

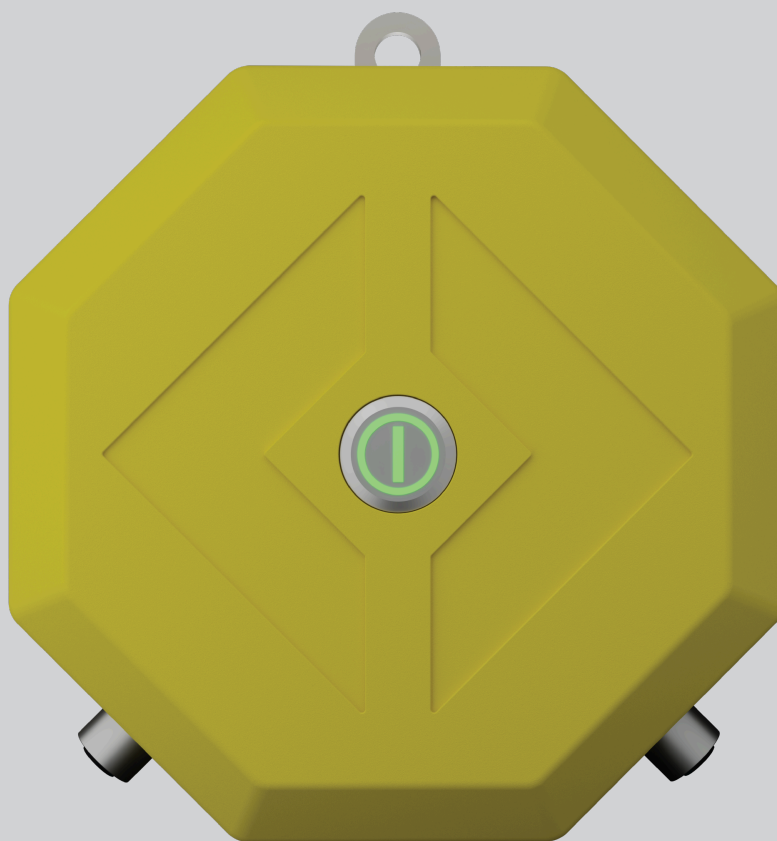


VEMAVENTURI
A PERI COMPANY

ISC LINK

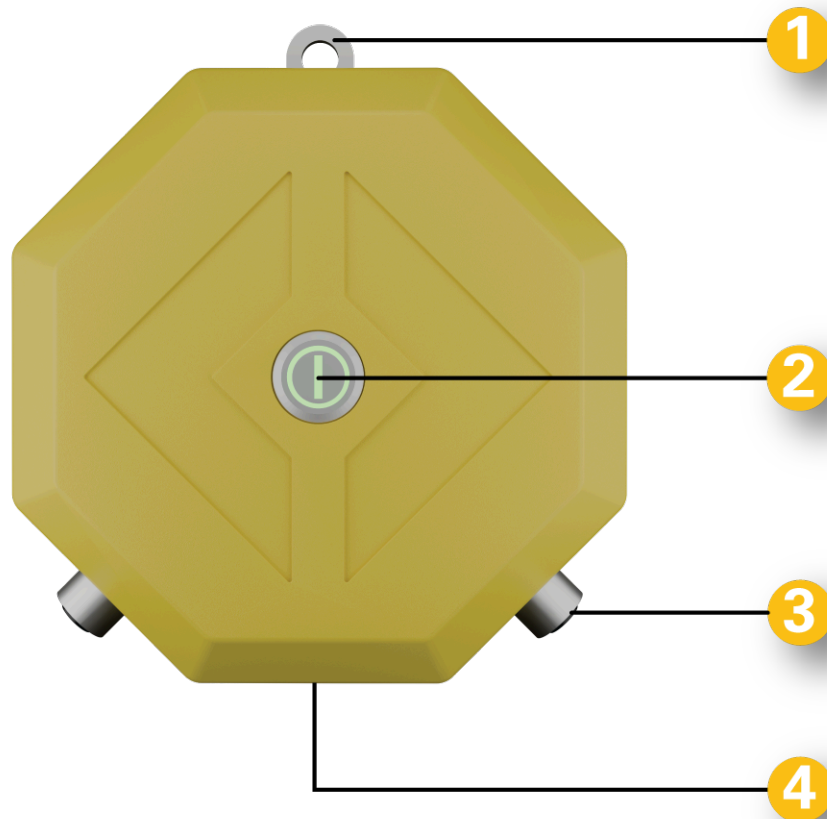
Concrete monitoring system

Installation and operating instruction | v1.0



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- 1. Hanging bracket**
For mounting the device on formwork
- 2. ON/OFF Button with status LED**
Red and Green LED indicate the devices status
- 3. Digital measuring channels**
For temperature and/or pressure sensors
- 4. USB-C port**
For charging and/or extracting measured data

2.1. Warnings

Warnings appear before instructions for action and are categorised as follows:



Danger

means that serious bodily injury or death will occur if the aforementioned precautions are not taken.



Warning

means that serious bodily injury or death may occur if the aforementioned precautions are not taken.



Caution

means that minor bodily injury may occur if the aforementioned precautions are not taken.



means that damage to property or an undesirable situation may occur if the aforementioned precautions are not taken.

2.2. General information



Warning

If the equipment is used in a manner not specified by the manufacturer or this document, the protection provided by the equipment may be impaired.



Warning

The unit is only for indoor charging with the power adapter and is powered by an internal battery inside the unit when operated in outside environment.



Warning

Do not leave the unit exposed to direct sunlight for an extended period of time.



Safety instructions apply to all service life phases of the system.

The contractor must ensure that the installation and operating instructions provided are available at all times and understood by the site personnel.

2.2.1. Before using the system

- Read and understand this manual and the safety instructions it contains carefully.
- Observe the laws and regulations in force in the country of use. This includes, in particular, safety precautions as required when handling live equipment.

- Check units, mains cables and accessories for damage and functional correctness.
