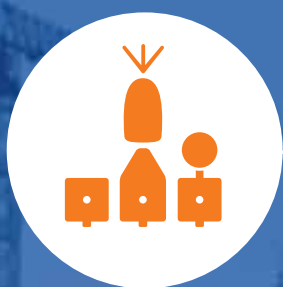




INFRA Field Monitoring System



SENSORS



DATA LOGGER



WEB BASED SYSTEM







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Making challenging & complex measurements easy

Sigicom is a leading supplier of measurement technology serving a number of large Customers. Our solutions are being used in many key projects in the building and construction industries.

Since its humble origins over three decades ago, Sigicom has grown to become one of the most trusted and sought after Manufacturer of robust measurement equipment for remote monitoring of environmental disturbances. In the early 80's vibration monitors, seismographs and sound level monitors comprised the main thrust of our business. In more recent times we have expanded our products portfolio adding additional dynamic and static sensors. Thanks to the company philosophy of working close with and listening to our Customers, never shying away from demanding and/or challenging requests; our products have improved and our Company has acquired unique excellence in these areas.

Today Sigicom is an independent and privately owned Company with focus on providing the most cost efficient equipment for remote monitoring of environmental

disturbances from infrastructure projects. Development of autonomous robust measuring equipment and the accompanying software for presentation and reporting, are areas to which we devote great attention, time and energy. Sigicom is actively involved in several standardization committees around the world, giving us the opportunity to provide our Customers with the most competitive equipment on the market.

Reliable in harsh environments

All our equipment is robust and reliable built to endure the harshest environments, withstanding cold Nordic winter nights as well as the Australian summer's heat at high noon. We provide complete solutions for your measurements including hardware, software and web interaction for compilation and presentation of measurement data.



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This urban building site represents a typical infrastructure project where **remote monitoring using the INFRA system is the most cost efficient solution.**

Sigicom's INFRA system is modular, flexible and built to last; it is fully automated and transmits data via an internet connection, allowing you the measurement consultant to control numerous instruments simultaneously.

Plug & Measure

As a measurement consultant using Sigicom's Plug & Measure sensors you can easily connect various sensor types you need for your project, for example a sound level meter, a geophone and an air blast sensor on the same bus cable to one of our data loggers. Toggling between various measurement standards is easy and possible since the digital signal processing is done in the sensor itself. Measurement standards and other parameters can be changed remotely on your computer in the comfort of your office without having to be at the job site.

View your measurement results in illustrative tables and charts using INFRA Net. Simultaneously stakeholders (construction manager), contractor and you can receive automatic SMS and e-mail alarms when limits are exceeded, battery level is low, cables are broken and more.

INFRA Academy & Our Services

Sigicom provides "INFRA Academy" an education to our Customers delivering the fundamentals ensuring you the best possible startup with your new INFRA system. As a Customer you can always contact us for support and advice. Our highly skilled Engineers will guide and support you through unforeseen situations that can occur when measuring. We provide state of the art calibration and service of INFRA equipment to ensure measurement accuracy and instruments reliability.



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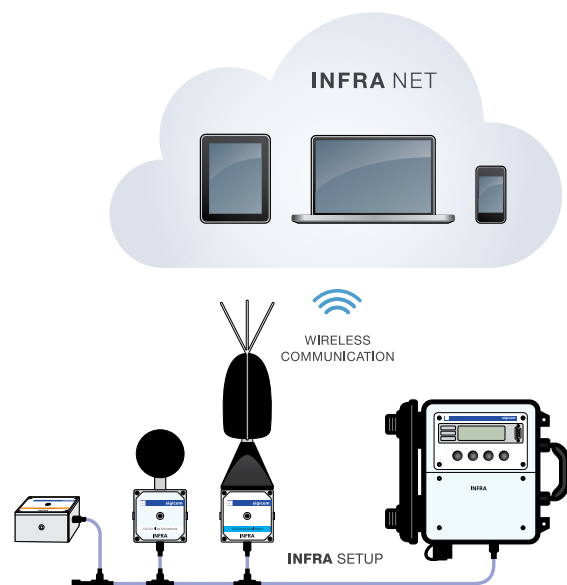
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A complete system for autonomous monitoring of building vibration, comfort vibration, outdoor and indoor sound level, air blast, crack displacement, inclination, caused by **blasting, construction works** and **road and railroad traffic**.

INFRA Field Monitoring System

The INFRA System is a self-contained monitoring and measuring system – from sensor to web presentation and report. With INFRA you can monitor and measure vibration, air blast, indoor and outdoor sound, crack movement, underwater shockwaves, moisture, temperature and much more.



INFRA System is comprised of a Master Unit and digital sensors

The Master Unit (data logger) built with internal battery stores and communicates data. A series of available sensors can be connected to a single Master Unit. Up to 16 channels can be connected to a Master Unit.

Automatic two way communication

Measurement data are transmitted with GSM at a pre-set time intervals or when an event occurs. Data is automatically sent to INFRA Net over the Internet and an alarm is sent as an SMS to selected recipients. The system can be remote controlled over the internet.



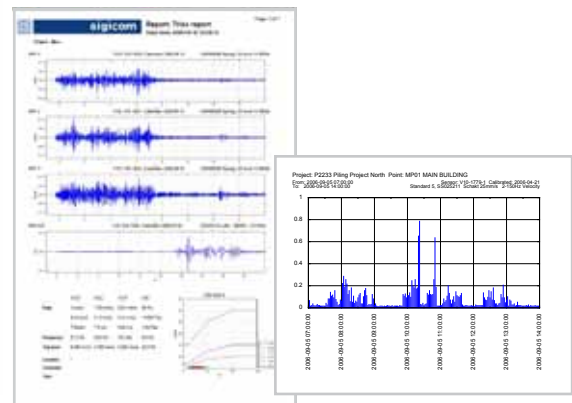
DIN 4150-2 KB 20 mm/s RMS 0.125 sek 1-80 Hz		
DIN 4150-3 Anlage 250 mm/s 1-315 Hz		
ISEE Seismograph	AS 2187.2 -2006	
SS 460 48 66 Spräng 250 mm/s 5-300 Hz		
SS 460 48 61 Komfort 20 mm/s RMS 1 sek		
BS 7385	NS 8141	...

Dynamic and static sensors

The INFRAsensor system allows the user to combine sensors (daisy chain) measuring/recording once every hour and sensors that sample data with up to 100kHz. This means that you can easily measure vibrations at the same time monitor a crack movement or a water level.

Handles numerous standards

The dynamic sensors have digital signal processing and records according to national and international standards. Signal processing done through our software makes it easy to add new or updated standards. Sensor standards can easily be remotely changed.

