COM-POWER

Three-Phase Line Impedance Stabilization Network
LI-3P-2100 V2.0

Features

- **Frequency Range: 9 kHz to 30 MHz**
- **Current Ratings: 100 Amps**
- **Fully Compliant with CISPR 16-1-2 (CE) and ANSI C63.4 (FCC)**
- **Remote Switching of Line Under Test**
- **Four-conductor, 50Ω, 50/250 µH +5Ω Network for 3Ø Delta & Wye Power Configurations**
- **Three-Year Standard Warranty**

Description

*The **LI-3P-2100** consists of four-conductor, 50Ω, 50/250 µH +5Ω Line Impedance Stabilization Networks (LISNs); also known as Artificial Mains V-Networks (V-AMNs). Performance measurements can be conducted using the RLI v2.0 Remote LISN Interface. LISN **LI-3P-2100** provides the necessary measurement platform for performing power line conducted emission compliance testing per most worldwide commercial EMI/ EMC requirements, such as FCC (U.S.), CE (Europe), AS/ NZS (Australia/New Zealand), VCCI (Japan), Industry Canada, etc.*

The LISN perform each of the following functions during the measurement:

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

***LI-3P-2100** uses 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 Following items are included with LISN **LI-3P-2100**:*

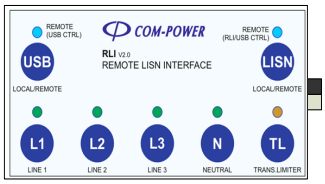
- *(5)Plug Socket Connectors for Power Input Cable*
- *(5)Plug Pin Connectors for EUT Cable*
- *RLIV2.0 Remote LISN Interface*
- *Fiber Optic Cable (10 meters)*

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 via the front panel of the LISN.

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 in-built Transient Limiter is used 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

***LI-3P-2100** is individually calibrated in compliance with the relevant requirements of CISPR 16-1-2 and ANSI C63.4. Impedance, Phase, Isolation, and Insertion Loss data is supplied with each unit, along with the certificate of calibration. 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.

GENERAL	
Product Description	**Line Impedance Stabilization Network (LISN)**
Application	**Power Line Conducted Emissions (Disturbance Voltages) Tests**
Standards	**CISPR 16-1-2 (CE), ANSI C63.4 (FCC)**
LISN Type	**50Ω, 50/250 µH +5Ω** *(4)* **Conductor Network**
Frequency Range	**9 kHz to 30 MHz**
Insertion Loss - 9 kHz to 150 kHz	**<17 to <11 dB** *(decreasing linearly with the logarithm of frequency)*
Insertion Loss - 150 kHz to 30 MHz	**<11 dB**
Isolation - 9 kHz to 50 kHz	**>0 to >40 dB** *(increasing linearly with the logarithm of frequency)*
Isolation - 50 kHz to 30 MHz	**>40 dB**
INPUT POWER RATINGS FOR EQUIPMENT UNDER TEST (EUT)	
Current (maximum continuous, per line)	**100 Amperes**
AC Voltage (maximum)	**865 Volts rms** (line to line), **500 Volts rms** (line to ground)
DC Voltage (maximum)	**600 Volts DC**
ELECTRICAL	
Remote Interface Power Inputs	**6 Volts DC** *(unregulated)*, **500 mA** *(LISN Front Panel and RLI- Remote LISN Interface)*
Cooling Fans Power Input	**15 Volts DC** *(unregulated)*, **500 mA** *(LISN Rear Panel)*
INPUT/OUTPUT CONNECTORS	
Power Input Port Plug (affixed to LISN chassis)	**100A Receptable Pins** **CONN-RP100GR** *[Red]*, **CONN-RP100GY** *[Yellow]*, **CONN-RP100GBL** *[Blue]*, **CONN-RP100GB** *[Black]*, **CONN-RP100GG** *[Green]*
Power Input Socket (for power input cable)	**100A Plug Sockets** **CONN-PS100GR** *[Red]*, **CONN-PS100GY** *[Yellow]*, **CONN-PS100GBL** *[Blue]*, **CONN-PS100GB** *[Black]*, **CONN-PS100GG** *[Green]*
Power Output Port Socket (affixed to LISN chassis)	**100A Receptable Sockets** **CONN-RS100GR** *[Red]*, **CONN-RS100GY** *[Yellow]*, **CONN-RS100GBL** *[Blue]*, **CONN-RS100GB** *[Black]*, **CONN-RS100GG** *[Green]*
Power Output Port Plug (for EUT power cable)	**100A Plug Pins** **CONN-PP100GR** *[Red]*, **CONN-PP100GY** *[Yellow]*, **CONN-PP100GBL** *[Blue]*, **CONN-PP100GB** *[Black]*, **CONN-PP100GG** *[Green]*
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	**5.5/2.1 mm Power Jack** *(LISN front panel and RLI-100 Remote LISN Interface)*
Cooling Fans Power Input Port	**5.5/2.1 mm Power Jack** *(LISN Rear Panel)*
ENVIRONMENTAL	
Operating Temperature	**40°F to 104°F** *(5°C to 40°C)*
Cooling	• **Louvered Side Panels** • **Forced Air 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)* • **(2) 4" square air outlets located on the top cover** *(each opening protected by metallic mesh)*

