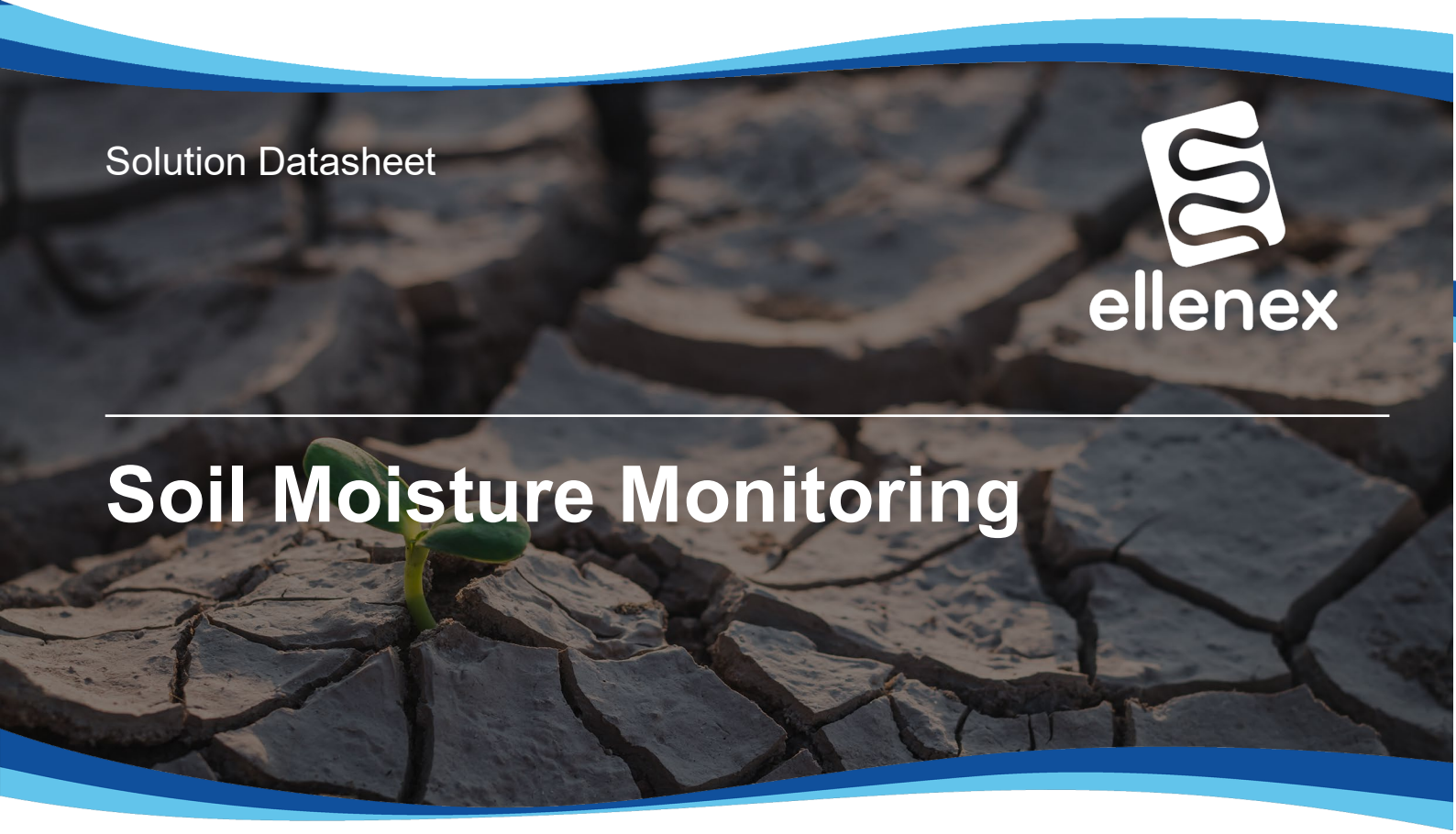
Solution Datasheet



Soil Moisture Monitoring

Efficient soil moisture monitoring is key to sustainable agriculture and water resource management, ensuring a secure food supply for a growing global population.

