



HS-661 Accelerometer Simulator Operating Notes

1. Description. The HS-661 Accelerometer Simulator is a battery powered, hand-held unit designed to enable installation engineers to test vibration monitoring systems that employ 100mV/g constant current type accelerometers. The unit provides two switched levels of simulated vibration velocity signals, 5mm/s and 20mm/s, allowing verification of vibration monitor and alarm circuits. The switched vibration levels, and accelerometer power from the monitoring system, are indicated by LEDs. The unit can be connected to the monitoring system using the BNC connector, or the clip-on probes provided. The battery compartment, containing a single 9V battery, is accessible on removing the rubber protective cover.

2. Operation. The HS-661 should be connected to the system accelerometer terminals with the accelerometer disconnected. The BNC centre contact or the red probe should be connected to the power/signal terminal and the BNC outer, or black probe, connected to 0V.

When HS-661 is connected, and with the switch in the centre position no simulated vibration signal is produced. When the accelerometer power is on, constant current supply is indicated by the Green LED and a bias voltage of +5VDC, with no AC signal, is produced. This bias voltage is dependent on the current supply as follows:- $V_{bias} = (3.5 + 500I)$ Volts, where I the constant current in mA.

On switching to the 5mm/s level, the output DC bias voltage rises to +12VDC with a 50mVrms at 156Hz AC signal superimposed, and the yellow LED illuminates.

The 20mm/s switch position produces a +12VDC bias voltage with a 200mV rms signal at 156Hz superimposed, and the red LED illuminates.

Note that for testing acceleration (g) measuring systems the 5mm/s velocity signal corresponds to a 0.5g rms acceleration signal and 20mm/s velocity to 2g rms acceleration signal. Note also that if 50mV/g accelerometers are used then the signals produced correspond to 10mm/s or 1g rms and 40mm/s or 4 g rms.

The battery current is approximately 5mA in normal operation which will allow many hours of continuous operation, however to preserve battery life, the unit should be switched off when not in use.

The HS-661 can be calibrated, if required via two potentiometers, for amplitude and frequency adjustment, located on the internal circuit board and accessible on removal of the four case fixing screws.