ENDEVCO
AN AMPHENOL COMPANY

Sensor simulator

Model 4840

Key features

- Battery operated, portable sensor simulator
- Simulates the electrical output signals generated by common measurement transducers, including:
  - IEPE
  - Charge mode (PE)
  - Differential Bridge
- Simplifies troubleshooting, verification, and calibration processes for test systems
- Ability to create, store, and recall up to 40 pre-set simulation profiles
- Configurable units of measure: g, PSI, Bar, dB, dBA, kPa

Description

The 4840 sensor simulator is a hand held, battery operated signal generator designed specifically to simulate the electrical output of common types of sensors. The instrument contains a highly accurate oscillator with an adjustable output level and is ideal for setting up, testing and the diagnosis of faults within data acquisition systems, FFT analyzers, environmental test systems or simply as a flexible signal generator.

The instrument provides AC output signals which mimic those of either:

- IEPE sensors
- Charge mode sensors (both single ended and differential configurations)
- Differential bridge sensors.

The simulation outputs are conveniently scaled in units of measure that can be configured by the user (g, PSI, Bar, dB, dBA, kPa), as mV(millivolt)/UOM or pC(pico-coulomb)/UOM signals as appropriate. When units of measure are selected as “g”, an auto-calculating on screen “Vibration Calculator” provides the user with corresponding values in respect of m/s^2, ips, mils, mm and m/s based units.

Simulation parameters can be selected, adjusted, and saved as a “profile” either by the front panel keypad or using the supplied utility program. Use of the utility program not only allows profiles to be created and saved but also organized into specific “profile sets” which can be conveniently stored on a PC. Up to 40 user profiles may be downloaded to the simulator at any one time.

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Specifications

Input/Output Characteristics	
Outputs	Single-ended charge (pC) Differential charge (pC) Voltage (mV)/IEPE current sinking (mV) Differential Bridge S+ and S- (mV)
Frequency Range	1Hz to 20kHz, resolution 0.5Hz
Amplitude	Adjustable up to 10,000 pC or mV pk Acceleration and Velocity are in pk units. Displacement is in pk-pk.
Transfer Characteristics	
Amplitude accuracy	All outputs, @ ref freq of 100Hz
<2mV or 2 pC	>10%
2mV or 2pC – 10mV or 10pC	≤5%
10mV or 10pC – 10KmV or 10Kpc	≤1%
Voltage output	±1%
IEPE output	±1%
Frequency Response	1Hz to 10kHz: +/-1.0% (referred to 100Hz) 10kHz to 20kHz: +/-2% (referred to 100Hz)
Harmonic Distortion	< 1.0%, 20Hz to 20KHz, 100-10K mV or pC pK
Amplitude Stability	0.0004% /°C (0 to +60°C) 0.0002% /°F (+32 to +140°F)
Frequency Stability	< 4 ppm/°C < 2 ppm/°F
Environmental Characteristics	
Operating Temperature (discharging) Operating Temperature (charging)	-10 to +65°C (+14 to +140°F) -10 to +45°C (+14 to +113°F)
Power	
Battery Charger type	Rechargeable, high capacity Lithium Ion battery pack 12 VDC (1.5A minimum)
Physical Characteristics	
Case	Molded plastic
Connections (Outputs)	Single-ended Charge: Standard BNC IEPE/Voltage: Standard BNC Differential Bridge: 5 pin Binder connector Differential Charge: Differential BNC (Twinax)
Connections (Inputs)	USB Mini (PC Interface)
Overall dimensions	8.6 in L x 4 in W x 1.6 in H (225mm L x 102mm W x 41mm H)
Weight	Approximately 15.9 ounces (450 grams), excludes interface cables / connectors / charger
Battery status indicator	Green LED, base of unit
Calibration	Performed via front panel key pad Access to Calibration manager mode is password protected

Additional Features

- Plug and play operation when utilizing "Simulation profiles" stored in memory - no additional programming necessary
- Firmware download upgrade utility
- Battery charge status indicators
- Calibration adjustments through the front panel keypad. Access to the calibration manager mode is password protected
- Backlit LCD display
- Ability to configure the device from a PC or the unit's front panel keypad
- USB Interface

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Accessories		
Product	**Description**	
76124	Calibration Certificate	Included
EDVEHM2108	Carrying Case	Included
EDVEHM2107	12 V universal power supply with charger and plug adaptors (UK/US/EU/AU)	Included
EDVEW1400	USB Interface cable	Included
EDVEP695	10/32 to BNC adaptor	Included
EDVEP316	Mating Twinax BNC Connector	Included
EDVEJ1224	Mating Binder connector	Included
76125	4840 Instruction Manual	Download from Website
EV 066	Application software for 4840	Download from Website
43664-XXX	Differential Cable Assembly Adaptor (2 Pin 7/16-27 UNS-2A to Twinax BNC)	Optional
43655-XX	Triaxial Cable Assembly Adaptor (4 Pin receptacle to 3xBNC)	Optional