- Damaged connectors and cables must be removed immediately and no longer used.
- Only use original spare parts from the manufacturer.

Failure to observe these safety precautions may result in injury or damage to the unit.

The unit has been designed for use in harsh environments. Operations outside of the specified conditions may result in damage to the equipment.

2.2.2. Charging the unit



Danger

Lithium-ion battery is installed in the unit. The battery may only be replaced by a qualified person!

The usage time or the discharge speed of a battery depends on several factors:

- Ambient temperature
- Usage time
- Temperature log rate
- Battery age

If the battery capacity and discharge time have decreased significantly, the battery should be replaced. To do this, contact a service workshop designated by the manufacturer. **Never replace the batteries yourself.**

If the unit is left unused, the battery will discharge over approximately three months. After being stored without charge for this period, the unit may be unresponsive for up to 10 minutes when first connected to power. To maintain battery health, the unit should be charged at least every six months, even when not in use.

The lithium-ion batteries must be charged **before the units are used for the first time**. The battery charging circuitry in the device ensures that the batteries do not overheat or get damaged during the charging process.

2.2.3. Charging the unit



Danger

When charging the unit, only use the charger specified by the manufacturer or a comparable voltage source. A deviation in the charging voltage can result in damage

2. Safety Instructions

to the device. The device heats up during the charging process. If the device only functions briefly or not at all despite repeated charging, the built-in battery is defective and must be replaced.

2.2.4. Temperatures and Ambient Conditions

The device has been designed for use in harsh environments. Operations outside of the specified conditions may result in damage to the equipment.

