Model 3725/2M

Line Impedance Stabilization Network (LISN)

User Manual
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## Notes, Cautions, and Warnings

<table>
<thead>
<tr>
<th>Icon</th>
<th>Note: Denotes helpful information intended to provide tips for better use of the product.</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Caution" /></td>
<td><strong>Caution:</strong> Denotes a hazard. Failure to follow instructions could result in minor personal injury and/or property damage. Included text gives proper procedures.</td>
</tr>
<tr>
<td><img src="image" alt="Warning" /></td>
<td><strong>Warning:</strong> Denotes a hazard. Failure to follow instructions could result in SEVERE personal injury and/or property damage. Included text gives proper procedures.</td>
</tr>
</tbody>
</table>

See the ETS-Lindgren *Product Information Bulletin* for safety, regulatory, and other product marking information.
1.0 Introduction

The ETS-Lindgren Model 3725/2M Line Impedance Stabilization Network (LISN) is a two-channel low pass filter network designed to isolate the equipment under test from an external power source while steering any radio frequency signals from the power line to a 50-ohm port.

The conducted emissions measurements may be made in accordance with regulatory compliance standards. A 50 µH inductor is used per channel.

ETS-Lindgren Product Information Bulletin

ETS-Lindgren may substitute a similar part or new part number with the same functionality for another part/part number. Contact ETS-Lindgren for questions about part numbers and ordering parts.

See the ETS-Lindgren Product Information Bulletin included with your shipment for the following:

- Warranty information
- Safety, regulatory, and other product marking information
- Steps to receive your shipment
- Steps to return a component for service
- ETS-Lindgren calibration service
- ETS-Lindgren contact information
2.0 Maintenance

Only trained service personnel should perform adjustments and/or service procedures.

Inside the Model 3725/2M are LETHAL voltages with which you could come into contact. Capacitors inside the unit may still be CHARGED even when the unit is disconnected from power.

Before performing any maintenance, follow the safety information in the ETS-Lindgren Product Information Bulletin included with your shipment.

Maintenance of the Model 3725/2M is limited to external components such as cables or connectors.

Clean the exterior of the cabinet using a damp cloth and mild cleaner. Always unplug the unit before cleaning.

To prevent electrical shock, do not remove cover.

If you have any questions concerning maintenance, contact ETS-Lindgren Customer Service.

Service Procedures

For the steps to return a system or system component to ETS-Lindgren for service, see the Product Information Bulletin included with your shipment.
3.0 Specifications

### Electrical Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency Range</td>
<td>10 kHz–100 MHz</td>
</tr>
<tr>
<td>Network Inductance</td>
<td>50 µH</td>
</tr>
<tr>
<td>Network Impedance</td>
<td>Nominal 50 ohms per MIL-STD-461F</td>
</tr>
<tr>
<td>Current Rating</td>
<td>25 Amps</td>
</tr>
<tr>
<td>Maximum AC Voltage</td>
<td>250 VAC line-to-ground</td>
</tr>
<tr>
<td>Input/Output Connector</td>
<td>Dual binding posts</td>
</tr>
</tbody>
</table>

### Environmental

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Installation</td>
<td>Indoor use only</td>
</tr>
<tr>
<td>Altitude</td>
<td>4572 m (15000 ft) max</td>
</tr>
<tr>
<td>Temperature</td>
<td>0°C to 40°C (32°F to 104°F)</td>
</tr>
<tr>
<td>Relative Humidity</td>
<td>80% up to 31°C (87.8°F) decreasing linearly to 50% at 40°C (104°F)</td>
</tr>
</tbody>
</table>

### Physical Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height</td>
<td>124 mm (4.9 in)</td>
</tr>
<tr>
<td>Width</td>
<td>218 mm (8.6 in)</td>
</tr>
<tr>
<td>Depth</td>
<td>381 mm (15.0 in)</td>
</tr>
<tr>
<td>Weight</td>
<td>5.4 kg (12.0 lb)</td>
</tr>
</tbody>
</table>
4.0 Installation and Application

Before connecting any components, follow the safety information in the ETS-Lindgren Product Information Bulletin included with your shipment.

