

INSTRUCTION MANUAL
FOR
SOLAR TYPE 9554-1M/6M
VARIABLE FREQUENCY MODULE

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INTRODUCTION

The **SOLAR Type 9554- () VARIABLE FREQUENCY MODULES** are designed as accessories for the **SOLAR Model 9354-1 TRANSIENT GENERATOR**. They provide the variable frequency capability required by MIL-STD-462D, Method CS116.

There is a curve showing the maximum output voltage required when measured across 50 ohms of a 100 ohm loop in MIL-STD-462D, Figure CS116-1 (Typical test setup for calibration of test waveform). This is useful in determining the peak voltage necessary to achieve the required peak current. A graph of the maximum current per MIL-STD-462D, Figure CS116-1 is also included to aid in identifying the requirements.

A graph of frequency vs. turns-count for this module is included. This aids in adjusting the frequency. The actual frequency must be determined as described in MIL-STD-462D, Figure CS116-1 (Typical test setup for calibration of test waveform).

DESCRIPTION

Frequency is adjusted with the turns counter on the front panel of the module. Amplitude is adjusted with the amplitude knob on the front panel of the generator (The digital display is useful as a reference but does not indicate the actual amplitude).

A switch is provided on the front panel of the generator for selecting auto or manual triggering of the output. When this is set for manual, the module is discharged by depressing the push button on the front panel of the module. Alternatively, the push button on the front panel of the generator may be used to discharge the outputs of the Module. When auto-trigger is selected, the module will repetitively discharge automatically. The pulse repetition rate is factory preset at one pps and can be adjusted inside the generator from 0.5 pps to one pps as required by MIL-STD-461D, CS116 limit (see 9354-1 manual for adjustment of pulse repetition rate). The frequency range of the module is divided into bands that are selected with the rotary switch on the front of the module.

INSTALLING A MODULE

Using the waveform selector switch on the front panel of generator, set it to the accessory position. The module is connected to the generator by two cables. A high voltage red wire is attached to the back of the module. This has a single pin connector that is plugged into the back panel of the generator. A cable is provided with the modules and is connected from the back panel of the generator to the back panel of the module.

It is important to know that when this cable is connected between the module and the generator, the charge voltage is present at the red plug on the back panel of the generator. For this reason, the amplitude knob must be set to 0%, and the high voltage pin must be installed prior to installing the interconnecting cable.

When removing the module, set the amplitude on the generator to 0% and allow the digital read out to drop below 200. **First, disconnect** the interconnecting cable. This will insure that there is no D.C. present at the high voltage plug when the high voltage pin is disconnected.

USEFUL ACCESSORIES

SOLAR Type 9142-1N BULK CURRENT INJECTION PROBE: The principal use of the BULK CURRENT INJECTION PROBE is to induce pulse waveforms from transient generator into the interconnecting cables of the equipment under test (EUT) with a maximum of efficiency. This coupling device provides a low insertion loss over the frequency range of 2 MHz to 400 MHz.

The **Type 9142-1N BULK CURRENT INJECTION PROBE** features a "clamp on" design which facilitates installation and speeds EMI testing. The conductor or cable under test is passed through the probe aperture (window). It becomes a one-turn secondary winding for signal injection.

SOLAR Type 9125-1 CALIBRATION FIXTURE: This fixture is especially designed for injection probes with a 1.5" diameter window such as the Type 9142-1N. The calibration fixture is used for measuring insertion loss of the coupling device and is essential in some susceptibility test and calibration procedures such as MIL-STD-462D, Figure CS116-1 (Typical test setup for calibration of test waveform).

SOLAR Type 9410-1 HIGH VOLTAGE ATTENUATOR: This attenuator has an insertion loss from D.C. to over 1.0 GHz of 40 dB 1.5 dB, and an average wattage dissipation capability of 2.5 watts. The attenuator will reduce the pulse voltage (e.g., 10 amperes flowing through 50 ohms = 500V max.) to keep within most oscilloscope limitations. See your oscilloscope instruction manual for more details.

The attenuator also works well as a high voltage 50 ohm coaxial load when the input is used and the output is left open.