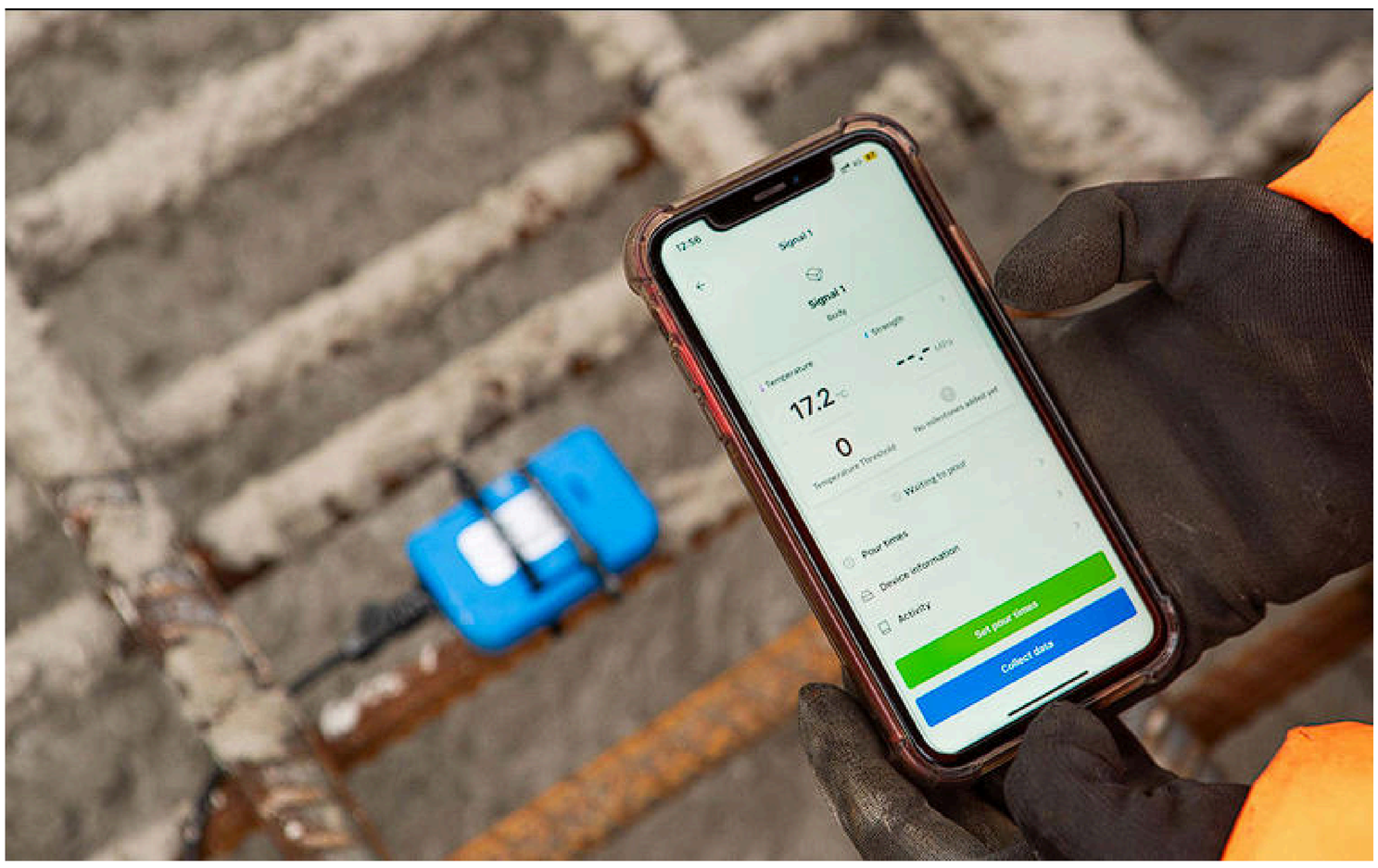
TECHNICAL DATA SHEET

Converge Signal®

PRODUCT DESCRIPTION

Converge Signal® is an advanced fully embedded wireless sensor designed for monitoring concrete strength and temperature in real time. Built for demanding Australian and international construction environments, Signal® enables faster, safer, and more sustainable construction by providing reliable data through the ConcreteDNA® platform.

