WEXS-BLE-CEL Gateway

Multi-wireless IoT gateway with LTE-M/NB-IoT and WEPS25, WETS25 & WEPS77 Bluetooth Sensors.

Bluetooth®
LTE-M
NB-IoT

Features

WIRELESS CONNECTIVITY

Gather BLE sensor data with our WEPS25, WETS25, or WETS77 Bluetooth Sensors and then send it over low power LTE-M / NB-IoT cellular networks to the cloud.

CERTIFIED FOR DEPLOYMENT AROUND THE WORLD

Regulatory approvals for FCC (USA), ISED (Canada), CE (EU), UKCA, and cellular approvals PTCRB, GCF, AT&T & Verizon certifications.

CUSTOM APPLICATION DEVELOPMENT

Leverage the Phoenix Sensors WEXS-BLE-CEL Firmware to develop your own specific Zephyr applications.

PERSONAL SUPPORT AND SERVICES FOR YOUR IMPLEMENTATION

Phoenix Sensors support brings expert assistance to your integration, working with you and our engineering team to reduce your time to market.

The **Phoenix Sensors WEXS-BLE-CEL Gateway** captures data from our WEPS25, WETS25 & WETS77 Bluetooth Sensors and sends it to the cloud via a global low power cellular (LTE- M/NB-IoT) connection.

Develop your BLE-to-Cloud Applications using Python

Application Development Environment:

- VS Code development environment to develop Python applications for Monsense hardware
- Sample Python scripts for BLE, MQTT, HTTP, and LWM2M connectivity
- Advanced deployment tools including mobile app (Android and iOS) to update device firmware, as well as engineering services support

Flexible Power Options

Power the gateway with an external USB power supply with product options for a rechargeable backup battery in the event of a short-term power outage. Long-term battery options available.

Antenna Choice

Use low-cost internal LTE and Bluetooth antennas or choose the external antenna variants to suit your application environment.

Compatible Bluetooth Sensors

- WEPS25 Bluetooth Pressure Transducer
- WETS25 Bluetooth Temperature Transducer
- WEPS77 Bluetooth Combination Pressure & Temperature Transducer

- Supports Monsense Device Management
- LTE-M/NB-IoT radio via Sierra Wireless HL7800 module (Chipset: Altair ALT1250)
- LTE bands 1, 2, 3, 4, 5, 8, 12, 13, 20, 28
- Nordic nRF52840 – Bluetooth v5, Coded PHY (Long range), 1MPHY & 2MPHY support
- Onboard Cortex-M4F Microcontroller – 32-bit @ 64 MHz, 256 KB of RAM, 1 MB internal flash, 8 MB QSPI
- NFC Support and integrated antenna
- Certifications – FCC, ISED, CE, UKCA, Bluetooth SIG plus PTCRB, GCF and End Product certified – AT&T and Verizon
- Antenna options – Unique integrated antenna variant plus external variant with SMA connectors
- Battery backup options for mains power outage needs
- Multi-purpose button and three configurable LEDs
- Compact form factor: 110.28 mm x 99.16 mm x 35.32 mm