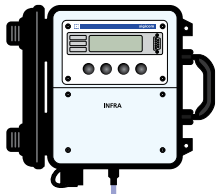


Internet based control and web based presentation

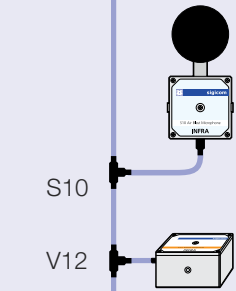
INFRAsensor Net provides Internet based system management and a web based presentation of measurement data. A highly professional and user friendly interface that can be modified using the color scheme and logotype of the end user. INFRAsensor Net offers easy to use project handling system and flexible analysis functionalities.

Efficient, easy and clear reporting

It is easy to use the database to create high quality reports directly into PDF format presenting your measurements data. INFRAsensor records maximums, e.g. once per minute (bar graph), and can simultaneously record detailed events with high sampling frequency.



Applications with INFRA Field Monitoring System

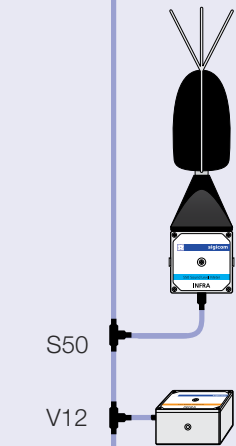


Open pit mining



Vibration and Air Blast

Tunnel Blasting

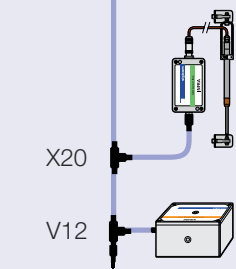


Rock Chrusher



Vibration and Noise

Recycling

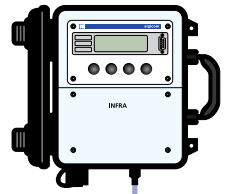


Bridge

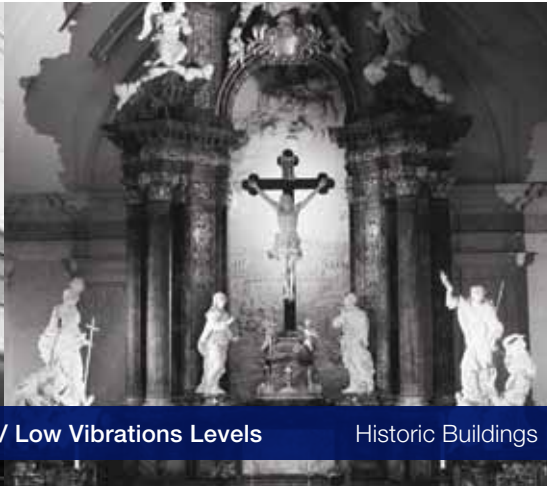


Vibration and Extensometer

Excavations

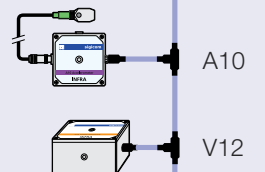


High Speed Rail



Comfort Vibrations / Low Vibrations Levels

Historic Buildings

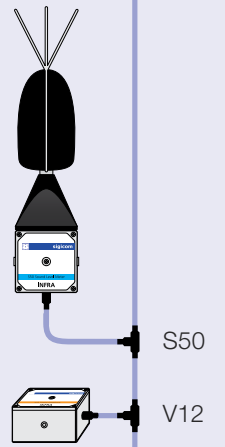


Highway



Vibration and Noise

Train and/or Light Rail

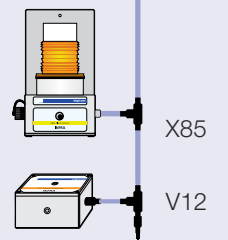


Pile Driving



Vibrations and Alarm Beacon

Demolition



Our services



Calibration

Calibration service is second nature to Sigicom as a supplier of quality measuring instruments. Therefore, we track the calibration schedule for all sensors that we have delivered and we can give the Customer an automated reminder before re-calibration is required.

Customers also have the option of sending the instruments to our calibration laboratory for service.

Service & Repair

If the need for service arises, for example due to damage to an instrument, we can always be at help.

INFRA-sensors and dataloggers can be sent to Sigicom for repair or other service. We have excellent troubleshooting routines. After repair, upgrade or service - and if required - we will automatically calibrate the instrument before it is returned to the Customer.

Support

We consider an active and effective support department as part of our mission to provide the best functionality and viability of the measurement systems we deliver.

Every support request we receive is registered in our case management system. All activities and status of each case entered in the system stay active until the case is resolved.

Our phone support is open weekdays (CET) 9-16 (closed for lunch 12-13).



Johan Larsson

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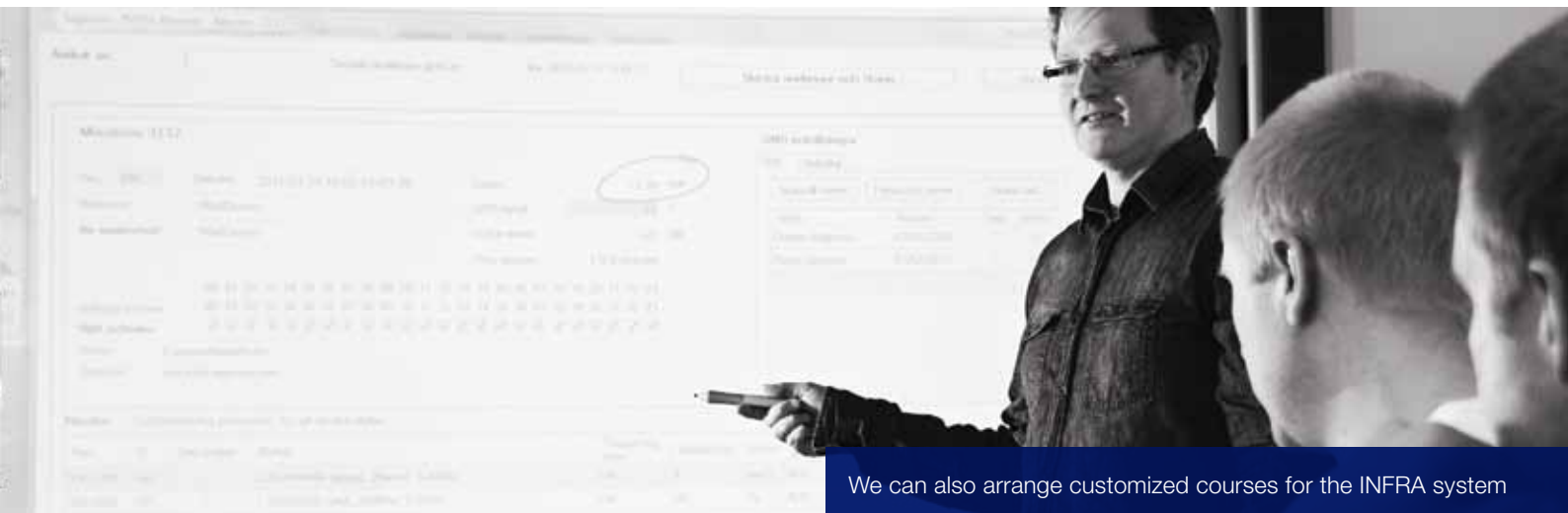
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We can also arrange customized courses for the INFRA system

Education

Training

INFRA Academy Basic is an introductory training program for the INFRA system.

