Solution Datasheet

Remote Diesel Tank Level Monitoring

Rely on technology to safeguard your valuable assets, ensuring uninterrupted diesel availability in remote areas, and preventing surprises of fuel shortages.

CHALLENGE

Managing diesel fuel levels efficiently and accurately in large storage tanks is essential for industrial operations, agriculture, and logistics industries. Traditional monitoring methods require manual inspection or are often limited by inaccuracies, which can compromise efficiency and increase the risk of spills, inventory outages, and regulatory fines.

SOLUTION

Our Submersible Level Sensor is designed to tackle the challenge of monitoring diesel tank levels in a remote setting. Combining robust IoT sensors with NB-IoT technology, our solution provides near real-time data transmission, accurate level measurements, and efficient management of fuel resources.

Ellenex's submersible level sensor operates on battery power, allowing for seamless integration into pre-existing infrastructure without the constraints of wiring or short battery life. The robust, IP65-rated design ensures the sensor can withstand harsh industrial conditions and deliver reliable performance.

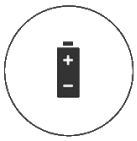
By utilizing NB-IoT technology, our solution delivers cost-effective and energy-efficient wireless communication over a wide geographical coverage, allowing for centralized management of multiple diesel tanks from a single access point. This innovative approach eliminates the need for

manual inspection while providing accurate and real-time data for effective management and decision-making.

Our Submersible Level Sensor provides numerous benefits by employing this innovative approach to remote diesel tank level monitoring. These benefits include:

- **Enhanced Operational Efficiency:** Near real-time data enables informed decision-making, optimal resource allocation, and timely inventory replenishment, eliminating the risk of costly downtime.
- **Improved Accuracy:** Advanced sensors accurately measure diesel tank level, reducing the risk of errors associated with manual measurements.
- **Reduced Environmental Impact:** Accurate level monitoring decreases the potential for diesel spills and leaks, minimizing adverse environmental consequences and regulatory compliance issues.
- **Cost Savings:** Efficient inventory management and reduced manual labor requirements result in significant cost savings for businesses and organizations in the long run.
- **Scalability:** NB-IoT technology allows for the seamless integration of additional IoT sensors, making it easy to scale the solution to meet growing demands.

Integrating our Submersible Level Sensor into diesel tank management systems enables organizations to confront the challenges of remote diesel tank level monitoring proactively. Our battery-operated, ruggedized IoT sensors work seamlessly with NB-IoT technology, ensuring accurate measurements and near real-time data transmission, enhancing operational efficiency, and reducing costs.


Battery Operated


Ruggedised Design


Easy Install


Pre-Configured


Secure

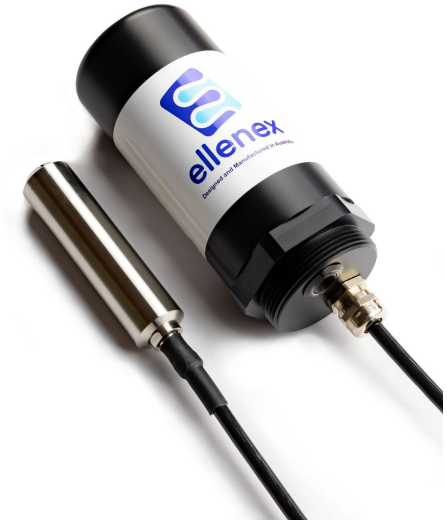

Quick ROI

LM-TA-D-N

Remote Diesel Tank Level Monitoring

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 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.



NB-IoT LTE-M

LM-TA-D-N

Remote Diesel Tank Level Monitoring

SENSOR TECHNICAL SPECIFICATIONS

• Range	3m (or other ranges upto 200m)	m
• Accuracy (combined linearity, hysteresis, repeatability)	±0.25 (typ.)	%Span
• Resolution	±0.01	%Span
• Temperature Coefficient of Zero	≤±0.03	%FS/°C
• Temperature Coefficient of Span	≤±0.03	%FS/°C
• Long Term Stability (1 year)	≤ 0.2	%Span
• Overload Protection	150	%FS
• Load Cycles (Zero to Full Scale)	10+	Million
• Storage / Operation Temperature	-20 ~ +85	°C
• Compensated Temperature	0 ~ +60	°C
• Power Supply	Built-in Replaceable Lithium Battery	
• Rated Voltage	3.6	V
• Battery Lifetime	10,000+ transmissions	
• Sensor Materials	O-ring: Viton, Body: SS316L, Diaphragm: SS316L, Oil: Silicon, Enclosure: POM	
• Weight	~1200 (for 5m range)	g
• Protection Rate	IP66, UV Protected enclosure and IP68 sensor head	
• 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)	