CHALLENGE

Agricultural industries around the world face the challenge of optimizing water usage to enhance crop yield and maintain soil health. Monitoring soil moisture accurately and consistently is crucial for efficient irrigation management and preventing water wastage.

SOLUTION

The Ellenex battery-operated Soil Probe Sensor is an ideal solution to address this challenge. By leveraging NB-IoT technology, these rugged, IP65 rated sensors can be easily deployed in agricultural fields to monitor soil moisture levels near real-time. The IoT sensors transmit data every few hours, providing farmers with valuable information to make informed decisions about irrigation and water management.

Benefits of using Ellenex Soil Probe Sensors include:

- Improved water usage efficiency, reducing wastage and conserving valuable resources.
- Enhanced crop yields through optimal irrigation management based on accurate soil moisture data.
- Reduced labor costs and time spent manually monitoring soil moisture levels.

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- Improved soil health by preventing over-irrigation and ensuring adequate moisture for plant growth.
- Long battery life and low maintenance requirements, thanks to ruggedized design and advanced NB-IoT technology.

By implementing Ellenex Soil Probe Sensors, agricultural industries can optimize their water management practices, improve crop yields, and contribute to sustainable agriculture and water resource conservation.

Battery Operated

Ruggedised Design

Easy Install

Pre-Configured

Secure

Quick ROI

TECHNOLOGY

Ellenex 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

NB-IoT LTE-M

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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.

SENSOR TECHNICAL SPECIFICATIONS

• Sensing Elements	4 One every 10cm	
• Moisture Resolution	0.01 (typ.)	%
• Moisture Accuracy	±2 (typ.) at 0% VWC to 50% VWC	%
• Temperature Resolution	0.01 (typ.)	°C
• Temperature Accuracy	±1 (typ.) at 25°C	°C
• Storage Temperature	-7 to +60	°C
• Operation Temperature	-7 ~ +60	°C
• Power Supply	Built-in Replaceable Lithium Battery	
• Rated Voltage	3.6	V
• Battery Lifetime	10,000+ transmissions	
• Weight	~ 1300	g
• Protection Rate	IP66, and UV Protected enclosure	
• 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

Ellenex'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. Ellenex'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, Ellenex'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 customisation 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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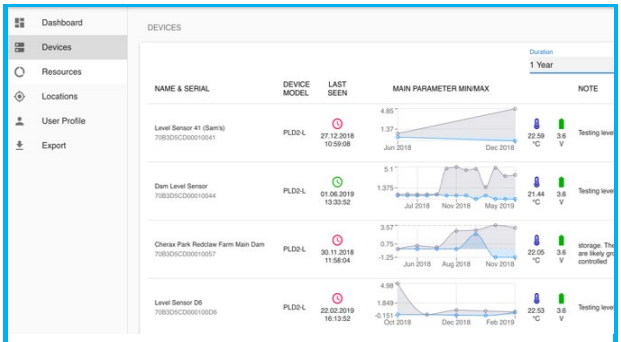
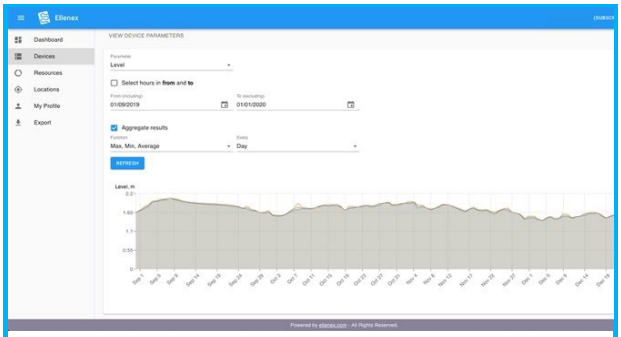
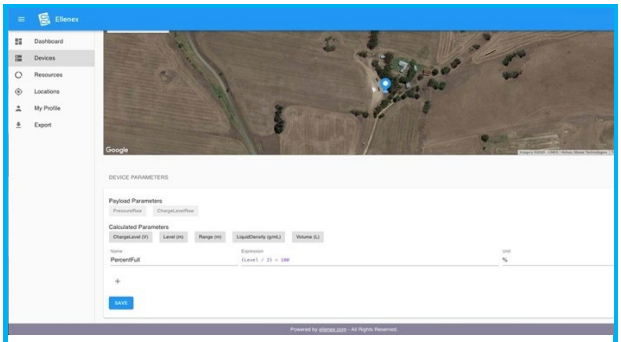