Training goal

After the course, you will be able to install an INFRA measurement system, launch and remotely control the equipment. You will also be able to retrieve data and print out reports.

Participants

This course is for professionals who will be using the INFRA system for measurements in the field.

Prerequisites

General computer knowledge and some experience in measurement during blasting or other building or construction work.

Contents

Theory and practical exercises:

- General information on what you measure and what rules exist.
- Information regarding standards.
- General description of the INFRA system.
- Presentation of INFRA Net, the on-line database and user interface.
- Installation of a measuring system.
- Practical exercises with the installation and start-up of the sensors and data-logger.
- Practical exercises with INFRA Net.

Course Length

One day

Apply by telephone + 46 8 44 99 750 or send an e-mail to: sales@sigicom.com

Keeping you up to date

Keeping you up to date



Website

On our website you can always access the latest news and interesting articles on current events and new product launches.

Case studies

Here we publish interesting, relevant and educational case studies from challenging situations all around the world where our Customers have benefited from using Sigicom's INFRA system - it also successfully solved their challenge.



Customer Magazine

In our newsletter, INFRA Measurement News, you will find interesting, relevant articles and the latest information regarding remote monitoring and measurement of noise and vibration for infrastructure projects. Go to our web page and sign up ...


INFRA News

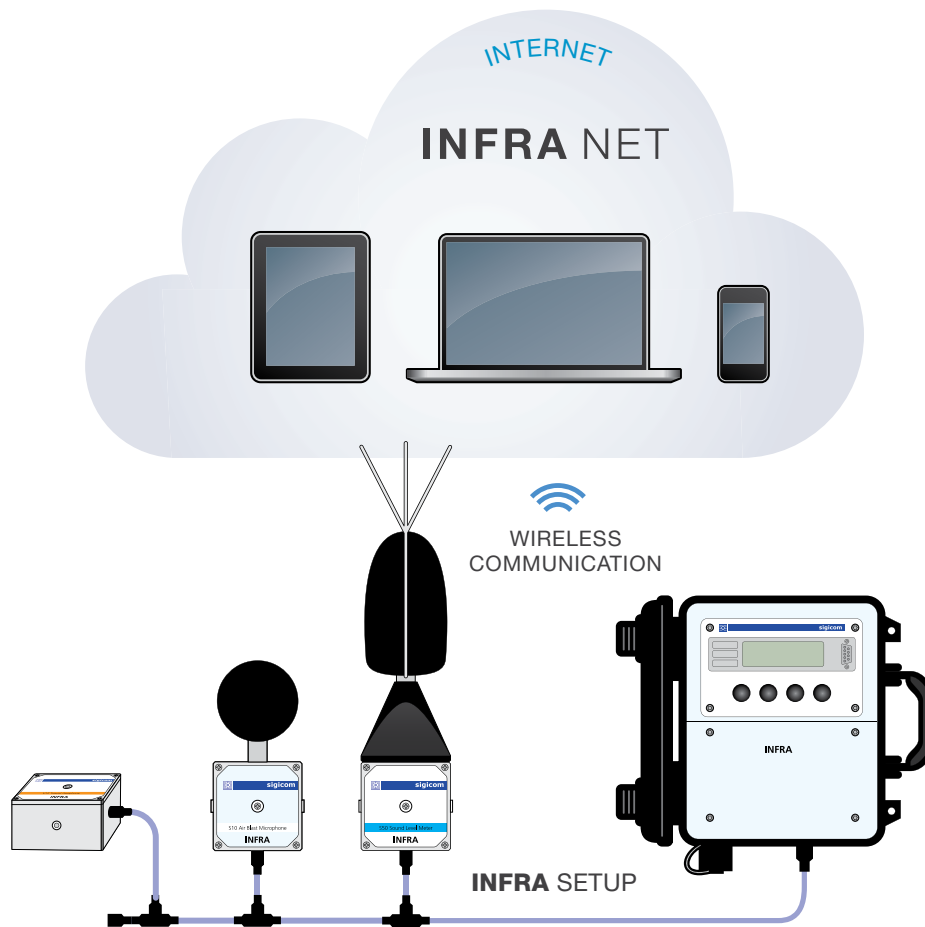
INFRA News is a digital newsletter bringing you the latest news and information from Sigicom. Sign up on our web page and you will be among the first to know the latest.



Product range



On the following pages, when this symbol  appears it means that a separate datasheet is available. Please contact Sigicom to request datasheets and more information on specific products.



INFRA Net

Internet based measurement database

2150 INFRA Net

INFRA Net has the following components

- INFRA Database on the Internet
- INFRA Net Manager PC client
- INFRA Web Presentation

INFRA Net is an internet based system for project administration, data analysis, reporting and web presentation of measurement data from generated by the INFRA System. INFRA Net is used as a comprehensive and quick way to present status and data from a large number of INFRA measurement systems. With INFRA Net it is very easy to create your own projects and add measuring points from ongoing or completed measurements.

Based on the projects and measuring points you can easily extract reports in PDF format which can be sent to your Customer. The software can also analyze and generate different types of charts from events and intervals that can be included into your report. INFRA Net also facilitates multiple users logged on to the system at the same time. With INFRA Net you can remote control your systems.

Datasheet available 



Web presentation

- Simple Customer interaction management
- Easy to e-mail login information directly to Customer
- Consulting company can add their own logo
- The consultant can choose own colour customizing the presentation
- Symbols shows GSM signal strength, battery and calibration date status
- Provides a quick snapshot of project status

Functionality for the Consultant

- Reports: Sensor based reporting
- Project administration: Create and change projects
- Project reporting: Reports from projects
- Remote control: Remote control for instrument (sensor) settings
- Equipment: Provides an overview of all INFRA equipment
- Customers: Customer information stored and available in data base
- Settings: Allowing personalization of the software
- Information: General information from the system

Dataloggers & Accessories



INFRA Master

with GSM and CompactFlash Memory

4100 INFRA Master

Measures:

- Vibration
- Vibration on sensitive electronic equipment in buildings
- Sound Level
- Air Blast
- Motion
- Crack Displacement
- Inclination
- Pollution
- Etc.

