

MODEL 7399-2 SPIKE GENERATOR 2500 VOLTS

for conducted transient susceptibility testing



APPLICATION

The Model 7399-2 Spike Generator is a "Big Bang" unit capable of providing high energy spikes with amplitudes adjustable up to 2500 volts, peak, into low impedance loads, as required by paragraph 4.8.5.4 of **MIL-E-16400G** and described in **MIL-STD-1399** Appendices A, B, C, and D. The shape of the spike approximates Figure 1 of **MIL-STD-1399**, Section 103, as shown.

DESCRIPTION

Modes of operation:

- Repetitive spikes up to 2500 volts peak at two pulses per minute.
- Single non-synchronous spike actuated by a pushbutton on the panel.
- Sync functions provide for placing the spike on the power frequency waveform of 50, 60 or 400 Hz power lines. The spike can be moved to any point on the sine wave from 0° to 360°.

A SYNC TEST function is provided for adjusting the trigger circuit of the associated oscilloscope for response to a single pulse. After this adjust-

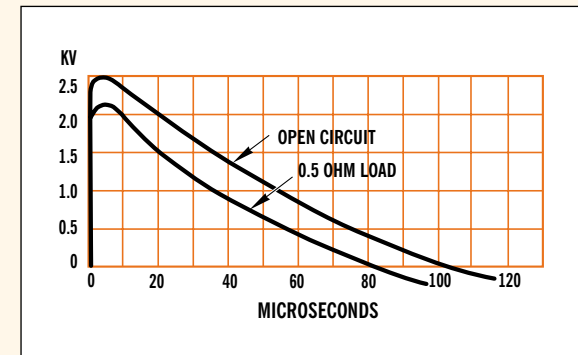
ment of the scope, it is ready for viewing the spike. When the READY lamp indicates the storage circuit has been charged to the selected peak voltage, the pushbutton is depressed which triggers the sync circuit of the oscilloscope.

All connections to the **Model 7399-2** are isolated from the chassis. The chassis is grounded through the third wire in the power cord in accordance with safety regulations.

The **Model 7399-2** is provided with two plug-in assemblies which enable it to be configured for series or parallel injection as described in the appendices of MIL-STD-1399:

- 1) Using the P/N **739945** Plug-in Unit, the equipment is ready for series injection as described in Appendix B of the MIL spec. In this mode, the operation of the **Model 7399-2** is identical to **Model 7399-1**. When using the P/N **739945** Plug-in Unit, heavy duty output jacks provide connections in series with loads up to 100 amperes r.m.s. The mating plugs are well insulated and will handle power line voltages in excess of 500 volts, r.m.s.

- 2) Using the P/N **739950** Plug-in Unit, the equipment can be used for parallel injection of the spike on single or three phase power circuits as described in proposed Appendices A, C, and D of the MIL spec. This method requires the use of external components determined by the characteristics of the item being tested.



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MODEL 7399-2 SPIKE GENERATOR

SPECIFICATIONS

	NO LOAD	0.5 OHM LOAD
Peak Amplitude:	100-2500 V	100-2000 V
Rise Time:	≈1 μS	≈2 μS
Duration to 50% of Peak:	≈50 μS	≈31 μS
Duration to Zero Crossover:	≈100 μS	≈77 μS
Repetition Rate:	2 pulses per minute.	

Phase Adjustment: Spike position adjustable from 0° to 360° on 50, 60 or 400 Hz sine wave.

Internal Impedance: Less than 0.1 ohm.

Peak Output Power: 8 Megawatts into 0.5 ohm load.

Power Current in Series Injection Mode: Handles up to 100 amperes of current at power frequencies.

Power Requirements: 115 volts 60 Hz, 2.0 amperes (230 volts 50 Hz, 1.0 ampere available).

Size: 21.06" wide, 12.56" high, 15.50" deep (53.5 cm x 31.9 cm x 39.4 cm).

Weight: 70 pounds plus 5 pounds for accessories.

Total Shipping Weight: 75 pounds.

