



Model 7399-3 Spike Generator 2500 V for conducted transient susceptibility testing



DESCRIPTION



Effective March 2, 2017

Paragraph 5.3.3.1 Apparatus paragraph c of MIL-STD-1399-300B refers to Solar Spike Generators Models 7399-1 and 7399-2 needing modifications in order to accept an independent 60 Hz sync input.

In response to the changes in MIL-STD-1399-300B, we have incorporated an independent 60 Hz sync input function. This is accomplished through the addition of a selector switch position and associated internal wiring. The discharge switch has also been updated to a solid-state type switch. Due to these changes, we have rolled the part number of the generator from 7399-2 to 7399-3.

APPLICATION

The **Solar Model 7399-3 Spike Generator** is capable of providing high energy spikes with amplitudes adjustable up to 2500 V peak into low impedance loads, as required in MIL-STD-1399, Section 300B. The shape of the spike approximates Figure 6 of MIL-STD-1399-300B. (**Solar Model 7399-3** is specified in MIL-STD-1399-300B.)

Modes of operation:

- Repetitive spikes up to 2500 V peak at two pulse 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 adjustment 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 **Solar Model 7399-3** are isolated from the chassis. The chassis is grounded through the third wire in the power cord in accordance with safety regulations.



SPECIFICATIONS



Peak amplitude: No load 100-2500 V 100-2000 V 0.5 Ω load

Rise time: No load $\approx 1 \mu\text{S}$ 0.5 Ω load $\approx 2 \mu\text{S}$

Duration: No load to 50% of peak 0.5 Ω load $\approx 50 \mu\text{S} \approx 31 \mu\text{S}$

Duration to zero: No load crossover $\approx 100 \mu\text{s}$ 0.5Ω load $\approx 77 \mu\text{s}$

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 0.1Ω

Peak output power: 8 MW into 0.5Ω load

Power current in series injection mode: Handles up to 100 A of current at power frequencies

Power requirements: 115 V 60 Hz, 2.0 A (230 V 50 Hz, 1.0 A available)

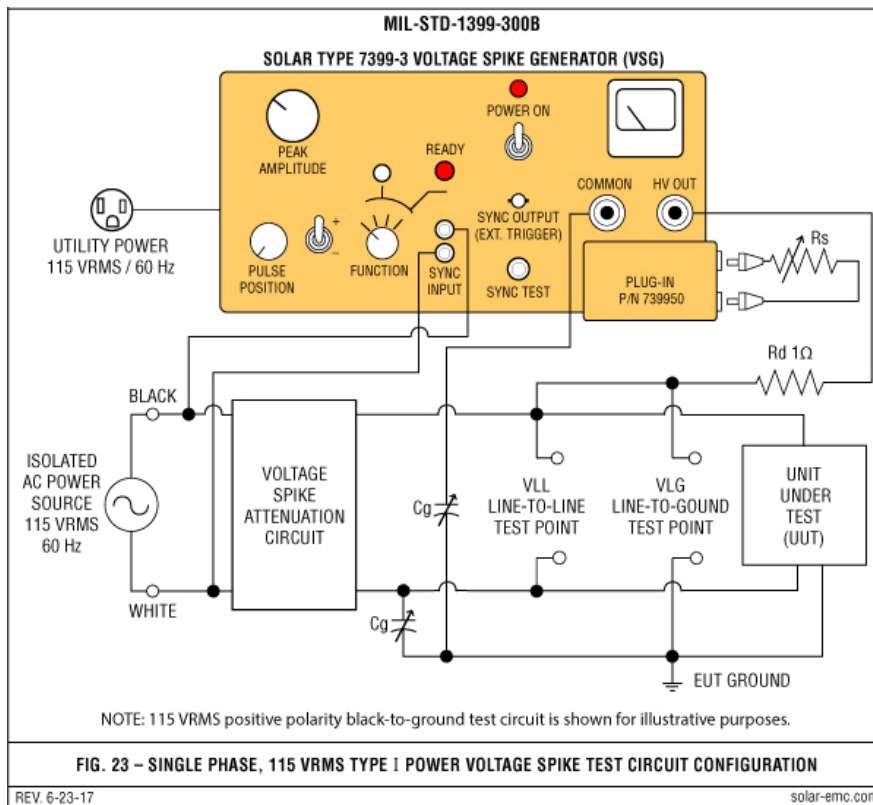
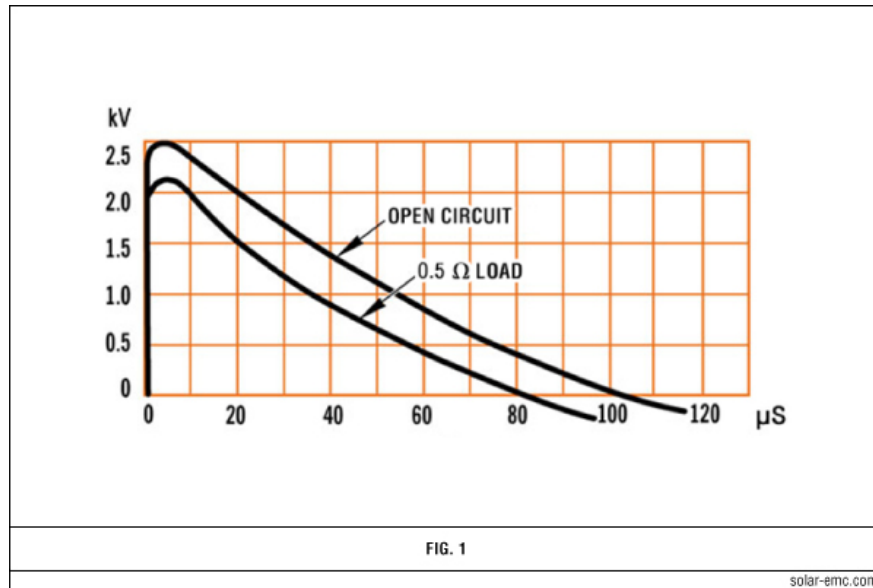
Dimensions: 12.56" wide x 21.06" high x 15.50" deep (31.9 cm x 53.5 cm x 39.4 cm)

Weight: 90 pounds plus 5 pounds for accessories (43.09 kg)

Total shipping weight: 120 pounds (54.4 kg)

FIGURES

TOP



COMPONENTS (supplied)

TOP

Solar Type 739945 Plug-in Unit

For series injection of spike into power lines

Solar Type 739950 Plug-in Unit

For parallel injection (using external components)

Mating connectors

Two 100 A styles, for power connections; two 50 A styles, for external resistor

USEFUL ACCESSORIES (not included)



Type 6220-1B 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 Figure 23, MIL-STD-1399-300B)

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