

A DIGITAL SOUND LEVEL METER IN THE INFRA-SYSTEM

INFRA S50 Sound Level Meter IEC-Class 1

The INFRA system is used to monitor construction activities, blasting, train traffic, road traffic, vibration in buildings etc.

INFRA S50 Digital Sound Level Meter contains both a high quality microphone and a complete array of electronics with digital signal processing. The sound level meter can be connected directly to the bus cable system in an INFRA system.

All filtering and signal processing is performed digitally in the S50. Before the recording is started you only select the wanted standard that is presented in the Remote part of INFRA Net or in the display of the data logger.

The sound level meter measures the equivalent, sound pressure level Leq. In addition, it measures the instantaneous, maximum and peak sound levels at the same time. The interval time can be set in intervals from 1 second to 60 minutes.

It is possible to set trig level to start a short sound record and also to send a Leq alarm. The data can be analyzed in INFRA Net and it is also possible to listen to the recorded data to determine the cause of high levels. Several S50 Sound level meters can be connected at the same time to an INFRA Master/Mini. There can also be a combination of monitoring equipment connected to the system, for instance V12 triaxial geophones and Weather Station.



The INFRA S50 Sound level meter measures the following cases:

dBA, Fast, Random Incidence

- Lmax & Leq 20-95 dBA
- Lmax & Leq 30-105 dBA
- Lmax & Leq: 40-115 dBA
- Lmax & Leq: 55-130 dBA

dBA, Slow, Random Incidence

- Lmax & Leq 20-95 dBA
- Lmax & Leq 30-105 dBA
- Lmax & Leq: 40-115 dBA
- Lmax & Leq: 55-130 dBA

dBA, Peak, Random Incidence

- Lmax & Leq: 55-130 dBA

dB(C), Fast, Random Incidence

- Lmax & Leq 25-95 dB(C)
- Lmax & Leq 30-105 dB(C)
- Lmax & Leq: 40-115 dB(C)
- Lmax & Leq: 55-130 dB(C)

dB(C), Slow, Random Incidence

- Lmax & Leq 25-95 dB(C)
- Lmax & Leq 30-105 dB(C)
- Lmax & Leq: 40-115 dB(C)
- Lmax & Leq: 55-130 dB(C)

dB(C), Peak, Random Incidence

- Lmax & Leq: 55-130 dB(C)

Technical Data

MEASURE CASES

Lmax & Leq 20-95 dBA Fast, Random Incidence
Lmax & Leq 30-105 dBA Fast, Random Incidence
Lmax & Leq 40-115 dBA Fast, Random Incidence
Lmax & Leq 55-130 dBA Fast, Random Incidence

Lmax & Leq 25-95 dBC Fast, Random Incidence
Lmax & Leq 30-105 dBC Fast, Random Incidence
Lmax & Leq 40-115 dBC Fast, Random Incidence
Lmax & Leq 55-130 dBC Fast, Random Incidence

The same 8 cases above in Slow mode.

Lmax & Leq 55-130 dBA Peak, Random Incidence
Lmax & Leq 55-130 dBC Peak, Random Incidence

The sound level meters setup is saved in an EEPROM which means that the setup is saved even though the meter is not connected. There is no need for batteries.

RECORDING OF SOUNDS

At selected trig or threshold levels a short sequence is recorded so that you can analyze the sound source. The signal bandwidth recorded is 1 kHz which in the most cases is sufficient to determine the source of the sound. It is also possible to set a threshold for sending a Leq alarm.

MEASURE INTERVAL

Settings from seconds to 20 minutes with the following allowed intervals 1, 5, 6, 15, 20 and 30 seconds, 2, 4, 5, 6, 10, 15, 20, 30 and 60 minutes.

Please note that the set interval is individual for each sound level meter in a system. Sound level metering can be done with for example 5 minutes interval at the same time as a vibration metering can be done with 1 minutes interval. All intervals are synchronized so that every full hour a joint measuring is done.

DIGITAL SIGNAL PROCESSING

The microphone signal is amplified and anti aliasing filtered. All the detection and equivalent level calculations are done digitally.

REGISTRATION TIME

The time that can be set for registrations is adjustable up to 10 seconds with a pretrig of 1 second.

POWER CONSUMPTION

The Microphone is powered via the bus cable with 12 Volts DC. Power in monitoring and recording mode 100 mW and higher during communication over the bus.

IDENTITY

The sound level meter has a unique ID number that follows the recorded data. This makes it possible to trace data to a certain sensor.

CALIBRATION

The sound level meter is the only part of the system that has to be calibrated. The calibration date is automatically stored in the meter and the data is always transmitted to the INFRA Master/Mini.

TRIGG-SYNCRONISATION

All sensors are simultaneously triggered when one of the sensors are triggered. The system operates as if it where a multichannel system.

MECHANICAL

Watertight anodized aluminium house with rubber seals. It has holes for bolts passing through in two horizontal directions. Can very easily be bolted to a wall or mounted to a tripod.

Dimension: 80 x 300 x 50 mm (3.1 x 11.8 x 2.0 in)

Material: Anodized aluminium.

Protection class IP67

Weight: 750 gram (1.7 lb)

CE APPROVAL

Fulfills EMC demands according to:

EN 301 489-1 V1.8.1 (2008)

EN 301 489-7 V1.3.1 (2005)

EN 61326-1 (2006)