Electrical characteristics

Input	5 V DC max, 3 A
Rated capacity	Up to 17.28 Wh
Rated Voltage	3,6 VDC
Number of cells	1
Interface	1x USB-C

Ambient conditions

Ambient temperature when charging the battery	0 to 40 °C (32 to 104°F)
Operating temperature (discharging)	-20 to 50 °C (-4 to 122 °F)
Transport temperature	15 to 25 °C (59 to 77 °F)
Storage temperature	15 to 25 °C (59 to 77 °F)
Ambient humidity	≤ 90 % rH non-condensing

Housing material

Plastic

Protection type	IP66 (EN 60529) *
Weight	0,4 kg
Over voltage category	OVC I
Degree of pollution	3
Usage	indoor and outdoor up to 2000 m a.s.l.

Can also be used in wet locations

Definition of wet locations:

The environment in which water or another conductive liquid may be present and in which it is likely that the resistance of the human body will be reduced by wetting of the contact between the human body and the device and by wetting of the contact between the human body and its environment.

* IP rating applies only when all protective caps are securely in place.

2.2.5. Dimensions

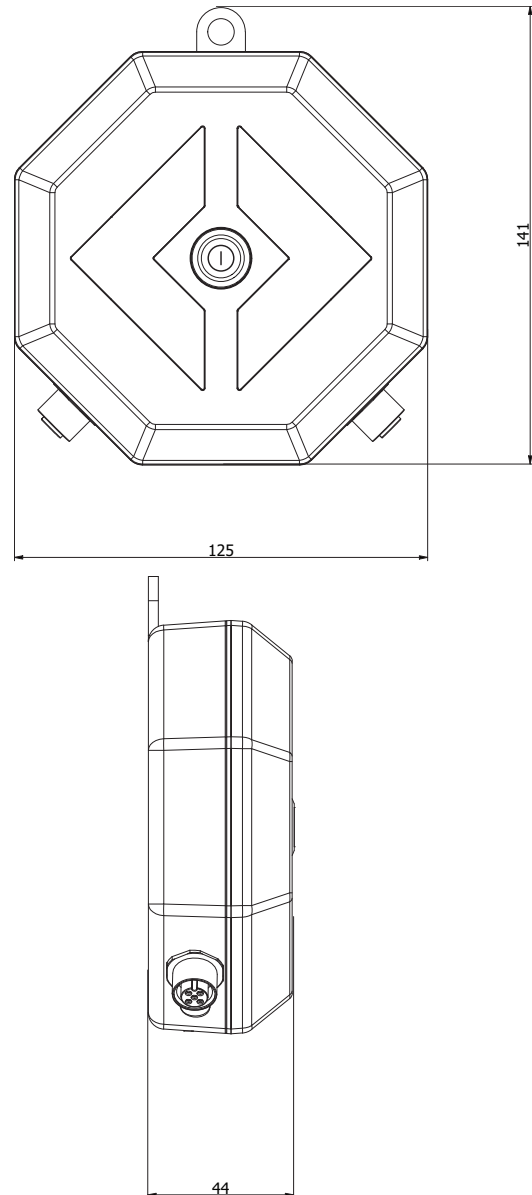
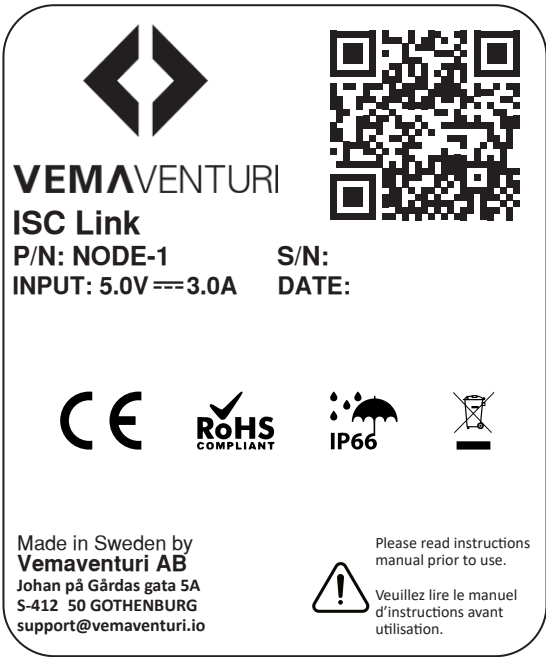


Figure 1: Measurements are displayed in millimeters

3. Product label



Product Label Information

The product label contains regulatory and compliance markings, charging information, the part ID, the device serial number, the manufacturing date, and a QR code linking to the product webpage. The compliance markings indicate conformity with applicable standards, environmental requirements, and protection ratings.