INFRA Master is a complete battery operated data logger with a built in GSM/GPRS modem and built in GSM antenna. The logger has two outgoing connections for the INFRA bus cable.

There is also a connection for an external GSM antenna.

The front panel consists of four buttons (easy operation) and a LCD screen with 4 lines, each can display up to 20 characters.

INFRA Master is either operated with an internal lead acid battery or connected to mains. The data is stored on the exchangeable CompactFlash card. The INFRA Master contains no measurement electronics and needs no calibration.

*) Lead Acid Battery sold separately

Datasheet available 



INFRA Mini

with GSM and CompactFlash Memory



4000 INFRA Mini

Measures:

- Vibration
- Vibration on sensitive electronic equipment in buildings
- Sound Level
- Air Blast
- Motion
- Crack Displacement
- Inclination
- Pollution
- Etc.

INFRA Mini is a complete battery operated data logger with a built in GSM/GPRS modem and GSM antenna. The logger has one outgoing connection for the INFRA bus cable and has a connection for an external GSM Antenna.

INFRA Mini is either operated with six alkaline batteries or on external power.

The data is stored on the exchangeable CompactFlash card. The INFRA Mini contains no measurement electronics that need calibration.

*) Alkaline Batteries sold separately

Datasheet available 

Dataloggers & Accessories

1609

INFRA Master Batterie Lead-Acid | Batterie Acide & Plomb pour INFRA MASTER

Lead Acid Battery for INFRA Master

- Weight approx. 3.3 kg
- Needs a connection cable (art.nr. 1610) with auto resetable thermo fuses on both poles, while charging
- To avoid unnecessary wear and tear on the battery terminals, we recommend to provide each battery with the Connection Cable (art.nr 1610) and let it sit there permanently



1610

Lead-Acid Kabel | Câble de Connection pour Batterie

Connection Cable

When charging a single Lead Acid battery, this separate connection cable - with auto resetable thermo fuses on both poles - is needed.

- To be used in combination with the Battery Charger for the INFRA Master (art.nr. 1673-1)
- To avoid unnecessary wear and tear on the battery terminals, we recommend to provide each battery with this cable and let it sit there permanently



1678

Solar Panel | Panneau solaire

Solar panel

A 10W solar panel will give a prolonged or continuously running system. A typical system consisting of a Master datalogger, a triaxial Geophone and an air blast sensor has a typical power consumption of 0,2 W.

- One hour of full sunshine will give enough energy for 50 hours of monitoring
- Includes charging regulator to prevent overcharging of the battery
- Dimensions 510x357x13 mm



Battery Charger, INFRA Master

- Can be permanently connected during monitoring
- When the INFRA Masters internal Lead Acid battery is fully charged, the charger will automatically switch to maintenance charging
- Can also be used for charging a single battery. In that case, a separate connection cable (art.nr. 1610) with auto resettable thermo fuses on both poles, is needed.



External Battery Cable

With this cable an external boat or car battery (12 volt) can be connected to the INFRA Master for extended monitoring time.

NOTE! When using an external battery, the internal Lead Acid Battery must always be disconnected



Wall Mount, INFRA Master

The lockable wall/floor mount for INFRA Master can be mounted with concealed bolts and thereafter the INFRA Master case can be mounted and padlocked . The INFRA Master will be kept in place even after opening the guard. (Padlock is not included)



Termination plug

Like all fast digital communication networks, the INFRA network needs to be terminated in both ends.

The INFRA Mini has one built in termination point in the casing, but the INFRA master requires a termination plug on the case (when using only one of the two available outgoing cable-connectors on the Master. If both of the connectors are used, then the Termination Plug is used at the end of each cable).



Dataloggers & Accessories

1674-1 Battery Eliminator Mini | Eliminateur de batterie compact pour Mini

Power Supply, INFRA Mini

Battery eliminator for INFRA Mini



1680 Batterie Koffer Mini | Boîtier de batterie pour MINI

New Battery case

This newly developed Battery Case extends the operating time of the INFRA Mini by a factor of 1:4
The Battery Case contains 3 battery compartments, which respectively holds 6 alkaline batteries. Along with the INFRA Mini internal battery compartment, with 6. alkaline batteries, connected with this Battery Case – this significantly extends the operating time of a INFRA Mini system.

NOTE! The Battery Case can only be used in combination with a INFRA Mini data logger that has a serialnumber from 4999 (origin from december 2012)

This is due to that the INFRA Mini has from this date undergone a change in hardware and has been equipped with such as thermo fuses, new internal wiring and completely new battery compartment.

To be able to use this Battery Case in combination with earlier versions of INFRA Mini, Sigicom offers an upgrading kit - incl. hardware and work.

Please contact us for quotation and more information regarding upgrading of your INFRA Mini.



Fitted with Sigicom's newly developed battery compartment

Wall Mount, INFRA Mini

The lockable wall/floor mount for INFRA Mini can be mounted with concealed bolts and thereafter the INFRA Mini case can be mounted and padlocked . The INFRA Mini will be kept in place even after opening the guard. (Padlock is not included)



Dataloggers & Accessories




New INFRA Micro

With internal GSM/GPRS* and possibility to connect an external modem

4111 INFRA Micro

Measures:

- Vibration
- Vibration on sensitive electronic equipment in buildings
- Sound Level
- Air Blast
- Motion
- Crack Displacement
- Inclination
- Pollution

Datasheet available 

INFRA Micro is a complete digital data logger with built in GSM/GPRS modem or the option to connect an external modem. The INFRA Micro is equivalent to other INFRA data loggers and the external modem is controlled by automatic power switch. The data logger has a connection for the INFRA bus cable where Plug & Measure sensors are connected. The front panel has of four buttons (easy operation) and a LCD screen with 4 lines, each can display up to 20 characters. INFRA Micro is developed for integration in an enclosure similar to INFRA 4030/4060 or equivalent.

INFRA Micro is powered by a lead acid battery housed within the enclosure and can be connected to an external power source e.g. solar panel, deep cycle marine battery. The data is stored on the exchangeable CompactFlash card and automatically sent via the internal or external modem to a database on the internet. The INFRA Micro contains no measurement electronics and needs no calibration.

Accessories available: Pole mount, wall mount and bracket.

