



LISNS/PLISNS Line Probes

FEATURES

- Five models for FCC, VDE, MIL-STD and TEMPEST Testing
- Frequency Range of 5 kHz to 1 GHz
- Either AC or DC Operation
- One Piece Unit Design
- Units May Be Combined for Multi-Line Requirements
- Custom Amperages Available
- Insulated Plugs for Safer Power Connections
- Individually Characterized for Insertion Loss and Impedance
- Two Year Warranty



EMCO Model 3925/2 PLISN

DESCRIPTION

The EMCO Line Impedance Stabilization Network Systems (LISNS) and Power Line Impedance Network Systems (PLISNS) are used to provide a known impedance from the power line to the equipment under test (EUT) while diverting any RF signals from the power line to a 50 ohm port. The EMCO Line Probe is used in those situations where line current is too great for the use of a LISN.

EMCO LISNS and PLISNS are ruggedly constructed one-piece units. For improved safety, all models use insulated Superior[®] pin plugs for power input connections and BNC connectors for monitor output. Brass studs are provided on front and rear panels for bonding to the ground plane. Models 3925/2 uses N connectors and the 3960/4 uses LC connectors for power output. Both units include AC adapters for the EUT. All other models use Superior pin plugs for power output connections. For improved performance at high frequencies, air core inductors are used on Models 3625/2, 3725/2 and 3960/4. All models are individually characterized for insertion loss and impedance to assure proper performance when connected to an EUT.

The **Model 3625/2** is a two line, single phase, 5 uH LISN for MIL-STD testing. It covers a frequency range of 100 kHz to 65 MHz. Superior pin plugs are provided for power input/output. Type BNC connectors are used for monitor output.

The **Model 3725/2** is a two line, single phase, 50 uH LISN for FCC testing. It covers a frequency range of 450 kHz to 100 MHz. Superior pin plugs are provided for power input/output. Type BNC connectors are used for monitor output.

The **Model 3825/2** is a two line, single phase, 50/250 uH LISN for VDE and FCC testing. It covers a frequency range of 10 kHz to 100 MHz. Superior pin plugs are provided for power input/output. Type BNC connectors are used for monitor output.

The **Model 3925/2** is a two line single phase PLISN for TEMPEST testing. It is divided into a low frequency section of 5 kHz to 20 MHz and a high frequency section of 2 MHz to 1 GHz. The low frequency section is rated at 15 amps with a line voltage drop of 10%. The high frequency section is rated at 20 amps with a maximum drop of 2.5%. Type N female connectors are used for power output to the EUT. An AC adapter is also provided. Type BNC connectors are used for monitor output.

The **Model 3960/4** is a four line PLISN for TEMPEST testing. It has a frequency range of 2 MHz to 1 GHz. The 3960/4 is rated at 60 amps. This model is ideal for three phase Delta or "Y" configurations. Type LC Connectors are used for power output to the EUT. Superior pin plugs are used on an adapter box that is provided. An AC adapter is also provided. Type BNC connectors are used for monitor output.

The **Model 3701** Line Probe is based on the FCC specified design for a line probe measuring conducted emissions in the frequency range of 450 kHz to 30 MHz. Its principal application as per FCC/OST MP-4 and ANSI C63.4-1981 is for those situations where the line current is too great for the use of a LISN.

For operation, the probe is attached to the bare conductor carrying power to the equipment under test. A female BNC coaxial connector is located at the base of the probe for connecting the probe to the test equipment. For multiple phase equipment, the probe can be quickly detached from one line and attached to another. The unit is constructed of brass, delrin and linen phenolic.

EMCO warrants its LISNS and PLISNS to be free from defects in material or workmanship for two years. Annual recalibration is suggested.

APPLICATIONS

TEST TYPE	MODEL NUMBER					
	3625/2	3725/2	3825/2	3925/2	3960/4	3701
FCC 15		CE	CE			CE
VDE 0871, 0875			CE			
SAE J1113		CS				
MIL-STD 461	CE	CE, CS				
TEMPEST				CE	CE	

CE = Conducted Emissions
CS = Conducted Susceptibility

ELECTRICAL SPECIFICATIONS

MODEL NUMBER	ISOLATION FREQUENCY RANGE	POWER SOURCE FREQUENCY	MAX CURRENT	MAX VOLTAGE	NETWORK INDUCTANCE/IMPEDANCE	POWER OUT CONNECTOR
3625/2	100 kHz 65 MHz	DC-400 Hz	25 amps*	400 VAC line to line 220 VAC line to ground	5 uH/50 ohm	Superior pin plug
3725/2	450 kHz 100 MHz	DC-400 Hz	25 amps*	400 VAC line to line 220 VAC line to ground	50 uH/50 ohm	Superior pin plug
3825/2	10 kHz 105 MHz	DC-400 Hz	25 amps*	400 VAC line to line 220 VAC line to ground	50-250 uH/50 ohm	Superior pin plug
3925/2	5 kHz 1 GHz	DC-62 Hz	20 amps	400 VAC line to line 220 VAC line to ground	50 ohm	N female AC adapter
3960/4	2 MHz 1 GHz	DC-400 Hz	60 amps	400 VAC line to line 220 VAC line to ground	50 ohm	LC female AC adapter
3701	450 kHz 30 MHz					

* 30 amps if duty cycle is reduced 20%

PHYSICAL SPECIFICATIONS

MODEL	HEIGHT	WIDTH	DEPTH	WEIGHT
3625/2	16.5 cm 6.5 lb	27.9 cm 11 in	27.9 cm 11 in	5.4 kg 12 lb
3725/2	16.5 cm 6.5 lb	27.9 cm 11 in	27.9 cm 11 in	5.4 kg 12 lb
3825/2	21.2 cm 8.3 in	28.1 cm 11.1 in	38.1 cm 15 in	10.4 kg 23 lb
3925/2	23.5 cm 9.25 in	51.4 cm 20.25 in	47 cm 18.5 in	27.3 kg 60 lbs
3960/4	26.7 cm 10.5 in	41.9 cm 16.5 in	50.8 cm 20 in	19.05 kg 42 lb

STANDARD CONFIGURATION

LISN assembly with six Superior® pin plug connectors, 50 ohm external load (three each on Model 3960/4), AC line cord adapters (Model 3925/2 and 3960/4 only), manual with Certificate of Conformance and actual calibration factors.

