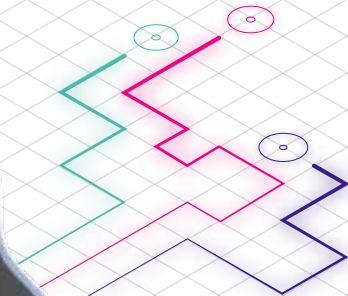# Signal Sensor

UNLOCK THE POWER OF CONVERGE

Safety instructions

Warnings

- ◆ This device is intended for use as a construction monitoring sensor and not for use in domestic or commercial settings
- ◆ The connection of incompatible devices to the Signal Sensor connector may affect compliance or result in damage to the unit and invalidate the warranty
- ◆ This product should only be connected to thermal, tilt or Strain-gauge tails distributed by Converge

Instructions for safe use

- ◆ Avoid using metal fixings, this may impair the functionality and safety of the device
- ◆ Install the device away from areas which may be saw cut, cored or drilled through
- ◆ Do not attempt to open or modify the device, any modifications may impair the functionality and safety of the device
- ◆ Do not store at a temperature greater than +45°C or lower than -20 °C
- ◆ Unless attached to a sensor tail, keep the cap on the connector at all times
- ◆ Avoid applying high pressure or impact to the connector (for example by standing on it)

Converge Signal

Converge Signal is the latest in wireless concrete-sensing technology, capable of being fully embedded in concrete. The sensor data are transmitted via Bluetooth to our dedicated smartphone app or Signal Live Gateway. Converge Signal boasts industry-leading range, allowing you to instantly collect measurements while onsite. Signal works with both Android and iOS devices.
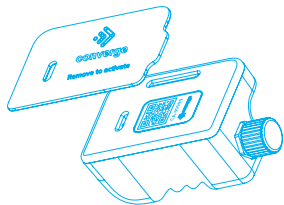
Getting Started - App Installation

Download the "Converge Sensors" app on your device scanning the QR codes below and login with your user details. If you have issues with your account please contact help@converge.io
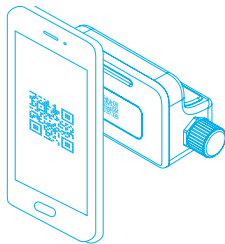

3

Using the sensors

STEP 1

Remove the sleeve to activate the sensor: once removed, the LED will begin to flash every two seconds.

IMPORTANT:
Keep the connector cap on at all times unless attaching a tail. This is to protect the connector from damage. The connector can be damaged by impact, for example if the device is dropped onto a hard surface.
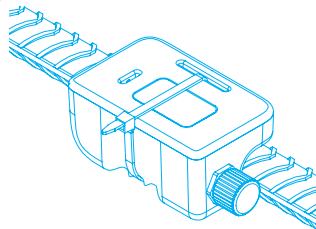
STEP 2

Register the sensor using the Converge mobile app: scan the QR code using the app and give your sensor a name.

Select which pour you are monitoring on the Converge Platform, or create a brand new one before starting the registration process.
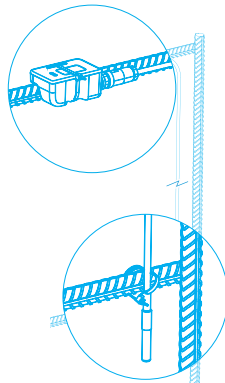
STEP 3a

Install the sensor in the pour.
Body only:
1. Affix the device to the rebar using a wire or cable tie. If not using a thermal tail, do not remove the cap from the connector.
2. For best range, place the sensor less than 100mm from the concrete surface, with the QR code facing up.
3. Once covered by concrete, the sensor should have 5m wireless range, so make sure you are able to connect to it using your Android or iOS device.
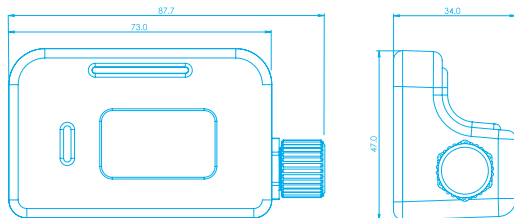
STEP 3b

Body with tail:
1. Install the body (See step 3a).
2. Run the wire along the underside of the rebar, fixing the probe at the desired measurement location. Make sure the sensor is not touching any rebar or any other surface.

Technical Specification

Bluetooth Version:	Bluetooth 5.1: Bluetooth Low Energy (BLE) plus NFC
RF Power:	+8dBm
Wireless range:	8m when submerged into 100mm of concrete*
Battery:	Lithium Shelf-life of 4 years / 2 years life when active
Temperature sensor:	Accuracy ±0.2°C
Measurement frequency:	once every 20 mins
Operation range:	-20 to +85 °C
IP Rating:	IP68 (not certified)
Memory:	1Mb internal flash memory
Storage capacity:	10 year of data depending on measurement frequency
Dimensions:	87.7 x 47 x 34 mm
Weight:	Standalone unit: 110 g Single unit with 3m thermal probe: 195 g
Battery chemistry:	3V Lithium Manganese Dioxide Battery cell

STEP 4

Collect temperature data using the Converge App on your device:
Once the concrete is poured:

◆ Make sure the Converge App is installed on your device.
◆ Stand close to the area where the sensors are installed (no further than 5 m from the sensor).
◆ Activate Bluetooth on your device and open the Converge app.
◆ Check the bottom banner in the app to monitor data collection from the sensors.
◆ Ensure the app is open and in the foreground continually during data collection.
◆ Collect data at least once a day.
◆ Check the results on the platform

Sensor Dimensions

EMC Compliance Statements

HARMONISED EUROPEAN STANDARD

◆ This product is in conformity with the essential protection requirements of EU Directive 2014/53/EU on the approximation of the laws of the Member States relating to electromagnetic compatibility.

◆ This product has been tested and found to comply with ETSI EN 301 489-17 V3.2.0* (ETSI EN 301 489-1 V2.1.1) in line with the guidance in ETSI EN 303 446-1 V1.2.1*.

JAPAN CERTIFICATION
This product has been tested and complies with JIT/MIC Radio–Japanese Radio Law Testing of BTLE radio: Article 2 paragraph 1 item (19) of the Ordinance concerning Technical Regulations Conformity Certification etc. of Specified Radio Equipment*

MALAYSIA CERTIFICATION
This product has been tested and complies with the SIRIM standards for radio technology products in Malaysia. SIRIM Certification (Malaysia) based on: Documentation Submission and In-Country Testing

AUSTRALIA AND NEW ZEALAND CERTIFICATION
This product has been tested and complies with the regulatory compliance marc (RCM) requirements for market access in Australia.

SINGAPORE CERTIFICATION
This product has been tested and complies with the IMDA standards for market access in Singapore.

HONG KONG CERTIFICATION
This product has been tested and complies with the Hong Kong Certification Body Accreditation Service (HKAS) standards for market access in Hong Kong.

CHINA CERTIFICATION
This product has been tested and complies with the China National Accreditation Service for Conformity Assessment (CNAS) standards for market access in China.

Converge Signal contains a TMP117 temperature sensor from Texas Instruments which is 100% tested on a production setup that is NIST traceable and verified with equipment that is calibrated to ISO/IEC 17025 accredited standards.

Converge Signal is not recyclable and should not be disposed of in general household or commercial waste or in landfill.

CE ⚠ 🗑 FC