Connect to our WEPS25, WETS25, WETS77 Bluetooth Sensors

Industrial IoT

Cold Chain Monitoring

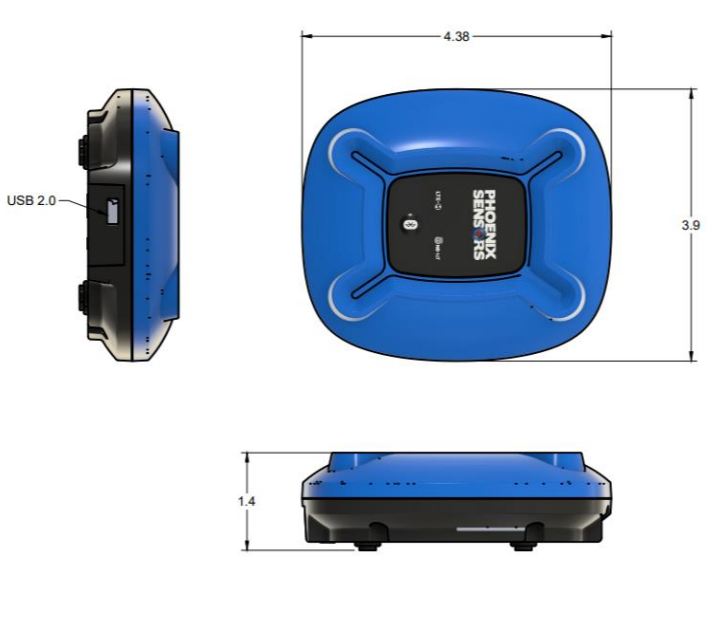
Smart Buildings

Transportation

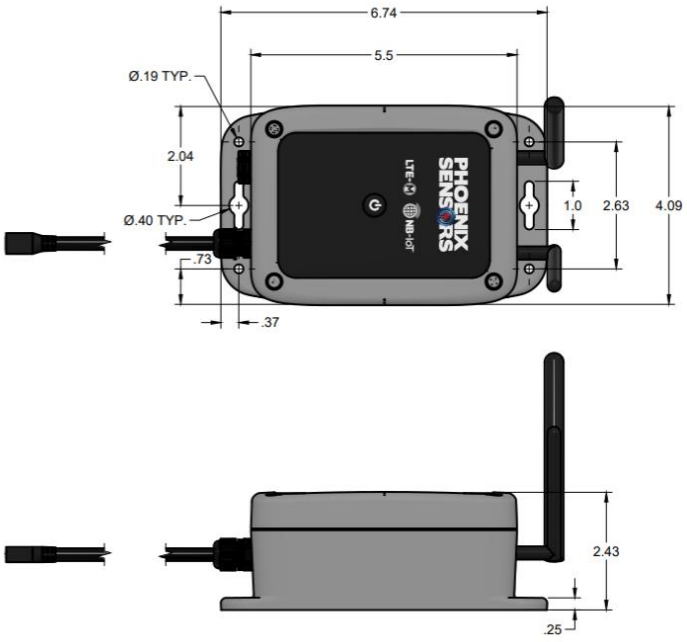
WEXS-BLE-CEL GATEWAY SPECIFICATIONS

Wireless	Bluetooth	▪ Bluetooth 5.0 – Single mode ▪ 4x Range (CODED PHY support) – Bluetooth 5.0 ▪ 2x Speed (2M PHY support) – Bluetooth 5.0 ▪ LE Advertising extensions – Bluetooth 5.0 ▪ Concurrent master, slave ▪ Diffie-Hellman based pairing (LE Secure Connections) – Bluetooth 4.2 ▪ Data packet length extension – Bluetooth 4.2 ▪ Link Layer Privacy (LE Privacy 1.2) – Bluetooth 4.2 ▪ LE Dual Mode Topology – Bluetooth 4.1 ▪ LE Ping – Bluetooth 4.1
	Cellular	▪ Multi-band cellular operation for world-wide operation ▪ Category LTE M and category NB-IoT support ▪ Power class 3 ▪ Sensitivity: LTE M: -105 dBm ▪ Sensitivity: NB-IoT: -114 dBm
Compute	MCU	Nordic nRF52840 Cortex-M4F
Device Programming	Tools required	TC2030-CTX 6-Ping Legged TC2030 Plug-of-Nails™ cable
Memory	RAM	256 KB
	Onboard Flash	1 MB
	Additional Storage	SD card support with Zephyr board file ***(SD card not included)***
External Interfaces	USB	1x USB 2.0 Host
	SD Card	1x MicroSD slot (SDHC, SD Card 2.0) for additional external storage
Physical	Dimensions	110.28 mm x 99.16 mm x 35.32 mm
Electrical	Input Voltage	4.35-5.5V (standard USB power)
Accelerometer	Sensitivity	±2g/±4g/±8g/±16g dynamically selectable full scale
	Input	I2C
NFC	Specification	13.56 MHz, Data rate 106 kbps, NFC Type2 and Type 4 tag emulation
Temperature	Operating Range	-40° to +80° C *(non-battery backup version)*
Power	Battery Backup	Lithium Ion 18650 size 2600 mAh standard capacity Built-in protection circuit module (PCM)
Certifications	Regulatory	FCC (US), ISED (Canada), CE (Europe), UKCA (UK)
	Industry	PTCRB, GCF
	Carrier	AT&T and Verizon

