10SOREX

Pressure Monitoring in Irrigation Systems

With the global population expected to reach 9.7 billion by 2050, sustainable agriculture practices like efficient water management in irrigation systems are crucial for ensuring food security worldwide.

CHALLENGE

The efficient distribution of water in irrigation systems is a critical aspect of sustainable agriculture, especially in regions facing water scarcity. Traditional pressure monitoring techniques are often time-consuming and labor-intensive, requiring manual intervention and periodic checks. This makes it difficult for farmers to optimize water distribution and minimize water wastage in their irrigation systems.

SOLUTION

The 10Sorex battery-operated Pressure Sensor, utilizing NB-IoT technology, provides a robust and reliable solution for monitoring pressure in irrigation systems. Deploying these sensors throughout the system enables near real-time data transmission and analysis, facilitating better water management and distribution.
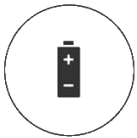
The benefits of using this approach include:
- Improved water efficiency: Regular pressure monitoring and analysis can help identify and resolve issues related to uneven water distribution or leakage, leading to reduced water wastage and increased crop yield.
- Cost-effective: 10Sorex sensors are battery-operated, eliminating the need for costly power infrastructure and reducing the overall investment required for the monitoring system.

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- Ruggedized design: 10Sorex products are built to withstand harsh industrial applications and have an IP65 rating, ensuring reliable performance in challenging environments.
- Easy installation and maintenance: With their wireless capabilities and long-lasting battery life, 10Sorex sensors can be easily installed and maintained, requiring minimal intervention from farmers.
- Near real-time data: The integration of NB-IoT technology allows for near real-time data transmission, providing farmers with actionable insights to optimize their irrigation systems continuously.

Battery Operated	Ruggedized Design	Easy Install	Pre-Configured	Secure	Quick ROI

TECHNOLOGY

10Sorex employs cutting-edge communication technology by utilizing the LTE Cat M1 protocol, which operates on 4G and 5G cellular networks, making it suitable for mobile and stationary monitoring applications. However, its remarkably low power consumption and superior penetration rate, specifically designed for industrial solutions, sets it apart. Narrowband Internet of Things (NB-IoT) and LTE Cat M1 are advanced communication technologies that offer significant advantages for monitoring applications. These technologies provide efficient and reliable connectivity for IoT devices, allowing for seamless communication between our sensor and remote monitoring systems. NB-IoT and LTE Cat M1 are known for their low power consumption, enabling prolonged battery life for the devices, which is crucial for remote or hard-to-reach areas. Moreover, these technologies offer excellent penetration capabilities, allowing for reliable communication even in challenging environments, such as underground or remote locations where devices are often deployed. NB-IoT and LTE Cat M1 also provide secure and scalable connectivity, enabling robust and cost-effective solutions for monitoring applications in various industrial sectors, including agriculture, utilities, logistics, and more.

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SENSOR TECHNICAL SPECIFICATIONS

• Range (bar)	10
• Accuracy (combined linearity, hysteresis, repeatability) (%Span)	±0.25 (typ.)
• Resolution (%Span)	±0.01
• Temperature Coefficient of Zero (%FS/°C)	≤±0.02
• Temperature Coefficient of Span (%FS/°C)	≤±0.02
• Long Term Stability (1 year) (%Span)	≤ 0.2
• Pressure Overload (%FS)	300 (range <1bar); 150 (higher range)
• Pressure Cycles (Zero to Full Scale) (Million)	10+
• Compensated Temperature (°C)	-10 ~ +70
• Power Supply	Built-in Replaceable Lithium Battery
• Rated Voltage (V)	3.6
• Battery Lifetime	10,000+ transmissions
• Materials	O-ring: Viton, Body: SS316L, Diaphragm: SS316L, Oil: Silicon, Enclosure: POM
• Weight (g)	550
• Protection Rate	IP66, UV Protected
• SIM Card Type	4FF Nano-SIM, from any Network Provider
• Firmware Update	Over The Air, Locally via Wireless Connectivity
• Sampling Period	Configurable via downlink (default 4 hours)
• Communication Bands	B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B26/B28 and B39
• Antenna	Internal (Default)/ External (customised options available)

