω - N-Type (female)			
Fiber Optic Ports	Avago Duplex Latching POF Jack (LISN and RLI-100 Remote LISN Interface)			
Remote Interface Power Input Ports	5.5/2.5 mm Power Jack (LISN and RLI-100 Remote LISN Interface)			
Cooling Fans Power Input Port	Not Applicable		5.5/2.1 mm Power Jack	

-- specifications continued on next page --

### Typical Impedance Data



### Typical Insertion Loss Data



### Specifications (continued)

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	LI-3P-416	LI-3P-432	LI-3P-463	LI-3P-4100
<b>DIMENSIONS &amp; WEIGHT</b>				
Figure 1 - Dimension <b>A</b>	25" (63.5 cm)	25.4" (64.5 cm)	38.7" (98.4 cm)	43.5" (110.5 cm)
Figure 1 - Dimension <b>B</b>	19.9" (50.5 cm)	20.3" (51.5 cm)	24.9" (63.2 cm)	25.7" (65.3 cm)
Figure 1 - Dimension <b>C</b>	17.8" (45.2 cm)	17.8" (45.2 cm)	20.9" (53 cm)	20.9" (53 cm)
Figure 1 - Dimension <b>D</b>	14.4" (36.6 cm)	14.4" (36.6 cm)	18.8" (47.7 cm)	18.8" (47.7 cm)
Figure 1 - Dimension <b>E</b>	12.2" (31 cm)	12.2" (31 cm)	15.9" (40.5 cm)	15.9" (40.5 cm)
Figure 1 - Dimension <b>F</b>	13.9" (35.4 cm)	13.9" (35.4 cm)	15.9" (40.5 cm)	15.9" (40.5 cm)
Figure 1 - Dimension <b>G</b>	6.1" (15.5 cm)	6.8" (17.3 cm)	10.4" (26.5 cm)	12.8" (32.5 cm)
Figure 1 - Dimension <b>H</b>	3.8" (9.6 cm)	4.1" (10.4 cm)	4.3" (11 cm)	5.2" (13.1 cm)
Figure 1 - Dimension <b>I</b>	5.6" (14.2 cm)	6.3" (16 cm)	10.4" (26.5 cm)	12.8" (32.5 cm)
Figure 1 - Dimension <b>J</b>	3.5" (8.9 cm)	4" (10.2 cm)	4.3" (11 cm)	5.2" (13.1 cm)
Weight (including input/output connectors)	25.1 lbs. (11.4 kg)	29.3 lbs. (13.3 kg)	43.4 lbs. (19.7 kg)	59.1 lbs. (26.8 kg)
<b>ENVIRONMENTAL</b>				
Operating Temperature	40°F to 104°F (5°C to 40°C)			
Cooling	<ul style="list-style-type: none"> <li>Louvered Side Panels</li> <li>(no forced air)</li> </ul>		<ul style="list-style-type: none"> <li>Louvered Side Panels</li> <li><b>Forced Air</b> by (2) user-controlled, internal fans with (2) 4.5" circular intake openings on rear panel (each opening protected by a circular metal finger guard)</li> <li>(2) 4" square air outlets located on the top cover (each opening protected by metallic mesh)</li> </ul>	

### Figure 1 - Product Dimensions

