Model 901A AC Dropout Simulator

Highlights:

- Dropouts begin at any angle or at random with respect to the line voltage waveform
- Crystal clock-stabilized timing accuracy
- 20A continuous rms load current rating
- 115/230 Vac, 47-63 Hz line operation
- Meets UL991, Sec. 8 compliance test

Description

Powertrend's model 901A Precision AC Dropout Simulator was designed especially for single phase power interruption testing and power failure analysis on sensitive ac line-operated equipment. The simulator uses a crystal controlled time base capable of generating dropouts ranging from 100 microseconds up to 99.999 seconds in length. Unlike simulators employing thyristor switching techniques, all dropouts can be set to begin either at zero degrees or at random with respect to the phase angle of the line voltage waveform.

The 901A simulator uses a bridged insulated-gate bipolar transistor (IGBT) for ac current switching. The 901A is rated for 20 amps rms continuous load current with periodic surges of up to 60 amps or greater. It operates from either 115 or 230 Vac, 47-63 Hz using rear panel line voltage selector switches. An ac monitor jack provides a means for viewing fault waveforms across the load under test using an external oscilloscope. A sync pulse is generated at the start of each dropout for triggering the oscilloscope. An internal autotriggering feature permits load cycling in the zero degree trigger mode. Manual triggering is accomplished using the front panel reset and start switches or by means of leads connected to the rear panel remote connector.

Applications

The 901A is a popular tool for compliance test applications. It's especially suited for standardized ac utility power interruption tests, such as those described in Underwriters Laboratories Standards for Safety, UL991 and UL858A. Use it for testing microcomputer systems, process control instrumentation and telecommunications equipment requiring reliable performance even under adverse power line conditions. The 901A simulator also fulfills the dropout susceptability test requirements of UL372, IEC1000-4-11, EN45501 and EN50165.

POWERTREND INC.
Powertrend, Inc. 1218 E. Pershing Blvd., Unit 1001
Cheyenne, WY 82001 Tel: (307) 635-9221 - Fax: (307) 635-8116

Electrical Specifications for Model 901A

AC Line Voltage: 95-130 or 190-260 Vac, 47-63 Hz single phase. Change the voltage range via rear panel line switches that are accessible to the operator.

Load Current: The 901A is rated for loads up to 20 amps rms with 60A surges of 100 ms duration at 10% maximum duty cycle. It will tolerate a non-recurring 200A peak inrush for one half cycle. A minimum load current of 0.25A is recommended.

Dropout Range: Interrupts are adjustable from 1.0 millisecond to 99.999 seconds in 1 ms steps, or from 0.1 ms to 9.9999 seconds in 0.1 ms steps.

Accuracy: The 1 MHz time-base accuracy is ±0.01%. Load interrupts are within ±0.05% of the Duration/MS switch setting ±10µs, measured at the 50% voltage amplitude points, using a resistance load.

Dropout Modes:

Random- Dropouts begin on the first 1 MHz clock edge following the manual start command.
0°- Dropouts begin on the first negative-to-positive line voltage transition following the start command.

Triggering:

Manual- Use the Reset/Start switches or the rear panel remote input connector.
Autotriggering- Use the Rate knob to set the retriggering interval from 0.5 to 60 sec.

Angular Delay: An uncalibrated 10-turn control enables the operator to vary the starting angle of any 0° dropout by adding up to 25 ms of time delay with respect to the line voltage zero-cross.

AC Monitor: View the load waveform on an external monitor scope.

Dimensions: (H x W x D) 4.88 x 12.68 x 10.88 in (124 x 322 x 276 mm).

Weight: 9 lbs (4.1 kg).

Temp: 0-40°C ambient temperature range.

Connectors: Standard units are shipped with NEMA 5-20 electrical devices. A NEMA 5-15 line plug may be substituted at no additional charge. Other connector options are available.