OPTIONS

Calibration tool, Model 3925 only.
Shielded input power cord adapter (Model 3925 only).

WARRANTY

Two year parts and labor.

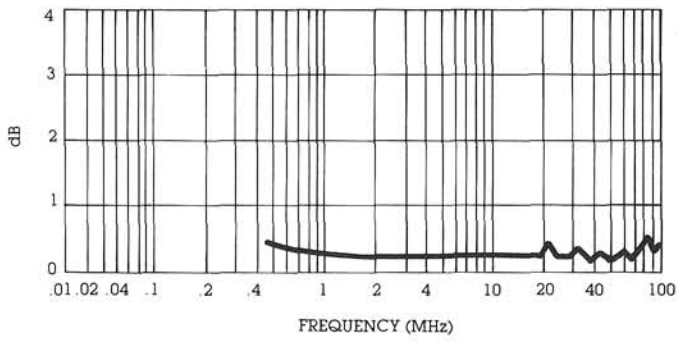
EMCO Model 3825/2 LISN

EMCO Model 3960/4 PLISN

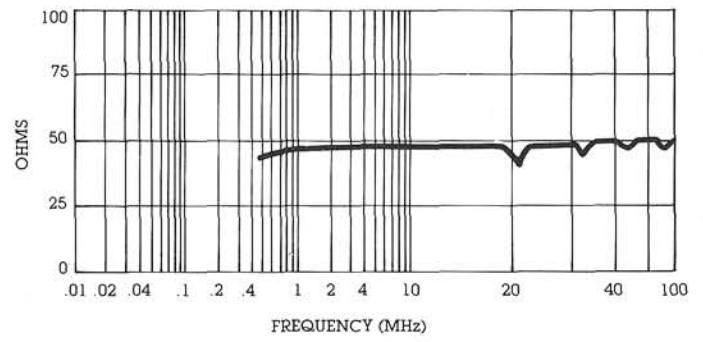
EMCO Model 3701 Line Probe



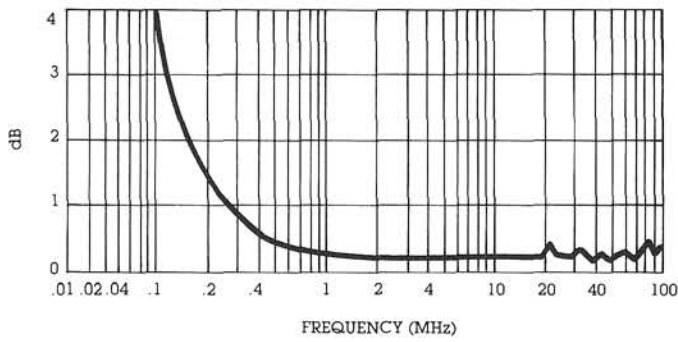
LISNS/PLISNS Line Probes



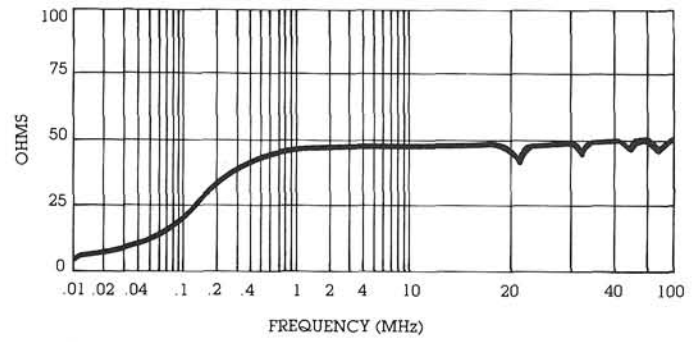
CHARACTERISTIC INSERTION LOSS OF LISN MODEL 3725/2



CHARACTERISTIC IMPEDANCE OF MODEL 3725/2 LISN



CHARACTERISTIC INSERTION LOSS OF LISN MODEL 3825/2



CHARACTERISTIC IMPEDANCE OF MODEL 3825/2 LISN

EMCO 3925/2

Detailed Specifications per ETS Lindgren supplied manual and ETS Lindgren technical support.

Low Frequency Section

At Type N (f) connector:

Frequency Range: 5kHz to 20MHz

Impedance: 50 ohms +/- 20% from 10kHz to 20MHz

Insertion Loss: 3dB max at 5kHz, less than 1dB from 10kHz to 20MHz

At Adapter Box NEMA connector:

Frequency Range: 5kHz to 20MHz

Impedance: 50 ohms nominal, no limits specified

Insertion Loss: No limits specified

High Frequency Section

At Type N (f) connector:

Frequency Range: 2MHz to 1GHz

Impedance: 50 ohms +/- 20%

Insertion Loss: No limits specified

At Adapter Box NEMA connector:

Frequency Range: 2MHz to 1GHz

Impedance: 50 ohms nominal, no limits specified

Insertion Loss: No limits specified