*) Only for EU, Norway, USA, Canada, Australia and New Zealand

A new data logger for box-builders and customized applications



30 Ah Enclosure

60 Ah Enclosure

4030 Enclosure with an INFRA Micro, prepared for an 30 Ah battery

INFRA 4030 is a complete package for box builders needing an INFRA Micro digital data logger and an enclosure housing a 30 Ah battery. The units provides a built in antenna, bulkhead feed through for INFRA bus cable and feed through for connecting to an external power source.

- Dimensions: 370 x 319 x 179 mm (14.6 x 12.2 x 6.7 inches)
- Material: Polycarbonate
- Protection class: IP67
- Weight: 7 kg, including INFRA Micro excluding modem and battery (15.4 lbs)

Battery sold separately

4060 Enclosure with an INFRA Micro, prepared for an 60 Ah battery

INFRA 4060 is a complete package for box builders needing an INFRA Micro digital data logger and an enclosure housing a 60 Ah battery. The units provides a built in antenna, bulkhead feed through for INFRA bus cable and feed through for connecting to an external power source.

- Dimensions: 424 x 374 x 204 mm (16.5 x 14.6 x 7.9 inches)
- Material: Polycarbonate
- Protection class: IP67
- Weight: 9 kg, including INFRA Micro excluding modem and battery (20 lbs)

Battery sold separately



The INFRA Micro was successfully used in the BART extension project in San Francisco. **Please visit our Website and read our case study for more information.**

The INFRA Micro concept

INFRA Micro is built for the option of connecting an external modem and supplying a larger battery for significant extension of measurement time (months).

In the BART Customer case the INFRA Micro provided a solid solution for the Consultant to provide long term measurement with a pole mountable robust enclosure. Most important for this project was the requirement to measure both vibration and noise at the same time using Sigicom geophones and type 1 sound level meters.

The INFRA Micro with 30 Ah enclosure using an external 3G modem has been field tested in Australian heat with great success.

INFRA Micro can be delivered with two different enclosure cases housing either a 30 Ah battery or a 60 Ah battery. The system also accommodates different communication methods with the external modem and is characterized by extremely low power consumption in measurement mode with communication off (50 mW excluding sensor power).



Dataloggers & Accessories

1674-1

INFRA Master Batterie Ladegerät | Chargeur de batterie INFRA Master

Battery Charger, INFRA Micro

- Can be permanently connected during monitoring
- When the INFRA Micros internal Lead Acid battery is fully charged, the charger will automatically switch to maintenance charging



1678

Solar Panel | Panneau solaire

Solar panel

A 10W solar panel will give a prolonged or continuously running system.

- Includes charging regulator to prevent overcharging of the battery
- Dimensions 510x357x13 mm



Sensors & Accessories



New
C10

INFRA Compact - Wireless Vibration Monitor



4210 C10


Measures:

- Vibration
- Vibration on sensitive electronic equipment in buildings

INFRA C10 is a Vertical digital Geophone and a data logger built into the same wireless unit. The C10 has a built in GSM modem and GSM antenna. On the unit you have two buttons for operations and LED indicators for information.

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 Manager. C10 records bargraph and transient data simultaneously.

The INFRA C10 works with INFRA Net Manager the same way as the other INFRA data loggers and sensors. Low power consumption in combination with internal Li-ion Batteries, gives the INFRA C10 several weeks of measurement time. Calibration is needed since the INFRA C10 is a complete vibration monitor, with a built in Geophone.

Datasheet available 

*) Batteries sold separately

Li-ion Battery

- Internal Li-ion battery for INFRA C10
- Weight approx. 100 gram
- Capacity 5800 mAh
- Needs a separate charger (art.nr 1675-1)
- INFRA C10 needs 2 internal batteries



Battery Charger, INFRA C10

- Charges one separate battery at a time
- Output 1,3A
- Intended for indoor use only




Power Supply

- Battery eliminator for INFRA C10
- Intended for permanent connection during monitoring
- Output 1,5A



3110

INFRA V10 Vertikal Geophon | Géophone vertical INFRA V10

Datasheet available 

Vertical Geophone V10

- INFRA V10 is a digital Geophone that can handle the majority of measurement standards including acceleration and comfort measurement
- Dimensions 78x78x45 mm (excl. pads and connector)
- Weight approx. 500 gram
- Maximum vibration level: 250 mm/s
- Frequency range: 1 – 500 Hz
- Protection class: IP67
- Designed for mounting on floor or wall. Equipped with mounting holes, both vertical and horizontal. Various mounting accessories are available.



3111

INFRA V11 Horizontal Geophon | Géophone horizontal INFRA V11

Datasheet available 

Horizontal Geophone V11

- INFRA V11 is a digital Geophone with the same specifications etc. as the Vertical Geophone V10 – but is designed for horizontal measurements.



3112

INFRA V12 Triax Geophon | Géophone Triaxiales INFRA V12

Datasheet available 

Triaxial Geophone V12

- INFRA V12 is a digital Geophone that measures vibrations from blasting, piling, sheet piling, excavation, compaction and traffic according to standards
- Dimension 102x78x75 mm (excl. pads and connector)
- Weight approx. 1200 gr.
- Maximum vibration level: 250 mm/s
- Frequency range: 1 – 500 Hz
- Protection class: IP67
- Designed for mounting on floor, wall or on a comfort measuring plate. Equipped with mounting holes, both vertical and horizontal. Various mounting accessories are available.



Inverted Triaxial Geophone V12R

- INFRA V12R is a digital Geophone with the same specifications etc. as the triaxial V12 – but designed for mounting in the ceiling or in tunnel roofs



Sensors & Accessories

1812 Montageplatte V10 | Plaque de montage V10

Mounting plate V10

Can be fastened to a flat surface with double sided adhesive tape. Adapted for V10/11 Geophones.

- Dimensions 78x12x43 mm



1813 Montageplatte V12 | Plaque de montage V12

Mounting plate V12

Can be fastened to a flat surface with double sided adhesive tape. Especially adapted for V12 Triaxial Geophone. Can also be used for mounting Geophones V10/11, S10 Microphone or S50 Sound Level Meter on a wall.

- Dimensions 78x12x102 mm



1820 Montageplatte für Komfort Messungen V12 | Plaque de confort de mesure pour V12

Comfort Measuring Plate V12

Fulfills requirements for mounting and measuring of comfort levels with a V12 Geophone according to Swedish, Norwegian and German standards. Adjustable leveling plate.

- Dimensions $\varnothing 150 \times 35$ mm (incl. screws)
- Weight approx. 1500 gram



1815 Nivellierplatte | Plaque de mise à niveau

Leveling Plate V12

Adjustable leveling plate. Especially adapted for V12 Triaxial Geophone. Also intended for use with C10 and for mounting of Geophone V10/11.