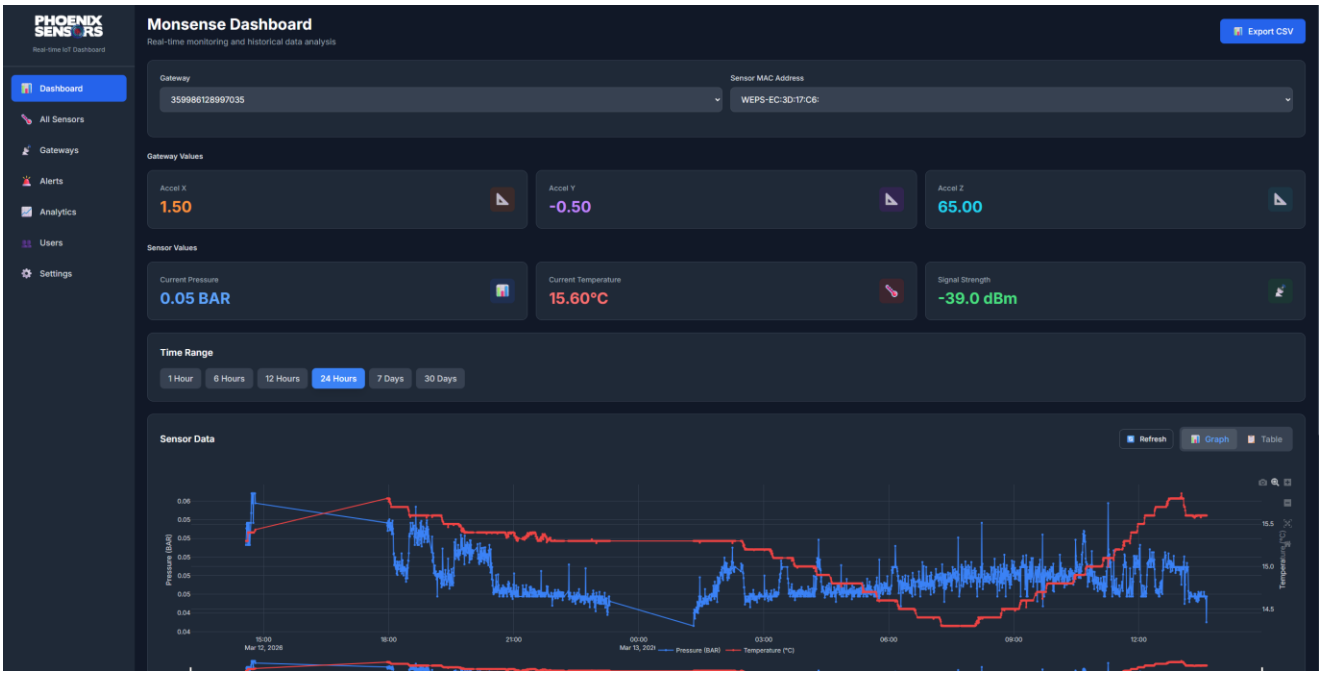
Product Dimensions



Standard Enclosure



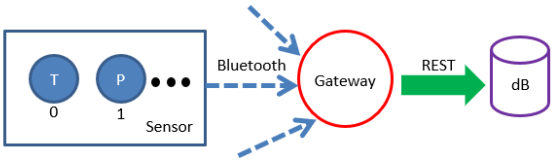
Industrial Enclosure



Remote Device Management Platform

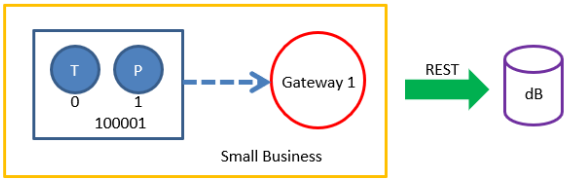
Monsense Device Manager expands our world class hardware with software services that support key device management workflows. Product developers benefit from a cohesively designed hardware + software solution ensuring robust connectivity is maintained in the field. Monsense Device Manager will continue to grow alongside our products ensuring compatibility across the ecosystem. Get started with our gateway and sensor open development devices today.

A sensor can be made up of 1 or more devices. Each device can read the Temperature, Pressure, or Humidity. Each Gateway can read and upload the data from 1 or more sensors.



The first sensor device is index '0'. The second is index '1', etc.

For example: We have a customer called 'Small Business'. They have one gateway, called 'Gateway 1'. This gateway has 1 dual sensor (Temperature and Pressure). The sensor has MAC address: 100001.



Why Device Management?

Control your devices

Remotely manage device parameters and monitor performance, keeping your IoT-driven services and revenue streams online.

Deliver end-to-end solutions

View and organize large numbers of devices to quickly build and maintain IoT solutions for your enterprise customers.

Cut the cost of ownership

Reduce time-to-market with pre-provisioned devices, remotely apply software updates and rapidly scale up your solutions.

Ensure your devices are secure

Remotely deploy software updates to your fielded devices, allowing rapid response to the accelerating pace of security attacks.

Keep your devices compliant

Ensure devices are configured the way you need to keep your valuable data streams online.

A path to scalability

API-based access to devices reduces the need for on-site assistance by automating management of a large number of IoT devices.

Supported Features

- Fleet Management
- Provisioning
- Monitoring & Alerts
- Software Management
- Security

PHOENIX SENSORS