 Indicates that the user shall read the Instructions for Use before operating the device.

 Indicates DC voltage/power supply



Indicates conformity with applicable European Union directives and regulations for safety, health, and environmental protection.



Indicates compliance with the Restriction of Hazardous Substances Directive (RoHS), limiting the use of specific hazardous materials in electrical and electronic equipment.



Indicates protection against dust ingress (dust-tight) and against high-pressure water jets from any direction.



Indicates that the product shall not be disposed of as unsorted municipal waste and must be collected separately in accordance with the Waste Electrical and Electronic Equipment (WEEE) Directive.

4. Application

ISC Link is a compact and easy-to-use tool for monitoring concrete temperature and pressure. ISC Link records temperature and/or pressure data during the concreting process and uploads it to Vemaventuris WebApp. This real-time data helps you track the curing progress and make informed, data-driven decisions. Its simple design minimizes setup time and maintenance, ensuring a smooth monitoring experience for your construction projects.

4.1. Connect device to a project

ISC Link must be connected to a project before it can be used. Connecting to a project ensures the user has physical access to the device and the necessary permissions to associate it with a project.

Steps to connect a ISC Link

1. Turn on ISC Link by pressing and holding the ON/OFF button for three seconds.
2. Device establishes a cloud connection after booting.
3. Follow the appropriate scenario:

Scenario 1: Device not previously connected to a project

1. Press the ON/OFF button three times to enter connection mode.
2. Follow the process from scenario 1.

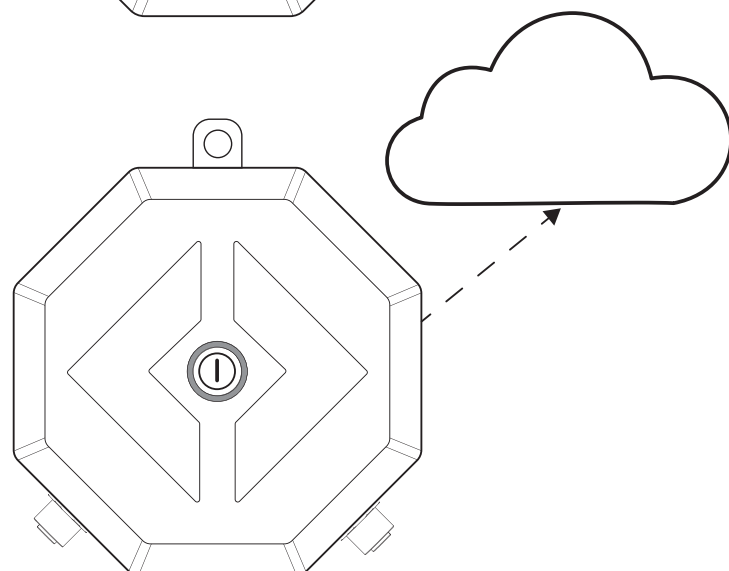
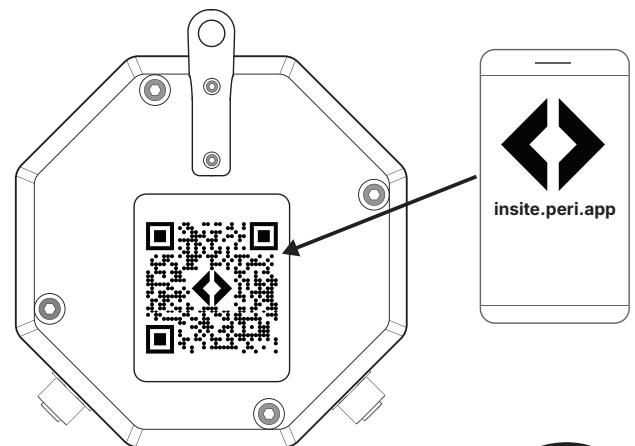
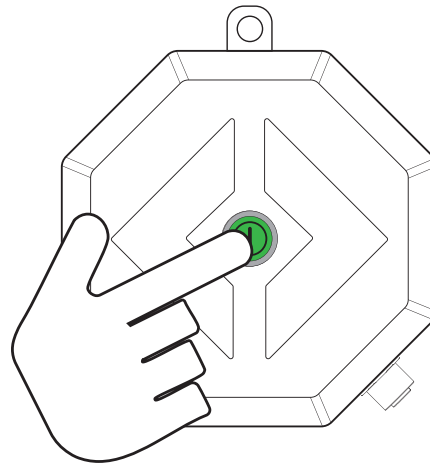
Scenario 2: Device previously connected to a project

