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Made in Germany

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PRODUCT PROPOSAL
AION MIOTY IO-LINK ADAPTER

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Ditch expensive cabling! The AION mioty® IO-Link adapter wirelessly connects IO-Link sensors, reducing costs and enabling flexible, long-range industrial automation. Ideal for smart factories, remote monitoring, and retrofitting, it drives seamless digitalization in Industry 4.0.

AION - UNWIRED, UNLEASHED

In the era of Industry 4.0, efficient data communication is essential for optimizing manufacturing. Traditional wired IO-Link systems can be costly and inflexible - our mioty® IO-Link adapter AION changes that. By bridging wired IO-Link sensors with wireless, long-range, and low-power communication, it reduces costs, enhances flexibility and drives large-scale digitalization. Perfect for smart factory automation, remote monitoring, predictive maintenance, and retrofitting, it transforms brownfield and greenfield applications. Say goodbye to costly cabling - embrace the future of wireless IIoT with mioty®.

This product also solves the problem of not having to develop and connect a customized sensor for every application but rather forms an open platform for efficiently connecting a wide range of industrially standardized IO-Link sensors across different applications.

IO-Link is a standardized protocol for sensors and actuators, enabling reliable, bi-directional communication. However, its reliance on wired connections can limit flexibility and increase costs. mioty®, a low-power wide-area network protocol, ensures long-range and interference-resistant communication. AION offers wireless long-range connectivity, replacing traditional cabling to reduce costs and enhance flexibility. This solution is ideal for various applications, including smart factory automation, where wireless connections simplify reconfiguration and remote monitoring, which ensures safe and reliable data transmission. It also excels in predictive maintenance, process industries, retrofitting, and both brownfield and greenfield projects. Key benefits include cost reduction, scalable systems, improved flexibility, robust performance in interference-prone environments.

"Considering that cable laying costs between 20$ and 50$ per meter in industrial applications, wireless devices can have a significant impact on lowering investment costs and driving digitalization in the automation and process industry."

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HOT IT WORKS

The mioty® IO-Link Adapter is connected to standard IO-Link sensors and actuators via an IO-Link Master or directly to individual devices. It collects process, diagnostic, and parameter data from the sensors and transmits it wirelessly using the mioty® protocol. This protocol employs telegram-splitting technology, which fragments data packets into multiple sub-packets that are transmitted across different time and frequency slots. This ensures maximum robustness against interference, even in industrial environments with high RF congestion.

The wireless data is then received by a mioty® base station, which forwards it to industrial control systems, SCADA platforms, cloud-based analytics services, or edge computing environments. Due to standardized and open cloud decoding, the adapter integrates effortlessly into existing OT and IT infrastructures, supporting both on-premises and cloud-based deployments. By combining IO-Link's standardized sensor communication with mioty's wireless long-range technology, the mioty® IO-Link Adapter provides a cost-effective, scalable, and highly reliable solution for digitalization and IIoT in industrial automation.

IoT Cloud and Platform

mioty® Base Station and Network Management

AION mioty® IO-Link Adapter

Sensor Device with IO-Link
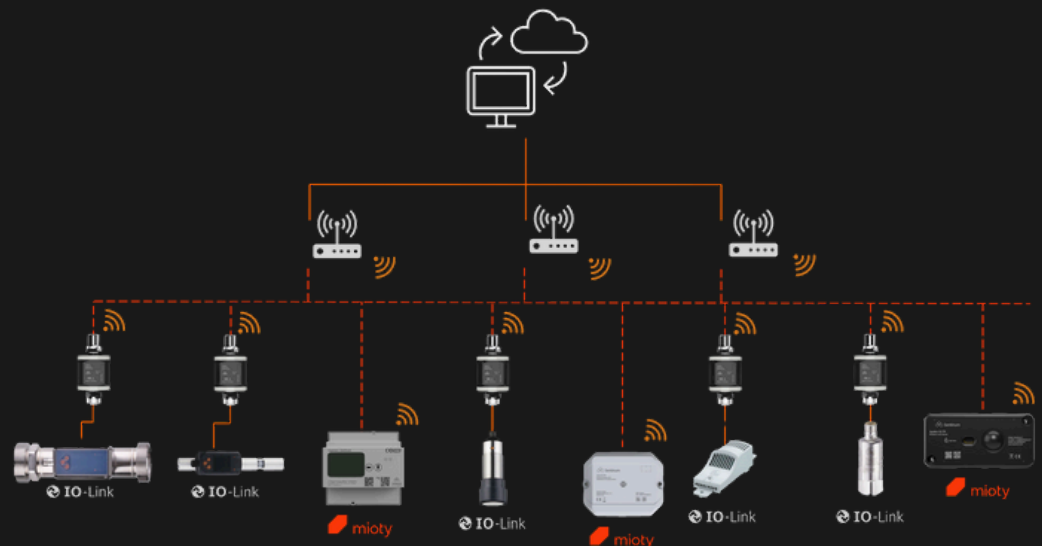
TECHNICAL KEY FEATURES