- Intended for low frequency measurements only
- Dimensions 175x70x110 mm (incl. screws)



1740

Magnetfuß | Embase magnétique de montage

Magnet Mount

Heavy duty magnet for mounting of Geophones, Air Blast Microphones, Sound Level Meters etc. Designed for mounting on magnetic surfaces.

- M6 internal thread for sensor bolt
- Dimensions Ø89x28 mm (incl. pads)



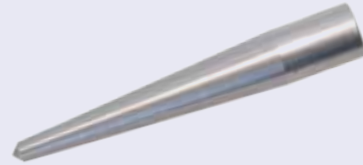
1810

Erdspieß | Pointe conique

Ground Spike Conical

For ground mounting of INFRA Geophone V10, V11, V12 and C10.

- M6 internal thread for sensor bolts
- Length 125 mm



1811

Erdspieß | Pointe conique

Ground Spike Conical

Extra long Ground Spike - for mounting of Geophones in softer soil.

- M6 internal thread for sensor bolts
- Length 500 mm

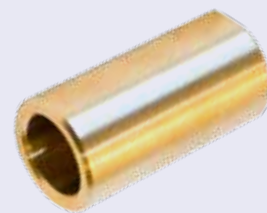


1809

Erdungsspieß | Protection de pointe

Ground Spike Impact Protector

Protects the ground spike when using a hammer or a sledgehammer.



Sound Level Meter S50

- INFRA Sound Level Meter type 1. Measures sound levels outdoor and indoor and structure-borne sound.
- The sound level meter measures the equivalent, or average, sound pressure level Leq. In addition, it measures the instantaneous, maximum and peak sound levels Lmax, at the same time. The interval time can be set from 5 seconds to 20 minutes.
- Measuring range 20-130 dB in four ranges, each with a dynamic range of 75 dB
- When triggered, a sound clip up to 10 sec. will be recorded
- Weighting: dBA & dBC
- Fast & Slow
- Dimensions 78x270x70 mm (excl. pads, connector & bird spikes)
- Weight approx. 750 gram
- Designed for vertical mounting on a wall, pole or tripod. Various mounting accessories are available.



Mounting Wedge S50

The mounting wedge is intended for use with Sound Level Meter S50 when mounted on a wall. By using the wedge the sensing microphone will come very close to the wall, which is a requirement in many cases.

- Incl. M6 bolt (length 31 mm) for wall mounting (fitting Sensor Bolt)
- Dimensions 78x24x78 mm (incl. pads)



Sound Level Calibrator Type 1

Sound level calibrator that generates a sound signal with 94dB or 114 dB at 1000 Hz. Used for functional test of Sound Level Meter S50 before and after the measurement period.



Air blast Microphone S10

- INFRA Air Blast Microphone S10 measures air blast pressure to valid national and international standards
- It measures both maximum values for each minute and also a complete air blast record
- Measures up to 2000 Pa with a resolution of 0.5 Pa
- Dimensions 78x158x65 mm (excl. pads and connector)
- Weight approx. 500 gram
- Designed for vertical mounting on a wall, pole or tripod. Various mounting accessories are available.



Air blast Microphone S11

- INFRA Air Blast Microphone S11 is used when air blast pressures higher than normal are expected. For example in tunnel systems.
- Measures up to 7000 Pa
- Dimensions 78x158x65 mm (excl. pads and connector)
- Weight approx. 500 gram
- Designed for vertical mounting on a wall, pole or tripod. Various mounting accessories are available.



Magnet mount

Heavy duty magnet for mounting of Geophones, Air Blast Microphones, Sound Level Meters etc. Designed for mounting on magnetic surfaces.

- M6 internal thread for sensor bolt
- Dimensions Ø89x28 mm (incl. pads)



Accelerometer

When measuring vibrations, a piezoelectric accelerometer is sometimes easier to mount on sensitive equipment. It is also smaller than a geophone and not sensitive to the orientation.



New Micro Triaxial Accelerometer

- INFRAsensor 2912 is an extremely small accelerometer, developed for vibration monitoring of sensitive equipment. It is much smaller and lighter than a geophone and insensitive to magnetic interference. Typical applications are sensitive items like sculptures, paintings in churches and old buildings.
- It is possible to measure acceleration or particle velocity
- It is connected to the INFRAsensor Bus cable via the supplied connection box
- Dimensions 14x21x14 mm
- Weight approx. 7,5 gram
- Depending on the subject and environment, the sensor is mounted with adhesive tape, wax or removable glue
- Not suitable for outdoor use



P11 Low Pressure Hydrophone

- P11 is a Hydrophone for monitoring high frequency water shockwaves that affect fish farms and other extremely sensitive objects
- Water shock waves arise from blasting and already at very low pressures they can damage fish and wildlife in the water. In particular fish farms are sensitive to the overpressure.
- Measurement range: 0-100 kPa
- Frequency range: 10 Hz to 5 kHz
- Sampling rate 35 kHz
- Measures both maximum pressure and maximum impulse density as two interval channels and when triggered a pressure event is recorded



P12 High Pressure Hydrophone

- P12 is a hydrophone for monitoring of high frequency water shock waves that affect objects like dam hatches, ships, drill rigs and other objects under water
- Measurement range: 0-50 MPa
- Frequency range: 10 Hz to 20 kHz
- Sampling rate 64 kHz
- Measures both maximum pressure and maximum impulse density as two interval channels and when triggered pressure event is recorded



Sensors & Accessories

2618

INFRA Dehnungsaufnehmer | Extensomètre INFRA

Crack Displacement Sensor

INFRA Crack displacement is a sensor that measures movement between two aluminium pieces bolted to a surface. Distance is measured with a spring loaded tip.

- Rugged for outdoor use
- Measuring range 0-18 mm with a resolution of 0.001 mm (1µm)
- Connects directly to the INFRA bus cable



2252

INFRA Dehnungsaufnehmer | Extensomètre INFRA

2255

Extensometer Sensor

- INFRA Extensometer is a sensor that measures movement between two bolts. Distance is measured with a moving bar. It is completely sealed and can be used under water (IP68). Measuring range 0-100 or 0-250mm with a resolution of 0.01 mm
- Connects directly to the INFRA bus cable

Available in lengths of:

- 2252 - 100 mm
- 2255 - 250 m



3247

INFRA X20BP Barometersensor | Capteur Barométrique INFRA X20BP

Barometer Sensor

The barometer is used to monitor atmospheric pressure.