1. Press the ON/OFF button three times to enter connection mode.
2. Follow the process from scenario 1.

4.1.1. Updating ISC Link

To initiate an update to the device:

1. Go to the device overview on <https://insite.peri.app>
2. Select the device
3. Click the "update device" button



4.2. Connecting sensors to ISC Link

ISC Link supports two types of sensors: **temperature** and **pressure**.

- You can connect up to 2 temperature sensors (one per channel).
- You can connect up to 8 pressure sensors, with a maximum of 4 per channel.
- Each channel (CH-A and CH-B) supports either:
 - 1 temperature sensor
 - 1 to 4 pressure sensors

4.2.1. Fitting and connecting the temperature Sensors

Each channel (CH-A and CH-B) supports one temperature sensor. To connect sensors, follow the steps below

1. Plug the connector end of the temperature sensor into CH-A or CH-B.
2. Place the measuring end where you want to measure temperature.
3. Secure the sensor in place—for example, by zip-tying it to the rebar.

4.2.2. Fitting and connecting the pressure sensor

Preparation

Check the sensor cable, connector, housing and membrane for damage and ensure that the filling is free of bubbles. Have a drill with a 50 mm hole saw and centre drill, screws and grease (e.g. Vaseline) to hand.

1. Drill the hole for the sensor into the formwork using the hole saw. – Make sure that there is enough space for the sensor housing.
2. Grease the membrane and housing (recommendation: Vaseline).
3. Place the sensor on the formwork and pre-drill the holes.
4. Tighten the sensor with 3 screws.
5. Affix the Node safely and securely near the measuring points.

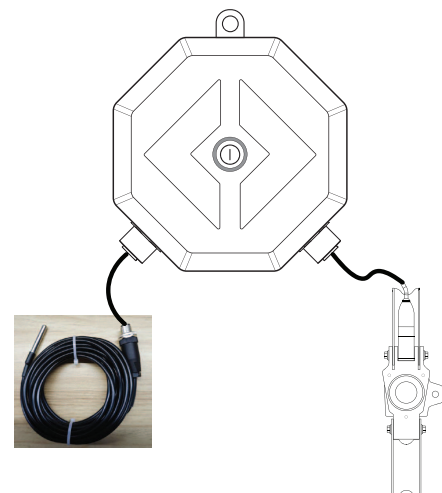
6. Connect the sensor to the PERI bus connection of the Node.
7. Switch on the Node. The measured data from the sensor is received automatically.
8. Switch on the Hub. Measurements can also be taken when the Hub is switched off. The measured values are stored in the Node. The Hub receives the stored values as soon as it is switched on.
9. Document the node number and position or installation heights of the pressure sensor in the formwork.

4.2.3. Installing the sensor group

1. Determine and mark the positions of the sensors.
 - The distance between the sensors should be approx. 1.5 m for an 8-m-high wall.
 - Position the sensors in the lower part of the formwork.
 - An additional series of sensors will increase the accuracy.
2. Affix the Node safely and securely near the measuring points.
3. Connect the sensors to each other using XLR-cables and splitters as needed.
4. Document the Node number, quantity and positions or installation heights of the pressure sensors in the formwork.