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PLATFORM FEATURES

10Sorex's software platform is a comprehensive and user-friendly solution specifically designed for diesel delivery management. The platform offers a wide range of features tailored for diesel delivery operations, including real-time data visualization, customizable alerts and notifications, historical data analysis, and predictive analytics. It provides users with a holistic view of their diesel delivery assets, allowing them to make data-driven decisions for optimal fuel management. The platform is accessible via web browsers and mobile devices, providing convenient remote access to critical information anytime, anywhere. 10Sorex's software platform is designed with a user-centric approach, offering intuitive navigation and a user-friendly interface for easy setup and configuration. With its advanced features and ease of use, 10Sorex's software platform empowers users to effectively monitor and manage their diesel delivery operations in remote areas, ensuring efficient and sustainable fuel resource management.

- Encrypted ultra-low power communication protocol
- Advanced device inventory
- Integration APIs for enterprise systems
- Multi-tenant role-based access control
- Data export and import
- White-label platform for enterprise runs on private account
- Variable alarm setting for high and low thresholds and multi-channel alerting
- Sampling and transmission interval configuration
- Transmission condition configuration
- Other configurations and customization available on request

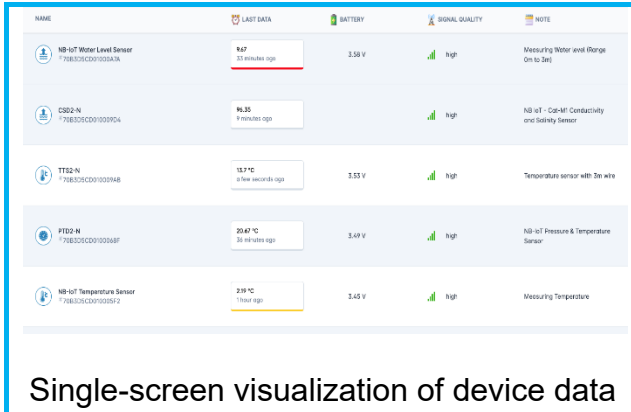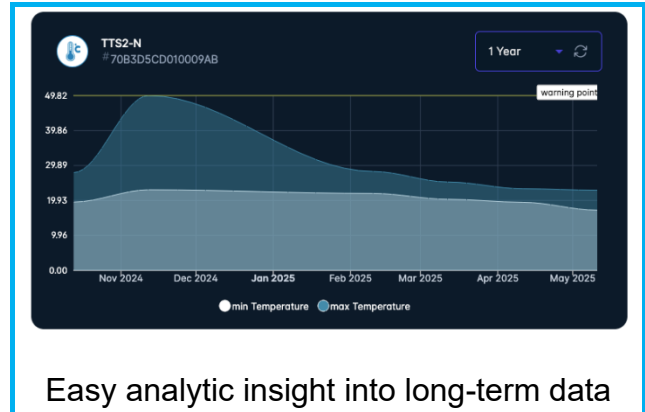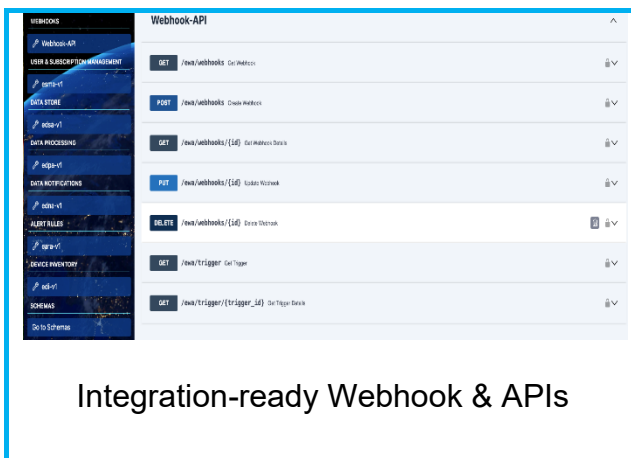|		
Encrypted & ultra-low power	Integratable	Dynamic alerting
Multi-tenant	Scalable	Composable & API first
Low cost	Action management	Resource monitoring