Product Dimensions

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DIMENSIONS & WEIGHT	
Figure 1 - Dimension A	**36.18"** *(91.9 cm)*
Figure 1 - Dimension B	**31.10"** *(79 cm)*
Figure 1 - Dimension C	**28.97"** *(73.6cm)*
Figure 1 - Dimension D	**17.36"** *(44.1 cm)*
Figure 1 - Dimension E	**17.8"** *(45.2 cm)*
Figure 1 - Dimension F	**1.48"** *(3.76 cm)*
Figure 1 - Dimension G	**3.83"** *(9.75cm)*
Figure 1 - Dimension H	**1.48"** *(3.76cm)*
Figure 1 - Dimension I	**3.7"** *(9.4 cm)*
Weight	**184.64 lbs.** *(83.750 kg)*
Weight with shipment box	**298.50 lbs.** *(135.40 kg)*
shipment box size	**41.98" x 28.60" x 31.20"**

Figure 1 - Product Dimensions

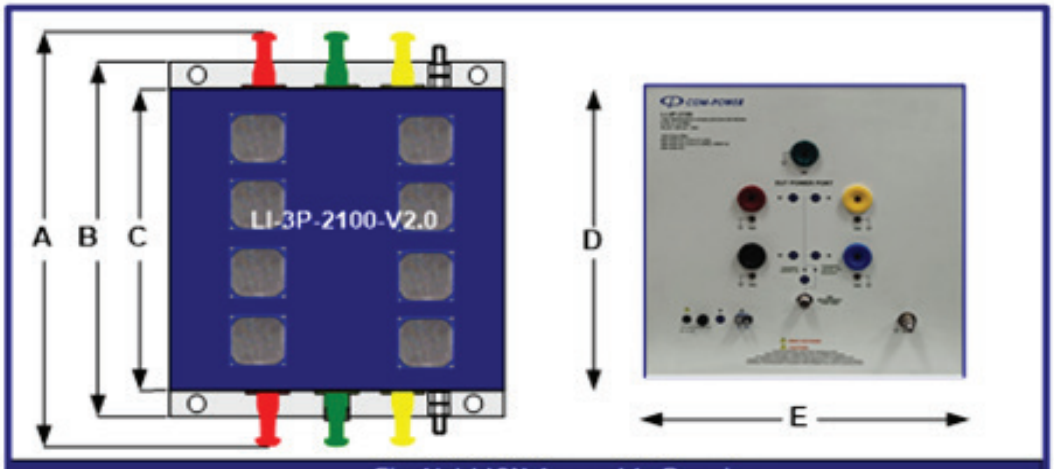


Fig.1(a) LISN Assembly Drawing

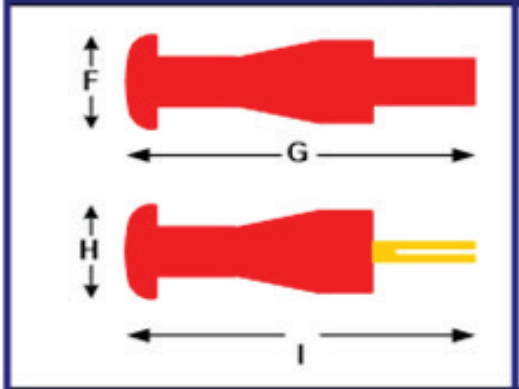


Fig.1(b)
Input Socket/Output plug

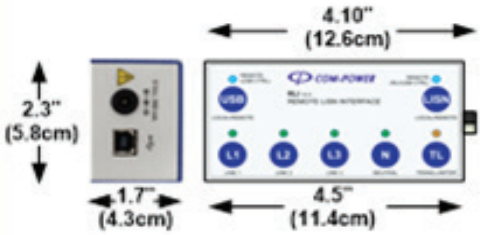
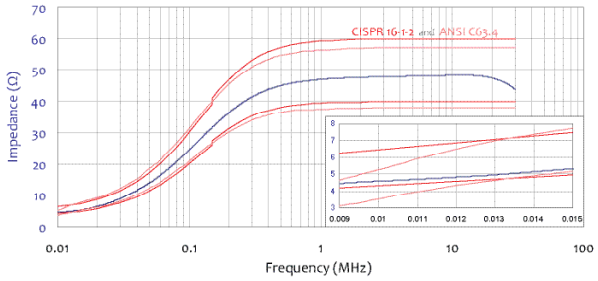


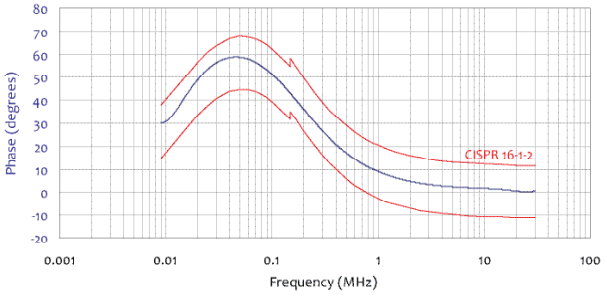
Fig.1(c)
RLI Remote LISN Interface

Product Reference Data

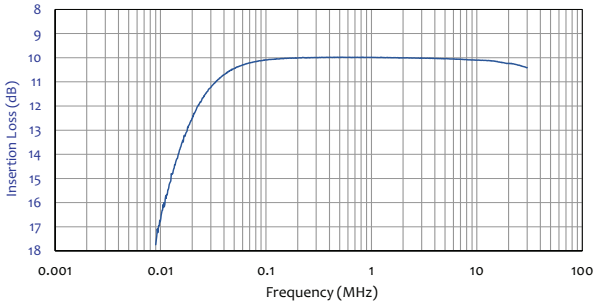
Typical Impedance Data



Typical Phase Data



Typical Insertion Loss



Typical Isolation Data