4.2.4. Deinstallation

1. Disconnect the bus cable connector from the Node and pressure sensor.
2. Disconnect the connecting cables between the sensors.
3. Unscrew the sensors from the formwork.
4. Clean the housing and membrane. – Do not use pointed or sharp objects.



5. Connectivity and upload process

The device connects to the Cloud via LTE to upload data.

- It wakes up every 15 minutes to log a temperature measurement.
- It attempts to upload these logged measurements every hour.

If Cloud connection fails:

- The device will continue logging locally.
- To save battery, it will not keep trying to connect.
- Instead, it will wait 12 hours (rounded down) before trying again.

If you press the button to force-synchronize the device

- The device will try to connect for up to 5 minutes.
- If this fails, it will wait 12 hours before trying again (unless another force connect is triggered).
- If the upload is successful, the device will return to the 1-hour upload schedule.

This behavior prevents unnecessary battery drain during Cloud outages or poor coverage (e.g. in tunnels).



You can also extract measured data and the device ID by connecting the device to a computer via the USB-C port.

6. LED indications

The device uses a single button with an LED indicator to show its status. The table below explains what the unit is doing.

LED Behaviour		Event
	steady green	Device is powered on and connected to a project
	Flashing green	Device is in connection mode and is waiting to connect to a project
	Pulsing green	Charger is connected and unit is charging, When fully charged LED will be steady green
	Flashing green	New firmware is being downloaded (after initiated on the WebApp)
	Flashing red	Firmware update has failed
	No light	Device is in sleep mode Device is powered off (press button once to see if it wakes up or is powered off)

Action	LED Behaviour		Event
Press and hold button (When device is powered OFF)		Light fades up green	Device is powered ON, connects to cloud
Press button once		Light turns on briefly, then off again	Wakes device from sleep, force connects to cloud and uploads data
Press 3 times quickly (When device is powered ON)		Flashing green	Device enters connection mode and can be connected to a project
Press and hold button (When device is powered ON)		Light fades down green	Device is powered OFF

7.1. Cleaning

- Wipe down the plastic housing with a damp (not wet) cloth. Water must not be allowed to get into the connections.
- Immediately remove any concrete contamination before it hardens.



- Do not use abrasive or aggressive cleaning agents or solvents (e.g. scouring powder, thinner or gasoline).
- Do not remove stubborn dirt with sharp-edged objects.
- Do not wash units under running water or immerse them in water.
- Do not use a high-pressure cleaner.



Take defective or damaged units out of operation immediately.

7.2. Maintenance

The device are virtually maintenance-free. Regular inspections ensure operational safety and functional integrity. The units must not be opened.

Before each use

- Check the cables for external damage.
- Check the housing for damage.
- Check the connection sockets for damage and dirt.

Annually and after a long period of storage

- Function test and electrical measurement. In Germany, the DGUV inspection is mandatory.
- Check the type plate, inscriptions and symbols on the housing to ensure that they are legible.

7.3. Battery

Battery life depends on usage and the number of charge and discharge cycles as well as the ambient temperature.

Have used and defective batteries replaced by a service workshop designated by the manufacturer. Only batteries that have been tested and approved by the manufacturer may be installed.

7.4. Repairs

Specific skills and knowledge of the unit are required to carry out repairs. Therefore, this work may only be carried out by qualified specialists after consultation with the manufacturer

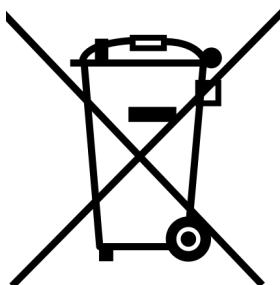
8. Recycling and disposal

8.1. Disposal



Warning

The units must be disposed of and recycled in accordance with local environmental protection regulations.



9. Manufacturing info



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