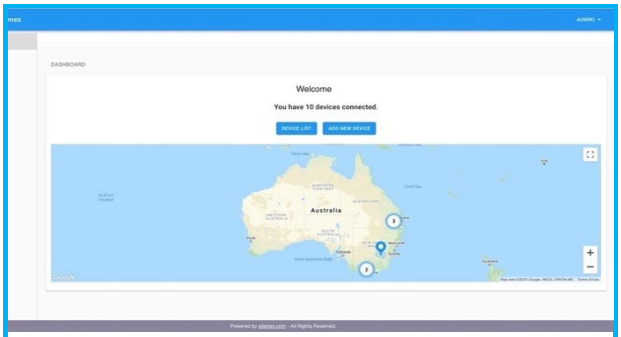
Single shot data visualisation of devices



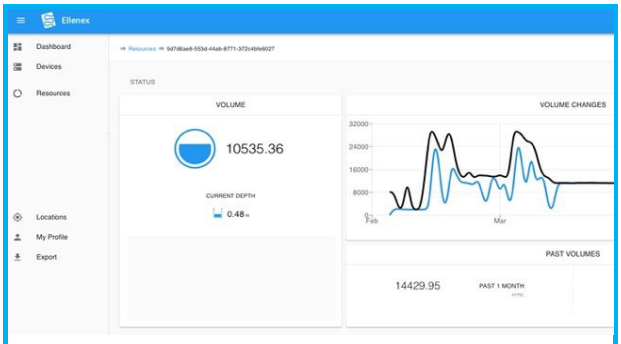
Easy historic data analysis



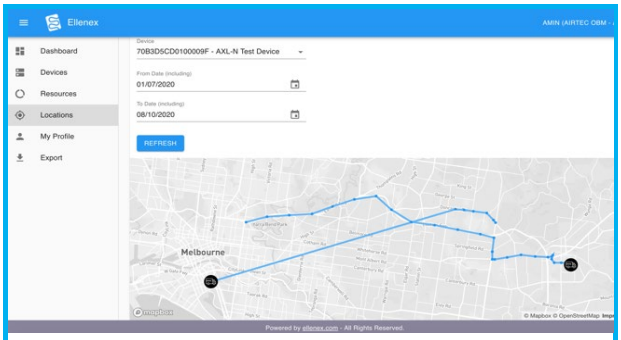
Asset location indication and complex formula



Device list visualisation on map



Volume calculation and prediction



Asset location monitoring (for mobile assets)

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INDUSTRIES SERVED

Agriculture &
Farming

INTEGRATION OPTIONS

Ellenex'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, Ellenex 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 Ellenex's solution highly adaptable and compatible with existing systems, providing users with flexibility and convenience in managing their diesel resources effectively.

ORDERING PROCESS

Ellenex 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.ellenex.shop) or contact us to discuss your application. This is the first step to experience a reliable IoT solution at scale.

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Purchase the solution online

Learn more about our Software Platform

View the Included Sensor Datasheet

Browse our other solutions

Ver. 1.3-05/23

Integrated IoT Solutions

Email: sales@ellenex.com
Web: www.ellenex.com
Platform: ellenex.net
Sales Portal: www.ellenex.shop