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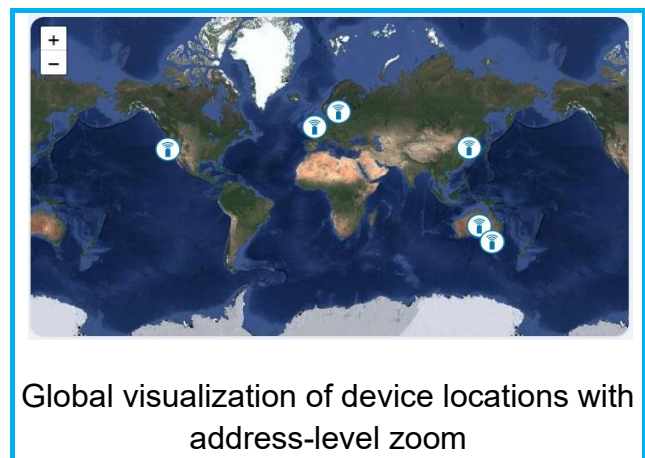## Pressure Monitoring in Irrigation Systems

Single-screen visualization of device data

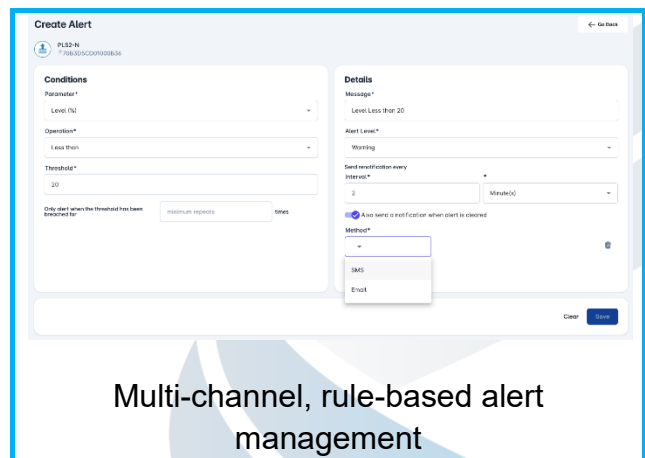Easy analytic insight into long-term data

Integration-ready Webhook & APIs

Global visualization of device locations with address-level zoom

Customizable aggregations & stats

Multi-channel, rule-based alert management

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INDUSTRIES SERVED

Agriculture & Farming

Smart Building & HVAC

INTEGRATION OPTIONS

10Sorex's solution sets itself apart with its pre-configured and plug-and-play design, eliminating the complexities of configuration, programming, and connection to the platform. This unique approach ensures that users can start monitoring their diesel tanks quickly and easily without any technical hassles. Additionally, 10Sorex offers seamless integratability at both the network and platform levels, allowing for easy integration with any network or visualization/analysis platform. This competitive advantage makes 10Sorex's solution highly adaptable and compatible with existing systems, providing users with flexibility and convenience in managing their diesel resources effectively.

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ORDERING PROCESS

10Sorex offers simple and easy way to order the solution from any location on earth with narrow band cellular coverage. Please visit our sales portal (www.10sorex.com) or contact us to discuss your application. This is the first step to experience a reliable IoT solution at scale.

Purchase the solution online

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View the Included Sensor Datasheet

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Integrated IoT Solutions

Email: sales@10sorex.com
Web:　　www.10sorex.com