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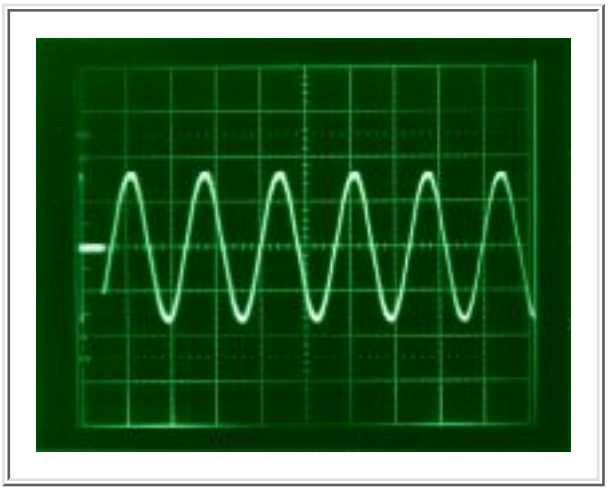
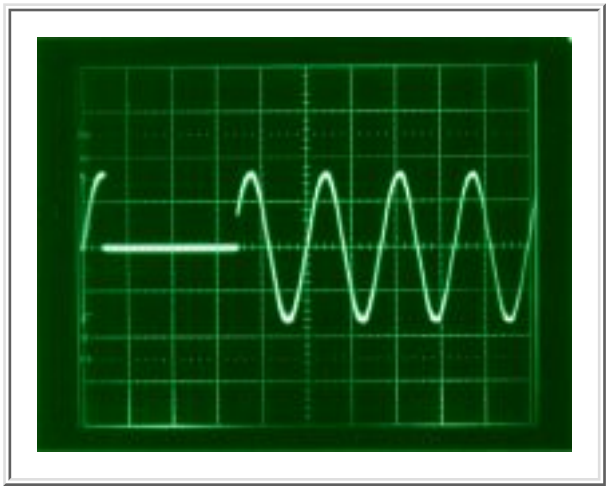
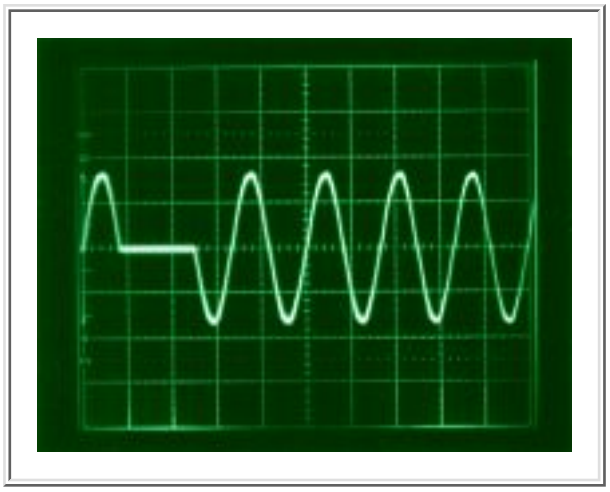
Model 901A Waveforms



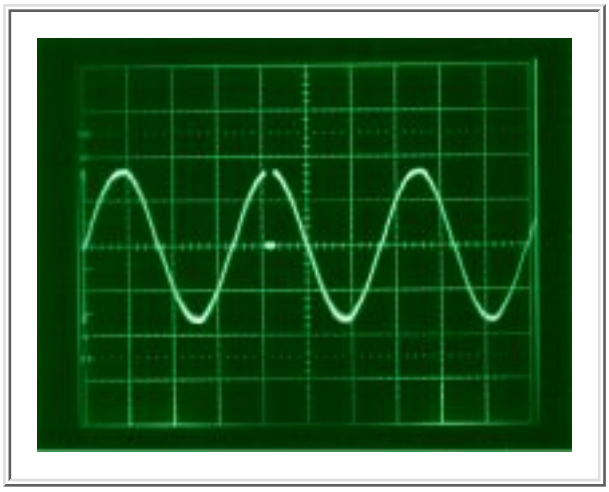
5 ms random power line dropout



90° x 30 ms dropout



180° x 1 cycle dropout



90° x 1 ms dropout

Description | Specifications | Prices | Products

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