Front Panel Keypad

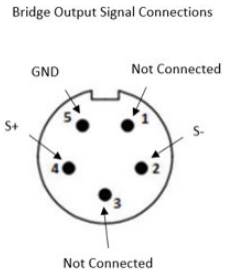
- A HOME
- B PROFILES
- C TOOLS
- D ENTER
- E Arrows: up, down, left, right

Connections

- F mV/IEPE out (BNC)
- G Single-ended charge out (BNC)
- H Bridge out (5 pin Binder)
- I Differential charge out (twinax BNC)
- J mV/IEPE selection indicator

Base Panel

- K Mini USB
- L 2.5mm charger input socket
- M Fast/full charge indicator
- N On/off Switch



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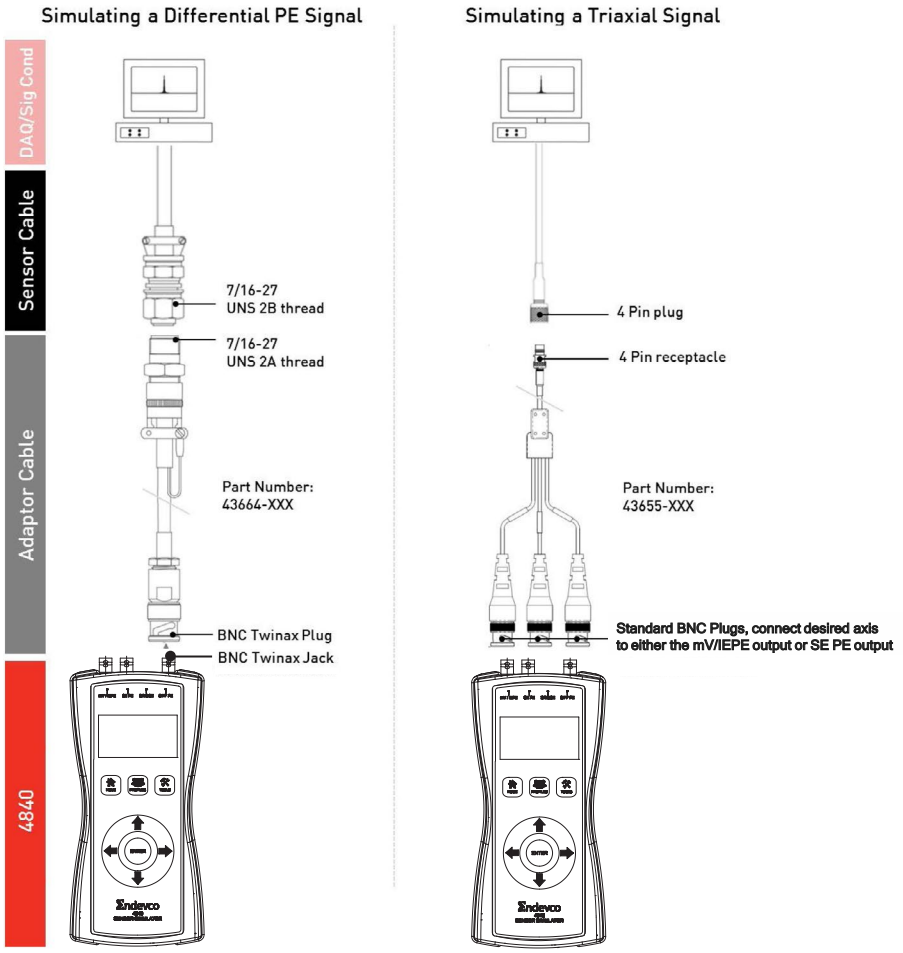
The 43664-XXX (XXX defines the cable length in inches) differential cable assembly adaptor is an optional accessory that can be used to connect the 4840 Twinax BNC connector (DIFF PE output) to a differential sensor cable assembly. It features a Twinax BNC plug and a 7/16-27 UNS 2A threaded connector.

The 43655-XXX (XXX defines the cable length in inches) triaxial cable assembly adaptor is an optional accessory that can be used to connect the any of the 4840 single ended outputs (SE voltage, IEPE, SE charge) to a four pin triaxial sensor cable. One axis can be simulated at a time by connecting one of the 43655-XXX BNC connectors at a time to the appropriate BNC output on the 4840. It features a 4 pin receptacle on ones side and 3x standard BNC plugs on the other.



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