Additionally, switch position 0.25 will also simulate a 2.5 mil Peak to Peak for 200mV/mil proximity probes.
Note: The switch position numbers reference the Voltage output. For example, position 0.25 would provide a 0.25V output.

Engineering Units @ 318 Hz Standard Sensors											
Switch Position	0.00	0.05	0.10	0.15	0.20	0.25	0.50	1.00	1.50	2.00	2.50
Mils P-P @ 200 mv/mil (Peak Mode)	0.0	0.5	1.0	1.5	2.0	2.5	5.0	10.0	15.0	20.0	25.0
um P-P @ 7.87 mv/um (Peak Mode)	0.0	12.7	25.4	38.1	50.8	63.5	127.0	254.0	381.0	508.0	635.0
g's @ 100 mv/g (Per Mode)	0.0	0.5	1.0	1.5	2.0	2.5	5.0	10.0	15.0	20.0	25.0
in/sec @ 100 mv/g (Per Mode)	0.0	0.1	0.2	0.3	0.4	0.5	1.0	2.0	3.0	4.0	5.0
mm/sec @ 100 mv/g (Per Mode)	0.0	2.5	5.1	7.6	10.2	12.7	25.4	50.8	76.2	101.6	127.0
in/sec @ 100 mv/in/sec (Per Mode)	0.0	0.5	1.0	1.5	2.0	2.5	5.0	10.0	15.0	20.0	25.0
mm/sec @ 4 mv/mm/sec (Per Mode)	0.0	12.7	25.4	38.1	50.8	63.5	127.0	254.0	381.0	508.0	635.0

The Millivolt Chart displays the maximum amplitude that can be achieved for both Peak and RMS settings.

CMCP-TKSG Millivolt Output @ 318 Hz											
Peak Mode Position	0.00	0.05	0.10	0.15	0.20	0.25	0.50	1.00	1.50	2.00	2.50
mV P-P	0.00	100.0	200.0	300.0	400.0	500.0	1,000	2,000	3,000	4,000	5,000
mV Peak	0.00	50.0	100.0	150.0	200.0	250.0	500	1,000	1,500	2,000	2,500
mV RMS	0.00	35.4	70.7	106.1	141.4	176.8	354	707	1,061	1,414	1,768
RMS Mode Position	0.00	0.05	0.10	0.15	0.20	0.25	0.50	1.00	1.50	2.00	2.50
mV P-P	0.00	141.4	282.8	424.2	565.6	707.0	1,414	2,828	4,242	5,656	7,070
mV Peak	0.00	70.7	141.4	212.1	282.8	353.5	707	1,414	2,121	2,828	3,535
mV RMS	0.00	50.0	100.0	150.0	200.0	250.0	500	1,000	1,500	2,000	2,500

Signal Adjustments

The CMCP-TKSG features two front panel accessible screws which adjust the symmetry and amplitude of the output signal. The screw marked “A” adjusted the amplitude and the “F” screw adjusted the symmetry of the frequency. Before adjusting, allow the unit to warm up for at least 5 minutes. The CMCP-TKSG is factory calibrated at the time of shipment and adjustments should not be necessary.

Calibration

The CMCP-TKSG should be calibrated annually to ensure accuracy. Calibration can be checked in the field by using a calibrated digital multimeter. Both Frequency (F) and Amplitude (A) trim pots are accessible from the front bezel and can be adjusted using a small screwdriver. To calibrate, set the VAC switch to the 2.5V setting and adjust the Frequency (F) to 318 Hz and Amplitude (A) to 2.500VAC in RMS mode or 1.768 in Peak Mode.

Technical Performance:

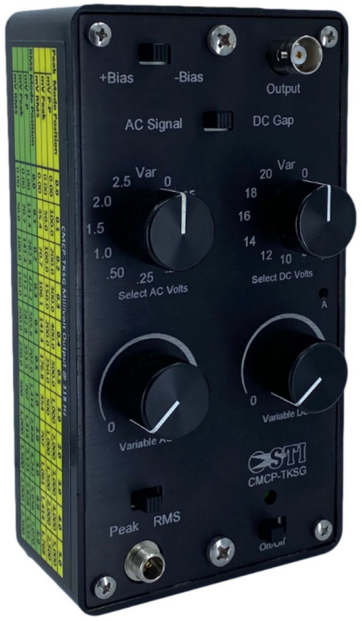
AC Voltage Presets:	0.05, 0.10, 0.15, 0.20, 0.25, 0.50, 1.0, 1.5, 2.0 & 2.5
AC Variable Range:	0.0 to 2.50 VAC
Frequency:	318 Hz ±0.5% Fixed
Units:	RMS or Peak (Selectable)
Bias/Gap Voltage:	+10VDC or -10VDC (Selectable)
DC Voltage Presets:	0.0, 2.0, 4.0, 6.0, 8.0, 10.0, 12.0, 14.0, 16.0, 18.0 & 20.0
DC Variable Range:	0.0 to 20.0 VDC
RMS Accuracy:	2% @ 22°C After 5 Minute Warmup
Peak-Peak Accuracy:	3% @ 22°C After 5 Minute Warmup
DC Output Accuracy	1% @ 22°C
Battery Life:	>80 Hours @ 35 mA

STI Vibration Monitoring Inc.