By reducing reliance on traditional cube testing, Signal® empowers contractors to accelerate project timelines, minimise safety risks, and improve compliance, all while supporting the adoption of low-carbon concrete mixes.



FEATURES & BENEFITS

- **Fully Embedded Design** – Provides uninterrupted monitoring and eliminates the risk of sensor damage.
- **Wireless Connectivity** – Bluetooth® 5.1 + NFC with up to 15 m range.
- **High Accuracy** – Temperature accuracy of ±0.2 °C.
- **AI-Driven Predictions** – Forecast curing times and strike formwork up to 40% faster.
- **Data Confidence** – Generate audit-ready compliance reports for safety and quality assurance.
- **Durable Construction** – IP67-rated enclosure for harsh site conditions.
- **Supports Sustainability** – Optimises curing in low-carbon mixes (e.g., GGBS blends).

APPLICATIONS

- **High-Rise & Commercial Buildings** – Accelerates formwork strike and post-tensioning schedules safely.
- **Bridges & Viaducts** – Provides reliable monitoring for thermal differentials and compliance in critical structural pours.
- **Tunnels & Underground Works** – Enables accurate curing assessment in confined, complex environments.
- **Transport Infrastructure** – Roads, highways, and rail projects requiring consistent curing verification.
- **Mass Concrete Pours** – Monitors thermal gradients to mitigate risks of cracking in foundations, dams, and retaining walls.
- **Precast & On-Site Casting Yards** – Ensures quality control in controlled environments and provides traceable curing records.
- **Low-Carbon Concrete Projects** – Validates curing and performance of mixes with GGBS and other alternative binders

TECHNICAL SPECIFICATIONS

STORAGE & HANDLING

- Store in original packaging in a dry, cool location.
- Avoid mechanical impact, moisture ingress, or prolonged exposure to direct sunlight.
- Ensure batteries are not subjected to high temperatures.

COMPLIANCE

Converge Signal® meets international standards and certifications for electromagnetic compatibility and wireless operation.

