

COMPLETE WIRELESS VIBRATION MONITOR FOR THE INFRA SYSTEM

# INFRA C12 Wireless Triaxial Vibration Monitor

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

- Built in GSM/GPRS modem
- 3–4 weeks of continuous running time on the internal batteries
- Simultaneous bargraph, waveform registration and live data
- All in one compact unit
- Watertight (IP67)
- Full remote control



INFRA C12 is a Triaxial geophone and a data logger built into the same compact unit.

All filtering, signal processing and detection is done digitally. Before the recording is started you only select the wanted standard that is presented in the Remote part of INFRA Net.

The INFRA C12 works with INFRA Net the same way as the other INFRA sensors and data loggers.

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## INFRA C12 measures according to the following national and international standards:

**ISEE Seismograph**, 2 –250 Hz

**ISEE/USBM**, 2-250 Hz [mm/s]

**DIN 4150-3 Anlage**, 1-315 Hz

**DIN 4150-2 KB**, 1-80 Hz

**BS 7385**, 1-300 Hz

**AS 2187-2 2006**, 2-250 Hz

**ÖNORM S 9012**, 1-80 Hz

**ISO 8569 Acceleration**, 5-300 Hz

**IN1226**, 1 – 150 Hz

**NS 8176 Komfort**, 1-80 Hz

**NS 8141 Byggverk**, 5-300 Hz

**NS 8141-1:2012 + A1:2013**, 3-400 Hz

**SS 4604866 Spräng**, 5-300 Hz

**SS 025211 Schakt**, 2-150 Hz

**SS 4604861 Komfort**, 1-80 Hz

**Geophone**, 5-500 Hz

**ICPE-Cirkulaire 86**, 1-150 Hz

**Turkey - Mining and Quarry**, 2-250 Hz

# Technical Data

## DIRECTION OF SENSITIVITY

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C12 is triaxial and measures vibration in three directions.

## MEASURING

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The unit has a built in digital signal processor. The signal processor processes all incoming data in real time according to the selected standard. The unit works in combinational mode. It measures maximum values for each interval (selectable from 5 sec. to 20 min) according to the selected standard and at the same time it triggers and record time histories when the trigger level is exceeded.

DIN 4150-3, ISEE, BS 7385, AS 2187-2 and ISEE/USBM also measures the frequency of the peak value in each interval.

## SAMPLING

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The geophone signal is sampled at 4096 Hz using a high resolution A/D converter which gives a wide dynamic range. When a preset threshold is exceeded a time history is recorded. Even some time before the trigger time is stored (pre-trig).

## RECORDING TIME

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Recording time up to 40 seconds at 4 kHz sampling.

## POWER SUPPLY

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Internal lithium-Ion batteries that easily can be changed through a separate battery cover. It is possible to connect an external battery eliminator and connect to an external power source e.g. solar panel, 12VDC Lead Acid battery. In sunny conditions the built in solar panel charges the internal batteries.

## MEASURING RANGE

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Frequency range 1 Hz - 500 Hz The Geophone has a calibrated sensitivity within +- 2%. Maximum vibration level is 250 mm/s dependent on the selected standard.

## SENSOR ELEMENT

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The sensor element is a high quality velocity sensing geophone. It is very rugged and has the following properties:

- **Long term stability**
- **Wide temperature range**
- **Wide dynamic range**

## IDENTITY

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The unit has a unique ID number that follows the recorded data. This makes it possible to trace data to a certain unit.

## MEMORY

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CompactFlash memory card type II. 256 MB standard.

## DATA TRANSFER

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All data files are buffered in a "spool directory" on the memory card and are sent when the next GSM communication takes place. If GSM communication is not possible data are stored for transfer at a later time.

## DATA SMS

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INFRA C12 can send an SMS to a number of cell phones with data from a triggered event.

## SERVICE SMS

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SMS can be sent directly from INFRA C12 to service personnel when battery voltage is low, if sensors are lost/disconnected or when memory is close to full.

## CALIBRATION

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The unit has an internal memory for identity, calibration factors, calibration date etc.

## REMOTE OPERATION

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Unit settings can be changed from any PC using INFRA Net and an Internet connection.

## MECHANICAL & ENVIRONMENTAL

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Watertight anodized aluminium house with rubber seals. It has a hole for bolts passing through in horizontal direction for wall mount.

**Dimension:** 140 x 100 x 60 mm (5.5 x 3.9 x 2.3 in)  
(excluding antennas, connector and standoffs)

Material: Anodized aluminium.

Protection class IP67

**Weight:** 1800 grams (4.0 lbs)

**Operating temperature:** -20 to + 50 °C (-4 to 122 °F)

## CE APPROVAL

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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)

Product specifications and descriptions in this document are subject to change without notice.

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