

# INFRA C22

## Wireless Triaxial Vibration Monitor

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

- All-in-one datalogger and vibration sensor
- Up to 4 month of continuous monitoring on internal rechargeable batteries
- Built-in 4G modem
- Micro-SD memory card
- Simultaneous bar graph and waveform registration
- Weather proof
- Digital signal processing
- Post-processing, presentation and remote management in INFRA Net
- Multi button keypad
- GPS



INFRA C22 measures according to the following national and international standards:

<b>DIN 4150-3 Anlage</b>	1 – 315 Hz	<b>NS 8141:2013 Byggverk</b>	3 – 400 Hz
<b>DIN 4150-2 KB RMS</b>	1 – 80 Hz <sup>1</sup> 125ms	<b>NS 8141:2001 Byggverk</b>	5 – 300 Hz
<b>ISEE Seismograph</b>	2 – 250 Hz	<b>NS 8176 Komfort, RMS 1s</b>	1 – 80 Hz <sup>1</sup>
<b>AS 2187.2-2006</b>	2 – 250 Hz	<b>SS 4604861 Komfort, RMS 1s</b>	1 – 80 Hz <sup>1</sup>
<b>Arrêtè</b>	1 – 150 Hz	<b>SS 4604861 Komfort, RMS 1s</b>	1 – 80 Hz <sup>5</sup>
<b>ICPE</b>	1 – 150 Hz	<b>OfM 9/1997 dB</b>	1 – 80 Hz <sup>6</sup>
<b>IN 1226</b>	1 – 150 Hz	<b>ÖNORM S 9020</b>	1 – 315 Hz
<b>SBR-A</b>	1 – 100 Hz	<b>ÖNORM S 9012 RMS 1s</b>	1 – 80 Hz <sup>5</sup>
<b>SBR-B, RMS 125 ms</b>	1 – 80 Hz <sup>1</sup>	<b>ISO 10816-2 RMS 1s</b>	5 – 500 Hz <sup>3</sup> 125ms
<b>Toronto bylaw 514</b>	1 – 100 Hz	<b>ISO 2631-2 RMS 1s</b>	1 – 80 Hz <sup>1</sup>
<b>Toronto bylaw 514</b>	2 – 250 Hz	<b>ANSI S2.71 RMS 1s</b>	1 – 80 Hz <sup>1</sup>
<b>Turkey Mining and Quarry</b>	2 – 250 Hz	<b>NCh 3577</b>	1 – 315 Hz
<b>BS 7385</b>	1 – 300 Hz	<b>Geophone</b>	5 – 500 Hz
<b>SN 640 312a</b>	5 – 150 Hz	<b>PN-B-02170</b>	1 – 100 Hz <sup>4</sup>
<b>Acceleration</b>	5 – 300 Hz	<b>PN-B-02170</b>	1 – 100 Hz <sup>2</sup>
<b>SS 4604866 Spräng</b>	5 – 300 Hz	<b>FTA (VdB)</b>	1 – 80 Hz <sup>7</sup>
<b>SS 025211 Schakt</b>	5 – 150 Hz	<b>BS 6841 (VDV)</b>	
<b>SS 025211 Schakt</b>	2 – 150 Hz		

<sup>1</sup>20 mm/s, <sup>2</sup>25 mm/s, <sup>3</sup>200 mm/s, <sup>4</sup>250 mm/s, <sup>5</sup>700 mm/s<sup>2</sup>, <sup>6</sup>50-117 dB, <sup>7</sup>50-118 dB

# Technical Data

## DIRECTION OF SENSITIVITY

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C22 measures triaxial vibration.

## MEASURING

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The unit has built in digital signal processing, which processes all incoming data in real time according to the selected standard. The unit measures maximum values for each interval and at the same time, it records time history data when the vibration level exceeds the user preset threshold.

## SAMPLING

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The geophone signals are sampled at 4096 Hz using a high resolution A/D converter for a wide dynamic range. When a preset trigger level is exceeded a time history is recorded.

## RECORDING

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Recording time is up to 2 minutes, with up to 5 seconds pre-trig time.

## POWER SUPPLY

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Internal Lithium-Ion batteries that easily can be changed.

## MEASURING RANGE

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Frequency range 1 Hz - 500 Hz. The Geophones have a calibrated sensitivity within +- 2%. Maximum vibration level is 250 mm/s (10 in/sec) dependent on the selected standard.

## SENSOR ELEMENT

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The sensor elements are rugged high quality velocity sensing geophones with long term stability and wide dynamic range.

## IDENTITY

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The serial number of the unit and important metadata always follows the recorded data. This makes it possible to trace data to a certain unit.

## MEMORY

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Micro SD industrial memory card. 1 GB in standard configuration.

## DATA TRANSFER

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All data is buffered on the memory card and is sent when the next cellular communication takes place. If cellular communication is not possible, data is kept for transfer at a later time.

## DATA AND SERVICE MESSAGES

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Data and service messages are sent via INFRA Net for maximal flexibility.

## CALIBRATION

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

## SENSOR CHECK

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Internal dynamic test performed each time monitoring is initiated to confirm the sensors are responding and the unit is level.

## USER INTERFACE

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With a keyboard and display settings can be changed. The display also shows battery status, signal strength, and the latest events.

## REMOTE OPERATION

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Settings can be changed remotely using INFRA Net.

## MECHANICAL & ENVIRONMENTAL

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Weather proof aluminum house with rubber seals. It has holes for bolts passing through in both horizontal and vertical direction.

**Material:** Powder coated aluminum house and polycarbonate antenna cover.

**Dimension:** 146 x 127 x 89 mm (5.8 x 5.0 x 3.5 in)  
(Including antenna cover, excluding connector and standoffs.)

**Protection class:** IP67

**Weight:** 1820 grams (4.0 lbs) incl 2 batteries  
Operating temperature: -20 to + 50 °C (-4 to 122 °F)

## CE APPROVAL

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EMC: 2014/30/EU

LVD: 2014/35/EU

RoHS: 2011/65/EU (2015/863)

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

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