- **Australia & New Zealand**: RCM certified

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TECHNICAL SPECIFICATIONS

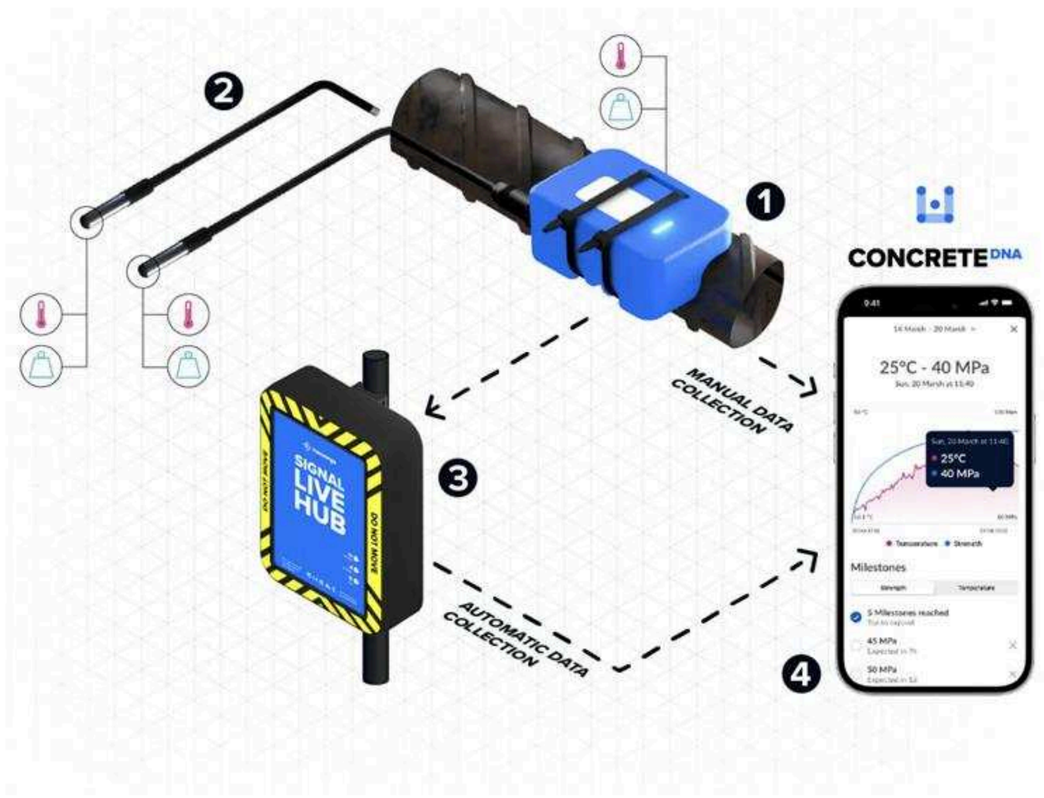
TYPICAL PHYSICAL PROPERTIES

Specification	CSS-210 (No Tail)	CSS-211 (Tail Compatible)
Description	Temperature device with no tail option	Temperature device with option to attach probes
Device Dimensions (L×W×H)	74 × 48 × 35 mm (2.9 × 1.9 × 1.4 in)	83 × 48 × 35 mm (3.2 × 1.9 × 1.4 in)
Weight	111 g	114 g
IP Rating	IP67 (Not certified)	IP67 (Not certified)
Operating Temperature	-30 °C to +85 °C (-22 °F to +185 °F)	-30 °C to +85 °C (-22 °F to +185 °F)
Temperature Accuracy	±0.2 °C	±0.2 °C
Enclosure Materials	Nylon PA6; Grip: Nylabond® 6091-70A Black	Nylon PA6; Grip: Nylabond® 6091-70A Black; Connector: SA8 Anodised Aluminium
Bluetooth Version	v5.1	v5.1
Wireless Range	Up to 15 m (49.2 ft)	Up to 15 m (49.2 ft)
Measurement Frequency	Every 20 minutes	Every 20 minutes
Max RF Power	+21 dBm	+21 dBm
Battery Type	Lithium Manganese Dioxide, 3 V (non-replaceable)	Lithium Manganese Dioxide, 3 V (non-replaceable)
Battery Capacity	1700 mAh, 5.1 Wh	1700 mAh, 5.1 Wh
Active Battery Life	At least 6 months	At least 6 months
Shelf Life	2 years	2 years
Compatible Tails	N/A	Single Probes: 3 m (10 ft); Multi-Probes: 2 m (6 ft); lengths up to 10 m (32 ft) available
Applicable Products	ConcreteDNA®	ConcreteDNA®

SAFETY

- Device is non-hazardous and safe for handling.
- Always follow site-specific electrical and safety protocols during installation.
- Dispose of responsibly through authorised e-waste channels.

INSTALLATION GUIDELINES



1. **Signal Sensor™**
   - Register the sensor on the ConcreteDNA® app.
   - Attach to rebar of the pour using cable ties.
   - Begins measuring temperature and strength immediately.ace cradles on subbase prior to slab pour, ensuring alignment with contraction joints
2. **Multi-Probe Thermal Tail™** (optional)
   - Connect the tail to your Signal Sensor™.
   - Register via the ConcreteDNA® app.
   - Place probes at desired measurement points for multi-location monitoring.
3. **Signal Live Hub™**
   - Turn on and mount the hub within 15 m of the sensor (e.g., hoarding or elevated location).
   - Automatically collects and transmits data from Signal Sensor™ to ConcreteDNA®.
4. **ConcreteDNA® Mobile & Web App**
   - Use Bluetooth to manually collect data or view automatic hub transmissions.
   - Access real-time temperature, strength, thermal differentials, and AI milestone predictions.

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PACKAGING & AVAILABILITY

Product Code	Description
134653	Signal Live Hub (Hardware)
134654	Signal Live Hub (Software Annually)
135847	Signal Sensor – No Connector
135848	Signal Sensor + Connector
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
132115	Calibration Analysis & Report for 1 Mix (required for strength monitoring, not for thermal only)

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