

# Orbit K

## Wireless Transmitter for Maturix® Temperature and Strength Monitoring



### Overview

The Orbit K is a wireless transmitter for temperature measurements using type K thermocouples. It is the industry's most cost-efficient solution for real-time monitoring of the curing of concrete.

Install the thermocouple, connect it to the Orbit K and it will automatically start sending the temperature data continuously. Orbit K uses Sigfox, the world's largest IoT network, which offers a longer range than WiFi and Bluetooth. The data is transmitted to the cloud through nearby Sigfox antennas or gateways.

The temperature readings are available in the Maturix® Web Portal. The concrete strength is estimated based on the temperature history using the Maturity Method (ASTM C1074). All of this happens automatically and in real-time, and you can access the data from anywhere.

Placed in a tough box, the Orbit K is designed to withstand the harsh environment at construction sites. The transmitter can be reused again and again as only the economical thermocouple is embedded into the concrete.

### ✓ Features

- Measure temperature at any position with type K thermocouples
- Long-range wireless communication
- Weather-resistant and rugged design
- Low power consumption for extended usage
- Built-in high capacity lithium batteries
- Multiple mounting slots for easy installation
- LED status indicator

### 👍 Benefits

- Real-time insight into the curing of concrete
- Remote monitoring from any device with internet
- Cost-efficient temperature & strength monitoring
- Cloud software for easy reporting and data export

### Maturix® Temperature and Strength Monitoring

Maturix combines durable hardware, smart wireless technology and user-friendly software into a powerful concrete monitoring tool. The system provides in-depth insights into the curing status and shows real-time temperature, maturity and strength data.

## Specifications

### Temperature Measurements

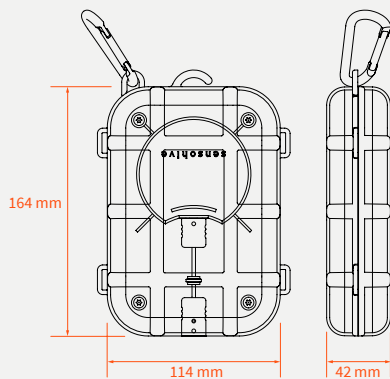
Range	Type K thermocouple: -200 to 1260 °C (-328 to 2300 °F) <sup>1</sup>
Tolerance	Type K thermocouple: ±1.5 °C (±2.7 °F) <sup>2</sup> Internal digital sensor: ±0.3 °C (±0.54 °F)
Resolution	±0.1 °C (±0.18 °F)
Thermocouples Supported	Type K (Ni-Cr / Ni-Al)

### Data Transmissions

Transmission Interval	Cable connected: Once every 10 mins <sup>3</sup> No cable connected: Once every 6 hours Downlink: Once every week
Network	Sigfox
Radio Zones	RC1, RC7 (Sigfox Ready, Class 0) RC2, RC4
Wireless Signal Range (using Sigfox Gateway)	Up to 3 km (1.86 mi) <sup>4</sup>

### Use and Storage

Temperature	-30 to 50 °C (-22 to 122 °F)
Humidity	0 to 100 %RH
Ideal Storage Conditions	Indoor, 20 to 30 °C (68 to 86 °F)



### Mechanical Specifications

Dimensions (L x W x H)	164 x 114 x 42 mm (6.46 x 4.49 x 1.65 in)
Weight	323 g (11.39 oz)
Materials	ABS plastic
Battery Type	Li-SOCl <sub>2</sub> , 3.6 V, 5.400 mAh (non-replaceable) <sup>5</sup>
Socket Type	Miniature, type K, female
LED	Single color LED
Waterproof	Yes

### Certifications

CE, Radio Equipment Directive (RED), RoHS

### Data Access & Analysis

Maturix® Precast  
Maturix® In-situ  
Sensohive App  
API

### Part No.

### Models

20122-1 + 32150	Orbit K (Sigfox RC1) + tough box
20122-2 + 32150	Orbit K (Sigfox RC2) + tough box
20122-4 + 32150	Orbit K (Sigfox RC4) + tough box
20122-7 + 32150	Orbit K (Sigfox RC7) + tough box

### HS Code

8517 6990 00

<sup>1</sup>Dependent on type K thermocouple. Max. temperature difference between device and thermocouple measurement is -200 °C and +1260 °C.

<sup>2</sup>The tolerance depends on the type K thermocouple. Standard tolerance is around ±2.2 °C. We offer high-quality type K thermocouple wire probes, ±1.5 °C, Class 1.

<sup>3</sup>Learn more about changing the intervals: [maturix.com/transmissions](https://maturix.com/transmissions).

<sup>4</sup>Depending on environment. Learn more: [maturix.com/sigfox](https://maturix.com/sigfox).

<sup>5</sup>Battery life depends on operating temperature and frequency of transmissions. Standard configuration gives a lifetime of up to 8 months with thermocouple inserted 24/7. We guarantee 20.000 measurements or 8 months operation (whichever comes first).