Condition Monitoring Custom Products

CMCP-TKSG-M Mini Field Signal Generator

Signal Simulation for Systems with Accelerometer or Velocity Sensors

Features

- Calibrated Acceleration and Velocity Outputs
- BNC Female Output Connector
- 8 Selectable RMS Outputs plus Variable Output
- 318 Hz Fixed Signal Frequency
- Designed for Standard Accelerometers with +24 VDC Powered Systems
- +10 VDC Bias to replicate common sensors and to enable OK circuits
- Lithium-Ion Battery Powered with Smart Charger for more than 18+ Hours of Runtime

Typical Applications

Verification of Calibration, End to End Wiring Testing, Vibration Signal Simulation
Verification of OK Circuits, Alarms and Relays
Note: To verify Proximity Systems, please refer to the CMCP-TKSG Field Signal Generator

Product Overview

The CMCP-TKSG-M Mini Field Signal Generator is an ideal tool for engineers and technicians who perform installation, maintenance, troubleshooting, and verification of calibration on vibration monitoring systems. The battery powered CMCP-TKSG-M simulates a fixed frequency acceleration or velocity signal with a bias of +10 VDC.

The amplitude of the signal can be adjusted in 8 pre-defined increments or manually adjusted using the variable output setting. The CMCP-TKSG-M produces a 10 VDC bias voltage to satisfy OK circuits and offers over 18 hours of runtime on its internal rechargeable lithium-ion battery pack.

Technical Performance

AC Voltage Presets:	0.05, 0.10, 0.15, 0.20, 0.25, 0.50, 0.75 and 1.00 VAC RMS or 0.14, 0.28, 0.42, 0.57, 0.71, 1.41, 2.12 and 2.83 VAC Peak to Peak
AC Variable Range:	0.0 to 1.00 VAC RMS (0 to 2.828 VAC Peak to Peak)
Frequency:	318 Hz ±0.5% Fixed
Calibrated Units:	RMS
Bias Voltage:	+10 VDC
RMS Accuracy:	2% @ 22 °C After 5 Minute Warmup
Battery:	Lithium Ion 14.8VDC, 700mAh
Battery Life:	>18 Hours @ 30 mA
Dimensions:	4.62”x3.11”x1.3” (118x79x33 mm)
Weight:	6.3 oz (178.6 g)

Ordering Information
CMCP-TKSG-M Mini Field Signal Generator Kit
Includes:

(1) Signal Generator
(1) Charger
(1) 6’ BNC to BNC Cable
(1) 6’ BNC to Test Lead Cable
(1) BNC-‘T’ Adapter
(1) Protective Case.

CMCP-TKSG-M Top View

CMCP-TKSG-M Kit

Back Label:

CMCP-TKSG Millivolt Output @ 318 Hz									
DIP Switch	D1-On	D2-On	D3-On	D4-On	D5-On	D6-On	D7-On	All-Off	D8-On
mV RMS	50.0	100.0	150.0	200.0	250.0	500	750	1,000	Variable
mV Peak	70.7	141.4	212.1	282.8	353.5	707	1,060	1,414	
mV P-P	141.4	282.8	424.2	565.6	707.0	1,414	2,121	2,828	
100 mv/g RMS Accelerometer									
g's	0.5	1.0	1.5	2.0	2.5	5.0	7.5	10.0	
in/sec	0.1	0.2	0.3	0.4	0.5	1.0	1.5	2.0	
mm/sec	2.5	5.1	7.6	10.2	12.7	25.4	38.1	50.8	
100 mv/in/sec (4 mv/mm/sec) RMS Velocity Sensor									
in/sec	0.5	1.0	1.5	2.0	2.5	5.0	7.5	10.0	
mm/sec	12.7	25.4	38.1	50.8	63.5	127.0	190.5	254.0	

The above chart details the outputs which have been optimized for standard sensor calibrations of 100 mV/g and 100 mV/in/sec (3.94 mV/mm/s).

Verification of Calibration of Condition Monitoring Systems
Condition monitoring systems should have all their various input types periodically calibrated and verified to maintain proper process control and safe operation of the equipment.

Testing Alarm Conditions
An essential function of Condition Monitoring systems is often to trigger an alarm or trip a safety switch when unwanted or dangerous conditions are detected. These alarms must be routinely checked for proper operation.

Sensor Simulation and Verification
All the conditions that a system is expected to operate under can often not be created on demand and instead must be simulated. The simulation is not only necessary to test for the proper connection of wiring and electronics, but also to test the overall system end to end functionality.