RTO | RealTime Ops

LoRaWan® Solutions Create Connected Construction Sites

Connected Construction and Concrete Monitoring with MultiTech Conduit

When a remote monitoring company with an eye toward creating digitized and connected construction sites decided to develop concrete sensors, they turned to RTO. The organization - a leader in IoT solutions that combines state-of-the-art software and hardware to push the boundaries of innovation - knew that they needed an IoT gateway capable of delivering real-time information over cost-effective low power wide area networks. That's when RTO, a top MultiTech resale partner, presented them with LoRaWAN® networking solutions that were well suited to their needs.

The Challenge | Monitoring Concrete Curing Remotely And Precisely

As everyone in construction already knows, buildings require a strong foundation. As technology advances, and the climate changes, the process for building those foundations must evolve.

To create the strongest concrete possible requires monitoring a number of key factors that can affect the curing process; such as temperature, strength, relative humidity, and evaporation rate. These factors, and others, can make monitoring concrete as it dries incredibly challenging.

The thickness of the concrete — and impenetrability in its hardened form — makes it difficult for sensors to transmit signal data. Similarly, as the concrete hardens, sensors become difficult to retrieve, and attempting to disturb or displace the concrete can and often affects measurements.

The Solution | MultiTech Conduit Allows for Scalable Sensor Data Transmission

Using MultiTech Conduit, a configurable and scalable gateway for industrial IoT applications, a sensor has been developed that can transmit data wirelessly and in real-time.

Multi-point sensors are deployed throughout the concrete slabs to constantly monitor the each and every key variable - specifically the temperature differential - and send data via wireless technology to cellphones and tablets used by the construction crew.

By monitoring these variables and then using software to analyze and convert the measurements, the construction crew can gather information about the maturity and strength of the concrete.

The Results | High Data Visibility and Connectivity Create The Perfect Climate

By developing the sensors with MultiTech Conduit each gateway has the ability to manage thousands of Low-Power Wide-Area Network (LoRaWAN) compliant devices and transmit their data over any cellular network. This, in turn, has created an easy-to-use solution that allows for remote data collection and transmission, an uninterrupted flow of data, recoverability and re-usability of the hardware, and operation in conditions where large temperature changes and the elements may be present.

The Team | Device Provisioning, Activation and Installation Services

RTO has enabled private organizations selling data connectivity solutions to construction businesses utilize secure wireless communications to improve remote monitoring operations. Better communications keep critical systems running longer, enable faster repairs, and reduce operating costs. Reach out to the team at RTO to procure, provision, kit, and ship the devices your organization needs to help its' clients succeed in our technology driven world.

Industry Profile

- Construction Companies
- General Contractors

Technology Solutions

- MultiTech Conduit®
- MultiTech LoRa mCard™
- MultiTech LENS®
- MultiTech LoRa Antenna
- Custom LoRa Sensors
- Mobile Mark LMW202

Targeted Results

- Real-Time Sensor Data
- Lower Power Wide Area
- Remote Management
- Cost Savings and ROI

CONTACT US TODAY FOR LOW POWER WIDE AREA NETWORKING SOLUTIONS

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