

Converge Signal Long Range[®]



PRODUCT DESCRIPTION

Converge Signal Long Range[®] is a fully embedded wireless sensor built for concrete maturity monitoring and real-time concrete temperature monitoring. When connected with the Converge Gateway: Long Range[®], it supports concrete monitoring across distances of up to 300 metres (1,000 ft), making it ideal for large-scale and mass concrete monitoring projects.

Designed for demanding environments, this concrete curing sensor features an IP68-rated enclosure that is waterproof, weatherproof, and fully embeddable. Its high-accuracy digital sensing exceeds ASTM C1074 requirements, ensuring reliable data throughout the curing process.



FEATURES & BENEFITS

- **Long-Range Communication** – Collects data from sensors up to 300m (1,000ft) away.
- **Real-Time Monitoring** – Provides continuous temperature and maturity data.
- **Multi-Point Measurement** – Monitors up to four temperature locations per device.
- **High Accuracy** – Delivers $\pm 0.5^{\circ}\text{C}$ temperature measurement accuracy.
- **Automated Data Collection** – Eliminates the need for manual temperature readings.

APPLICATIONS

- Bridges and transport infrastructure
- Tunnels and underground structures
- Data centres and industrial facilities
- Civil infrastructure projects
- Commercial concrete structures

PACKAGING & AVAILABILITY

Code	Description
140288	Signal Long Range CE
135849	Single-Probe Thermal Tail (SPTT) - 1m Long
135850	Single-Probe Thermal Tail (SPTT) - 3m Long
135851	Single-Probe Thermal Tail (SPTT) - 10m Long
135852	Single-Probe Thermal Tail (SPTT) - 15m Long
135853	Multi-Probe Thermal Tail (2 Probe) (MPTT) - 2m Long
135854	Multi-Probe Thermal Tail (2 Probe) (MPTT2) - 4m Long
135855	Multi-Probe Thermal Tail (2 Probe) (MPTT2) - 4.5m Long
135856	Multi-Probe Thermal Tail (2 Probe) (MPTT2) - 6m Long
135857	Multi-Probe Thermal Tail (2 Probe) (MPTT2) - 10m Long
135858	Multi-Probe Thermal Tail (3 Probe) (MPTT2) - 8m Long
135859	Multi-Probe Thermal Tail (3 Probe) (MPTT2) - 5m Long
135860	Multi-Probe Thermal Tail (3 Probe) (MPTT2) - 12m Long

TECHNICAL SPECIFICATIONS

SAFETY & HANDLING

- Avoid installing in areas that may be saw cut, cored, or drilled after concrete placement.
- Do not use metal fixings that may interfere with sensor performance.
- Do not open, modify, or tamper with the device.
- Store between -10°C and $+55^{\circ}\text{C}$ when not in use.
- Protect the device from physical damage prior to installation.

COMPLIANCE

Converge Signal Long Range[®] supports industry-recognised concrete maturity monitoring practices and delivers temperature measurement accuracy that exceeds the requirements for maturity testing applications.

- **ASTM C1074** – Temperature measurement accuracy of $\pm 0.5^{\circ}\text{C}$ exceeds the ASTM C1074 requirement of $\pm 1.0^{\circ}\text{C}$ for maturity-based concrete strength estimation.

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TECHNICAL PROPERTIES

Property	Typical Value
Description	Embedded Long Range Concrete Sensor with Connector
Tail Options	Single-Probes & Multi-Probes Customisable lengths
Device dimensions (LxWxH)	102x64x26mm + Connector lead
Weight	110g (3.88 oz)
IP Rating	Outdoor, IP68
Operational reading range	-40°C to +85°C (-40 °F to +185 °F)
Body Measurement Accuracy	±0.2°C [-20°C to 80°C typ] ±0.5°C [-40°C to 85°C typ] (±0.36 °F [-4 °F to 176 °F typ] ±0.9 °F[-40 °F to 257 °F typ])
Tail Measurement Accuracy	±0.5°C [-10°C to 85°C typ]
Measurement Frequency	Every 20 mins [Default] Configurable [By Request]
Bluetooth Range	Up to 10m (30ft)
Range	300m (1000ft)
Operational Frequency	902 MHz to 928 MHz [US] 863 MHz to 870 MHz [UK/EU/ME]
Active battery life	4 months
Maximum Recommended Shelf Life	2 years
Ideal Storage Conditions	Indoor, 20°C to 30°C (68°F to 86°F)
Humidity	0 to 100%RH
Compatible Gateways (sold separately)	Converge Gateway: Long Range (Previously Helix Hub v2)
Applicable Products	Converge ConcreteDNA
Maximum depth	Maximum of 100mm (4") concrete cover over sensor

INSTALLATION INSTRUCTION

- Sensor Placement** - Secure the Signal Long Range[®] device to reinforcement using the integrated lock-in attachment notches.
- Thermal Tail Positioning** - Position the thermal tail probe(s) at the required monitoring locations within the concrete element.
- Concrete Pour** - Fully embed the sensor within the concrete, ensuring maximum concrete cover over the sensor does not exceed 100mm.
- Gateway Configuration** - Install and activate the Converge Gateway: Long Range[®] within the communication range of the embedded sensors.
- Data Collection** - Connect to the ConcreteDNA[®] platform to automatically collect and monitor temperature and maturity data.
- Verification** - Confirm sensor communication via the gateway or Bluetooth connection prior to completion of the pour.