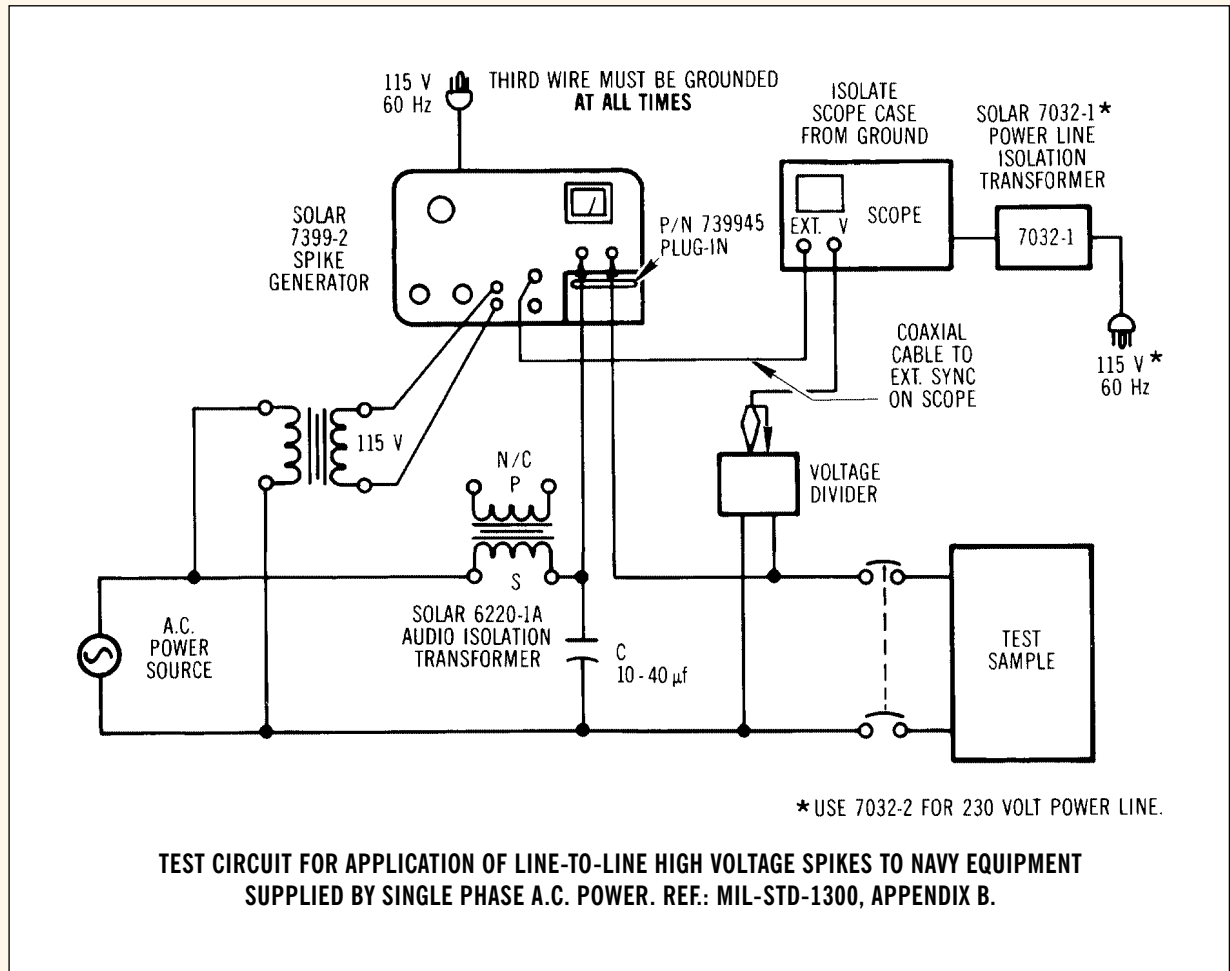
* Spike duration can be changed from ≈20 μS to ≈100 μS using internal jumpers.

ACCESSORIES (Supplied)

P/N 739945 Plug-in Unit for series injection of spike into power lines.

P/N 739950 Plug-in Unit for parallel injection (using external components).

Mating connectors: Two 100 ampere styles, for power connections; two 50 ampere styles, for external resistor.



USEFUL ACCESSORIES (Not Included)

Type 6220-1A Transformer. Can be used as a high current series inductor.

Type 7032-1 Isolation Transformer. For removing power ground from the case of the scope (see diagram above).