CMCP-TKSG
Portable Field Signal Generator

User’s Guide

Release: January 2021



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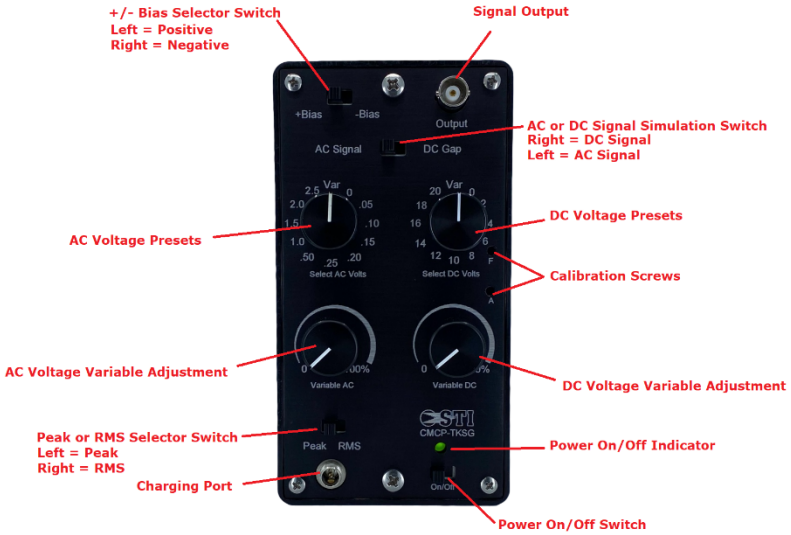
Ver. 1.0
Jan. 28, 2021

Introduction

The CMCP-TKSG Field Signal Generator simulates a fixed frequency acceleration, velocity, or displacement signal as well as DC voltages. The amplitude can be adjusted in 10 pre-defined increments or manually adjusted using the variable output setting. A positive or negative bias/gap voltage can be applied to satisfy OK circuits. The internal rechargeable lithium-ion battery pack provides over 80 hours of runtime. The fixed 318Hz frequency is the crossover point for acceleration, velocity, and displacement measurements.

Layout



What's Included

1x Signal Generator
1x Carrying Case with Magnetic Strap
1x Battery Charger
1x BNC to Test Lead Cable
1x BNC "T" Adapter

Overview

+/- Bias Selector Switch

The +/-Bias selector switch allows the user to set the polarity of the signal. In general, proximity probes will be set to -Bias and Accelerometers and Velocity sensors to +Bias.

AC Signal/DC Gap Switch

This switch sets the output signal to either AC or DC voltage. AC voltages are used to simulate vibration signals and DC voltages are used for bias, gap or position signals.

Peak/RMS Switch

The Peak/RMS switch changes the units of the output signal.

AC and DC Voltage Preset Switches

The Preset switches provide 10 different voltage outputs for both the AC and DC signals.

Variable Adjustment Knob

The variable adjustment knob allows for direct control of the signal output. When in AC mode, the output can be varied between 0 to 2.5VAC. The DC signal can be varied between 0 to 2.5VDC. To use the variable adjustment, make sure the selector switch is in the "Var" position for Variable Output.

Charging Port

The internal lithium-ion battery pack will provide over 80 hours of runtime. To charge the battery, plug the wall charger into the charging port. The battery may take up to 8 hours to obtain a full charge. Charge status is indicated by red/green indicators on the wall charger.

Usage

End to End System Verification:

Disconnect Accelerometer or Velocity Sensor and connect CMCP-TKSG to end of the sensor extension cable using the appropriate adapter. Select sensor proper ±bias. Set the CMCP-TKSG to a signal level within range of the monitoring system. You can now verify correct channel and amplitude at the monitoring system. With Proximity Probe Systems the CMCP-TKSG needs to be connected at the Proximitor field wiring with the Proximitor disconnected.

OK Circuit Verification:

Using the DC Output of the CMCP-TKSG various ±bias voltages may be introduced to verify upper and lower range of the systems OK Circuit. AC Output is fixed with a 10.0 VDC Bias so the DC section of the CMCP-TKSG must be used. Usually, negative voltages for proximity systems and positive voltages for Accelerometers and Velocity Sensors.

Alarm Setpoint Verification:

The CMCP-TKSG can be used to verify alarm settings by increasing the signal output beyond the systems alarm setpoints. Relays if used can also be checked for activation. Keep in mind that most monitoring systems have a several second delay time for the alarms to activate.

Full Scale Range Verification:

Full Scale Range Verification can be accomplished by inputting a known calibrated signal at close to the full-scale monitoring systems setup. Mistakes in the monitoring systems range settings or Field IO ADC calculations are easily seen and corrected.

Thrust Position Setup: (Proximity Probes)

Due to the difficulty in barring shafts through there thrust range the CMCP-TKSG DC Output can be used to simulate the DC Voltage that Proximity Systems provide for Thrust Position. Disconnect common and signal wires from the Proximitor usually in a local junction box and connect the CMCP-TKSG to the wires to the monitoring system. Using the DC section DC signals from 0 to 20.0 Volts can be sent to the monitoring system. A fully adjustable variable output is also available.

Reference Charts

The two charts on the side of the CMCP-TKSG allow the user to quickly select the switch position for a variety of standard sensors. To use the engineering unit chart, simply find the type of signal being simulated and correspond the switch position to the amplitude. For example, in switch position 2 the CMCP-TKSG would simulate a 0.5 in/s at 100mV/g.

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