- Measuring range 300-1100 mbar, resolution 0.1 mbar
- Connects directly to the INFRA bus cable



Air Humidity and Air Temperature Sensor

Measures air humidity and air temperature with very high accuracy even in tough environments like outdoor on bridges with sometimes 100% relative humidity. It is well proven in Nordic climate.

- Measuring range 0-100% relative humidity, resolution 0.1%, -40 to +70 degrees Celsius with a resolution of 0.1 degree Celsius
- Connects directly to the INFRA bus cable



Temperature Sensor

A temperature sensor for accurate measurement of temperature in air, water or in ground. The sensor is based on a Pt100 element in a completely water tight metal body (IP68).

- Measuring range -50 to +120 degrees Celsius with a resolution of 0.01 degree Celsius
- Connects directly to the INFRA bus cable



Concrete Humidity and Temperature Sensor

Intended for long term monitoring of moisture in concrete structures. Can be mounted in drilled hole in a concrete structure.

- Measuring range 0-100% relative humidity, resolution 0.1%, -40 to +70 degrees Celsius with a resolution of 0.1 degree Celsius
- Connects directly to the INFRA bus cable



Sensors & Accessories

2655-1 Wasserstand Sensor | Capteur de niveau d'eau

2655-2

Ground Water level Sensor

Measures water level with a high quality pressure sensor and automatic compensation for atmospheric pressure.

- Measuring range 0–1000 cm with a resolution of 0.5 cm
- Connects directly to the INFRA bus cable
- Can be converted to pore pressure sensor with adapter 2665 and weight 2666

Available with cable lengths of:

- 20 meter - 2655-1
- 30 meter - 2655-2

Other lengths on request.



2268-69 Porendruck Tip BATMKIII | Embout BATMKIII pour Pression interstitielle

Pore Pressure Tips

System for measuring pore pressure in soil. The unique BAT-system is very easy to install and use. Only the pore pressure tip and a standard tube is installed in the ground. There are no cables to handle during installation.

When the tip is installed a pressure sensor (2655-1 with pore pressure adapter and weight) is put into the metal tube. The sensor has a syringe in its lower end. When the sensor reaches the pore pressure tip a rubber membrane is penetrated and the pore pressure is sensed. The sensor can be left for long term monitoring of the pore pressure.



2665-66 Porendruck Adapter & Gewicht | Adaptateur & Poids pour Pression Interstitielle

Pore Pressure Adapter & Weight

Converts ground water level sensor 2655-1 to a pore pressure sensor.



Please contact Sigicom for detailed information on pore pressure monitoring.

AlarmBox X80

INFRA Alarm Box can be connected to an external warning flash light or siren and a battery.



Alarm Beacon X85

INFRA Alarm Beacon is e.g. used to warn machine operators when piling, sheet piling or compacting.

- The alarm level can be set to a percentage of the trig level (from 1 to 100 %). When the alarm level is exceeded the alarm beacon flashes.
- It can also be used for high levels when blasting. In this case the alarm level can be set between 100 and 1000% of the trig level
- Connects directly to the INFRA bus cable



New Wireless Alarm Beacon X88

- Customized product, please contact Sigicom for more information



New Dust Monitor

INFRA X20DM Dust Monitor is a device that with high quality simultaneously measures the following parameters:

- average dust concentration
- maximum dust concentration
- battery voltage (internal)

Under a wide range of ambient environmental conditions. Long-term, precise and drift-less measurements of airborne particulate matter concentrations down to 1 µg/m³ are assured by a unique state-of-the-art combination of optical sensing and electronic processing techniques.

Interval time, is selected via INFRA Net Manager and can be handled remotely. It can be used for size-selective particulate measurements using an omni-directional inlet and ACGIH traceable metal cyclones for monitoring PM₁₀, PM₄, PM_{2.5}, and PM_{1.0}, that is, the concentration of particles smaller than 10 µm down to 1 µm aerodynamic equivalent diameter, respectively.

- Concentration measurement range: 0.001 to 400 mg/m³
- Choose between the built-in 12V sealed lead battery, and the 100-240VAC power supply (incl.)
- Over 100 hours operating time before next charge
- Dimensions: 533x 431x215 mm
- Weight: 12.9 kg
- To be mounted on a vertical pole or a horizontal cross arm. Various mounting accessories are available.



New Weather station 4 channel

INFRA X20WXT Weather Station is a small and lightweight transmitter that with high quality simultaneously measures the following parameters:

- wind speed
- wind direction
- rain intensity
- air temperature

It has two standards, one presenting the measured quantities in SI-units, and the other in US-units.

All settings, such as Interval time, is selected via INFRA Net Manager and can be handled remotely.

- Low power consumption
- Dimensions: Ø115x240 mm
- Weight: 650 gram
- Protection class: IP66
- Bird spikes included, to reduce the risk that birds interfere the wind and rain measurement
- Robust, because it contains no moving parts - which is also a great benefit when simultaneously measuring noise
- To be mounted on a vertical pole or a horizontal cross arm



New Weather station 2 channel

INFRA X20WMT Wind Station is a small and lightweight transmitter that with high quality simultaneously measures the following parameters:

- wind speed
- wind direction

It has two standards, one presenting the measured quantities in SI-units, and the other in US-units.

All settings, such as Interval time, is selected via INFRA Net Manager and can be handled remotely.

- Low power consumption
- Dimensions: Ø115x140 mm
- Weight: 510 gram
- Protection class: IP66
- Bird spikes included, to reduce the risk that birds interfere the wind measurement
- Robust, because it contains no moving parts - which is also a great benefit when simultaneously measuring noise
- To be mounted on a vertical pole or a horizontal cross arm



Wind Speed and Wind Direction Sensors

Wind speed and wind velocity are very important parameters when monitoring sound. High wind speed normally disqualifies sound measurements.

Can also be used to correlate vibration with windspeed at wind mills or high rise buildings.



Mounting bracket

Mounting bracket, fitting both art.nr 3245 and 3246.



Cables & Additional Accessories

1100 -
1140

INFRA Sensor Kabel | Câble INFRA pour Capteur

Infra Sensor Bus Cable

The INFRA Cable has moulded contacts that are waterproof (IP67) when connected according to instructions. The cable contains conductors for both data transfer and power supply for the sensors. The cable can be connected directly to any INFRA datalogger and sensor.

- Total cable length in one system is maximum 500 meters
- Cable diameter 7 mm
- Please note that the drop cable length is max. 5 meters

Available in lengths of:

- 1100 - 0.3 meter
- 1101 - 1 meter
- 1102 - 2 meter
- 1105 - 5 meter
- 1115 - 15 meter
- 1140 - 40 meter



1472

Kabel Fensterdurchführung | Câble adaptateur au travers de fenêtre

Cable for Window Feed Through

A short flat cable for feed through when connecting through window frames/doorposts etc.