LM-TA-D-N

Remote Diesel Tank Level Monitoring

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

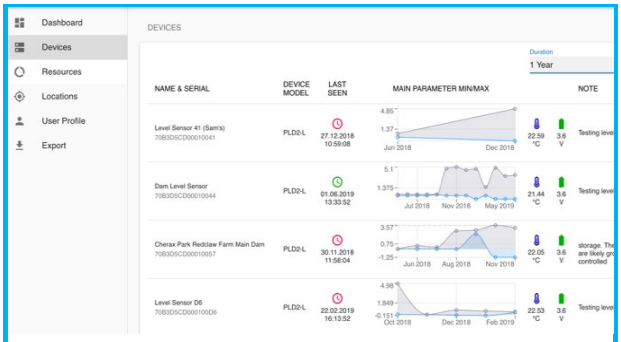

Low cost


Action management

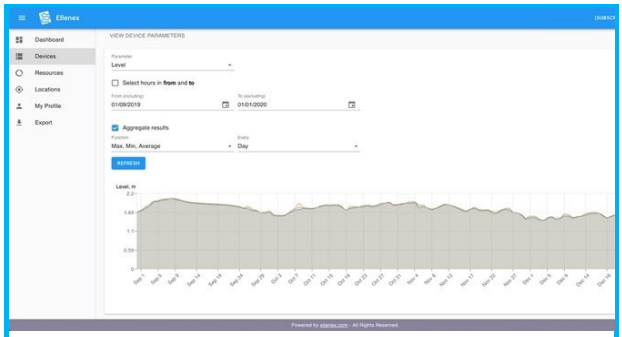

Resource monitoring

LM-TA-D-N

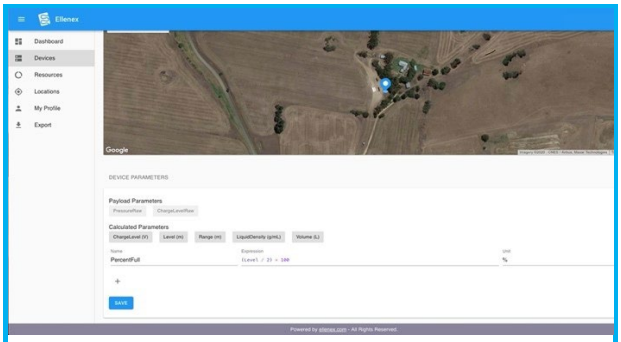
Remote Diesel Tank Level Monitoring



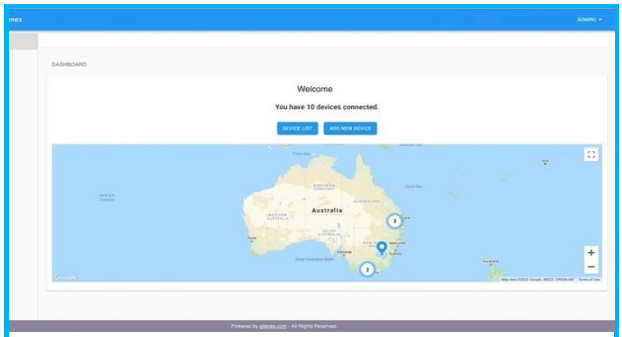
Single shot data visualisation of devices



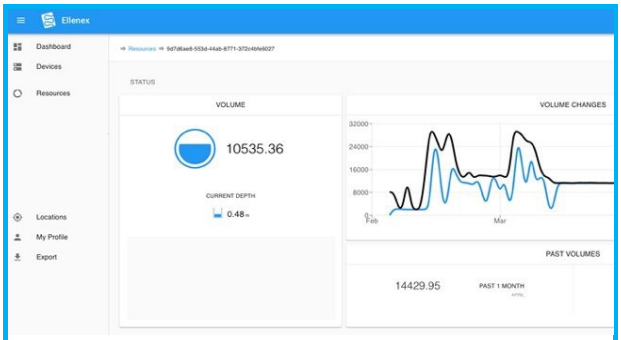
Easy historic data analysis



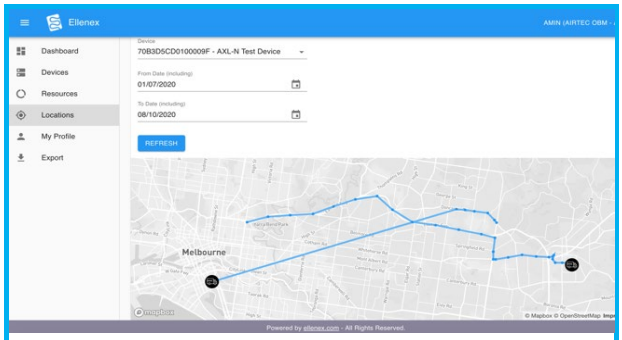
Asset location indication and complex formula



Device list visualisation on map



Volume calculation and prediction



Asset location monitoring (for mobile assets)

LM-TA-D-N

Remote Diesel Tank Level Monitoring

INDUSTRIES SERVED

- Agriculture & Farming
- Smart Building & HVAC
- Mining & Construction
- Oil & Gas
- City & Councils

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.

LM-TA-D-N

Remote Diesel Tank Level Monitoring

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