Overcurrent protection is not provided in the Model 3725/2M. The unit must be connected to a power mains which has appropriately rated mains protection installed.

Due to the high leakage current to ground inherent in this type of equipment, it is necessary to ground the Model 3725/2M to an appropriate earthing point of the power mains prior to applying power. This earthing point should be determined by an electrician authorized to do such work by appropriate code or law. Any interruption of the protective conductor inside or outside of the product is likely to make the product dangerous. Intentional interruption is prohibited.

The Model 3725/2M is provided with resistors to help bleed off high voltage transients, but it is advisable to connect the input and output connectors to their proper power lines and loads before connecting the monitor port to the measurement instrumentation; otherwise, power surges or transients can damage the test instrumentation mixers or attenuators.
The Model 3725/2M Line Impedance Stabilization Network (LISN) is nominally designed for a current capacity of 25 amperes. This rating may be increased to 30 amperes provided that the duty cycle is reduced to 20% to allow for heat dissipation. Maximum line-to-line voltage must not exceed the maximum voltage rating of the unit. See Specifications on page 11 for the applicable maximum value.

The Model 3725/2M is designed for use in Installation Category II and Pollution Degree II per IEC-1010 and IEC-664. When installing in a cabinet, make sure that the convection around the product is not restricted. The ambient temperature outside the cabinet must be less than the maximum operating temperature of the Model 3725/2M by 4°C for every 100 watts dissipated in the cabinet. If the total power dissipated in the cabinet is greater than 800 watts, then forced convection must be used.

Front Panel Connectors and Controls

BNC CONNECTOR

Connect the Model 3725/2M to the spectrum analyzer or EMI receiver through the BNC connector.

LINE SELECT SWITCH

Select the line to be monitored by the two-position selector switch. The line not selected is internally terminated into 50 ohms. Switching between the two lines will not generate transients.

Remove the BNC connection before disconnecting power.

RF GROUND

The Model 3725/2M is provided with an RF bonding stud on both the front and back panels. The unit should be bonded to a ground plane in normal operation.

EQUIPMENT UNDER TEST CONNECTION

The Equipment Under Test (EUT) is connected to the Model 3725/2M through the dual binding posts.
Back Panel Connectors

**POWER INPUT**

The input power connection is made through the dual binding post connections.

A properly-rated circuit breaker or switch which removes mains power from the Model 3725/2M should be installed in proximity to the unit.

**RF GROUND**

See the description on page 14.
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5.0 Data

Characterizations for each measurement port of the Model 3725/2M Line Impedance Stabilization Network (LISN) are included with the unit. The graphs provide individual plots of both impedance and insertion loss data. Impedance is plotted in a semi-log format where frequency is displayed on the horizontal from 10 kHz to 100 MHz. The vertical has a range of 0 ohms to 100 ohms and represents the measured impedance of the unit. The insertion loss is also plotted with frequency on the horizontal from 10 kHz to 100 MHz. The vertical of the graph has a range of -9 dB to 1 dB and represents the measured insertion loss of the Model 3725/2M.

A Certificate of Calibration Conformance is provided with each Model 3725/2M.
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Appendix A: Warranty

See the Product Information Bulletin included with your shipment for the complete ETS-Lindgren warranty for your Model 3725/2M.

DURATION OF WARRANTIES FOR MODEL 3725/2M

All product warranties, except the warranty of title, and all remedies for warranty failures are limited to two years.

<table>
<thead>
<tr>
<th>Product Warranted</th>
<th>Duration of Warranty Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 3725/2M Line Impedance Stabilization Network (LISN)</td>
<td>2 Years</td>
</tr>
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</table>