1200

INFRA Kabeltrommel | Enrouleur de câble INFRA

INFRA Cable Winder

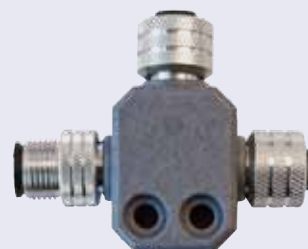
Holds up to 50 meters of cable and is easy to use in the field.



T-coupling

The T-coupling is used to connect one drop cable to the main cable. The connection is made in 90 degrees from the main cable.

- Please note that the drop cable length is max. 5 meters



Y-coupling

The Y-coupling is used to connect a drop cable to the main cable. On the Y-coupling the drop cable follows the main cable.

- Please note that the drop cable length is max. 5 meters



Feed Through Connector

Ideal for Box builders. Installed in a wall it is possible to connect one INFRA bus cable on the inside and one on the outside.



Termination Plug

Like all fast digital communication networks, the INFRA network needs to be terminated in both ends.

The INFRA Mini has one built in termination point in the casing, but the INFRA master requires a termination plug on the case (when using only one of the two available outgoing cable-connectors on the Master. If both of the connectors are used, then the Termination Plug is used at the end of each cable).



Cables & Additional Accessories

1710 -
1714

Sensor Befestigungsschraube | Cheville de fixation

Sensor Bolts

For mounting of the different INFRA sensors, a M6 bolt is used (incl. nut and washer).

Available in lengths of:

- 1710 - Short 75 mm
- 1712 - Long 100 mm
- 1714 - Extra long 120 mm

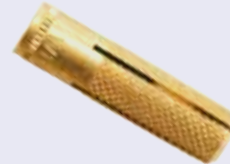


1720

Dübel | Prolongateur

Expansion Plug

- Expansion plug – suitable for concrete, rocks, walls etc
- Mounted in Ø8 mm predrilled holes
- M6 internal thread for sensor bolt
- Dimension Ø8x30 mm



1892

Selbst Vulkanisierung Band | Ruban auto vulcanisateur

Self Vulcanising Tape

Used for insulating and protecting of cable joints. Uninsulated joints should not be placed directly on the ground.



1891

INFRA Werkzeug- Kit mit Tasche | Kit d'outils INFRA avec boîtier

Tool Kit with Case

- Comes in a practical bag, with additional space for bolts, expansion plugs, couplings and termination plugs
- Toolkit necessary for mounting of sensors and opening of battery compartment in INFRA Master/Mini



1250

Externe GSM Antenne | Antenne GSM externe

GSM/GPRS External Antenna

- Is equipped with a 3 meter connection cable
- To be used during poor GSM coverage, or when the INFRA Master/Mini is mounted in a shielded area
- When using the external GSM Antenna with an INFRA Master, a rewiring in the INFRA Master has to be done.

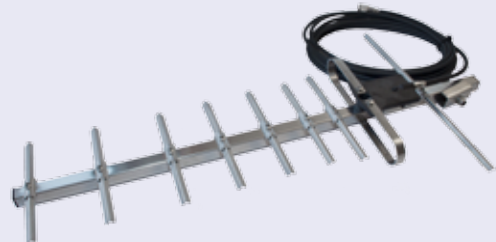


1251

GSM-Antenne direktionale | Antenne GSM Directionnelle

GSM/GPRS Directional Antenna

In cases when the GSM/GPRS signal is weak a directional antenna can help.

1259 -
1261

GSM- Antenne Verlängerungskabel | Câble de déport antenne GSM

GSM-antenna Extension Cable

Should only be used in exceptional cases when the original cable is too short.

- 1259 - 5 meters
- 1260 - 10 meters
- 1261 - 30 meters



1435

Compact Flash Karte | Carte Compact flash

CompactFlash Card

- 256MB
- Temperature range from -40 C to + 85 C
- Advanced error correction and wear-leveling

NOTE! We strongly recommend to only use this type of CompactFlash cards with the INFRA system.



Cables & Additional Accessories

1469 Compact Flash Karten - Lesegerät | Lecteur de carte Compact flash

CompactFlash Reader PC-card

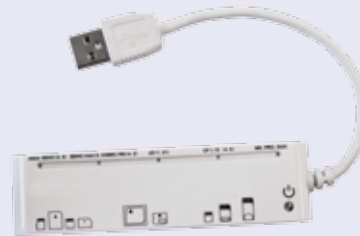
Enables to read the CompactFlash in a regular PC.



1470 Compact Flash Karten - Lesegerät USB | Lecteur USB de carte compact flash

CompactFlash Reader with USB

- CompactFlash reader that can be connected to the USB port of the PC
- Available in different configurations



1471 RS 232 Kabel | Câble RS 232

RS 232 Cable

- For connecting a PC to INFRA data logger
- "Null modem" type
- Necessary for downloading new software to the INFRA data logger

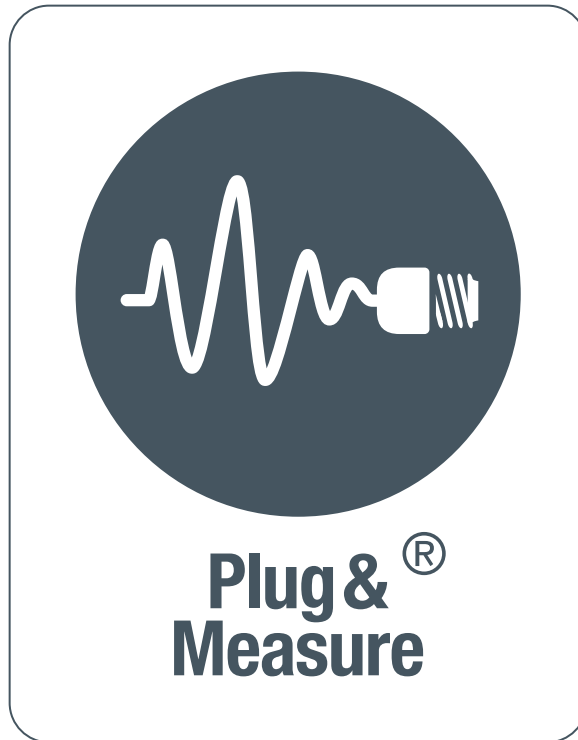


1473 USB-RS 232 Adapter | Adaptateur USB - RS 232

RS 232 USB


For connection to PCs without traditional RS-232 serial ports.





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