



## Test Site Hardware LISN / PLISN Model 3810/2, 3816/2

### Features:

- 9 kHz to 30 MHz Frequency Range
- 10 A or 16 A Continuous Current Rating
- Earth Line Choke
- Artificial Hand Network
- High Pass Filter
- Choice of Plugs / Receptacles
- Manual or Remote Switched Test Ports



Model 3810/2 LISN



ETS-EMCO'S LISN MODELS 3810/2 & 3816/2 are multi-line low pass filter networks used for conducted emissions measurement. They are placed between the power mains and the EUT (Equipment Under Test) to stabilize line impedance, provide a 50 ohm RF connection, and eliminate unwanted RF signals from the line supply. In addition, LISNs can be used to predict radiated emissions for diagnostic and precompliance testing (see page 2 sidebar).

The Model 3810/2 is designed and tested in accordance with IEC Publication 1010, Safety Requirements for Electronic Measuring Apparatus. It has also received CSA safety certification from the Canadian Standards Association, a further indication of ETS-EMCO's commitment to safety.

Both model LISNs cover the frequency spectra of 9 kHz to 30 MHz and are designed to be used with a signal analyzer for making FCC 15, VDE 0871 & 0875, and EN55022 conformance measurements.

### Features Models 3810/2 and 3816/2

#### Earth Line Choke

An Earth Line Choke is included on the Model 3810/2 and Model 3816/2. The choke isolates the EUT from RF ground while maintaining a safety ground.

#### Artificial Hand

An Artificial Hand circuit which conforms to EN55014 is included in both model LISNs. The circuit is useful for testing hand-held equipment which does not have a connection to protective earth ground.

#### High Pass Filter

A switchable high pass filter is included on the Model 3816/2, preventing potential overload to the analyzer and eliminating the need to apply correction factors to measurements.

#### Choice of Plugs/Receptacles

Both models are available with either NEMA®, SCHUKO®, or British power out connectors.

### Manual and Remote Switched Test Ports

Manual line switching is provided on the Model 3810/2, while both manual and remote switching are included on the Model 3816/2. In the remote switching mode, the selected line (A or B) is terminated in a 50 ohm load when power has not been applied to the mains, permitting measurement of the noise floor.

### Standard Configuration

- LISN assembly
- Individually calibrated per ANSI C63.4. Actual insertion loss and impedance data and a signed Certificate of Calibration included in Manual.

### Options

#### MP4 Cord Loom

Provides a repeatable method for looping excess cord in serpentine fashion, per MP4.

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Model 3816/2 LISN

LISNs and PLISNs, also known as artificial mains, are a valuable tool for EMC engineers. In addition to their usual function, LISNs can be used as a diagnostic aid to evaluate EME designs. A paper entitled, *Using a LISN as an Electronic System EMC Diagnostic Tool*, by David Staggs, describes how LISNs, normally used for conducted measurement, can be used to anticipate and reduce radiated emissions. Mr. Staggs' paper notes that conducted resonances often have correspondence to frequencies in the radiated profile. By identifying and reducing a conducted resonance, a corresponding resonance in the radiated profile is often reduced as well. Contact ETS Sales for a copy of this paper.

## Applications

MODEL	TEST TYPE			
	FCC-15	VDE 0871	VDE 0876	EN55022
3810/2 & 3816/2	CE	CE	CE	CE

## Operational Features

MODEL	MANUAL SWITCHED EARTHLINE CHOKE	ARTIFICIAL HAND	MANUAL SWITCHED HIGH PASS FILTER	MANUAL SWITCHED TEST PORTS	REMOTE SWITCHED TEST PORTS
3810/2	✓	✓		✓	
3816/2	✓	✓	✓	✓	✓

## Physical Specifications

MODEL	WIDTH	DEPTH	HEIGHT	WEIGHT
3810/2 & 3816/2	22.2 cm 8.7 in	38.1 cm 15.0 in	15.2 cm 6.0 in	4.9 kg 10.7 lb

## Electrical Specifications

MODEL	LINES PLUS GROUND	FREQUENCY RANGE	POWER SOURCE FREQUENCY	MAXIMUM CURRENT	MAXIMUM VOLTAGE	NETWORK INDUCTANCE IMPEDANCE	POWER IN CONNECTOR	POWER OUT CONNECTOR
3810/2	NM	2	9kHz - 30 MHz	60 Hz	125 VAC Line to Ground	50µH / 250µH	IEC power inlet with customer specified plug	NEMA®
	SH			50 Hz	250 VAC Line to Ground			SCHUKO®
	BS			50 Hz	250 VAC Line to Ground			British
3816/2	NM	2	9kHz - 30 MHz	60 Hz	125 VAC Line to Ground	50µH / 250µH	Integral cord with NEMA® plug	NEMA®
	SH			50 Hz	250 VAC Line to Ground			SCHUKO®
	BS			50 Hz	250 VAC Line to Ground			British

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