✚ IO-LINK COMPABILITY

Works with all IO-Link sensors and actuators that comply with the IO-Link standard (IEC 61131-9), enabling broad device integration.

✚ WIRELESS LONG RANGE

Uses mioty® LPWAN technology to achieve kilometer-range transmission with minimal power consumption, ideal for large industrial sites, remote areas.

✚ ROBUST DATA TRANSMISSION

The telegram-splitting mechanism significantly reduces packet loss and ensures reliable operation even in EMC-heavy industrial environments.

✚ FLEXIBLE INTEGRATION

The mioty® IO-Link Adapter can be easily added to existing IO-Link infrastructures without requiring sensor modifications or extensive reconfiguration.

AION - SOLUTION AND BENEFITS

Installation and maintenance costs are major cost drivers for applications in IIoT in the automation sector and process industry. The costs are usually the biggest hurdle in such projects which leads to a very slow digitalization of traditional companies. According to surveys of our customers, the costs for cabling alone amount to up to €50 per meter, and in some cases even higher. The costs also arise when data cables have to be retrofitted in addition to supply lines. Further costs arise during operation due to the manual reading of measured values, which leads to high costs, especially in remote areas where it is not possible to lay cables. This leads to immense costs in the process industry. An example of this is the reading of energy parameters, pressures or flow rates at pumping stations such as those found in the oil & gas or mining industry.

The costs shown in these projects can be drastically reduced by wireless sensor solutions. This requires the use of robust long-range wireless technology such as mioty® to enable simple integration and good penetration in industrial buildings on the one hand and to bridge long distances outdoors on the other. This can reduce the costs for cabling or redundant reading by up to 50%, or even higher, depending on the application. Furthermore, the mioty® IO-Link adapter is based on the existing IO-Link standard. This means that different sensor and actuator types can be easily connected, and cross-application use cases can be implemented. This further reduces investment costs, as it is not necessary to buy a new sensor for every application, as existing sensors from the market or sensors already deployed in the field can be used.

✚ COST REDUCTION

Eliminates the need for expensive cable installations, which typically cost $20 to $50 per meter, leading to significant savings in deployment and maintenance.

✚ OPEN PLATFORM

Eliminates the need for customized sensors by providing an open platform for seamlessly integrating a wide range of IO-Link sensors across various industrial applications.

APPLICATION AREAS

SMART FACTORY AUTOMATION

Enables flexible sensor placement and wireless process monitoring.

PREDICTIVE MAINTENANCE

Collects vibration, temperature, and other condition-monitoring data for early fault detection.

REMOTE MONITORING

Transmits sensor data from hard-to-reach areas (e.g., pipelines, offshore platforms, or large industrial plants).

BROWNFIELD RETROFITTING

Enhances legacy systems with wireless connectivity without major infrastructure changes.

PROCESS INDUSTRY & HAZARDOUS ENVIRONMENTS

Ensures reliable data collection in harsh and remote areas where cabling is difficult or expensive.

WHY MIOTY® IS SUPERIOR

mioty® is a highly efficient low-power wide-area network (LPWAN) technology designed to enable long-range, interference-resistant communication in industrial environments. What sets mioty® apart is its unique telegram-splitting mechanism, which significantly enhances reliability and scalability compared to traditional LPWAN solutions. Instead of sending entire data packets in one transmission, mioty® splits them into multiple small sub-packets and transmits them across different frequencies and time slots. This approach makes the system extremely resilient to interference from other signals or industrial noise, as even if some sub-packets are lost, the receiver can still reconstruct the complete message.

In practice, this means that mioty® enables robust and long-range wireless connectivity for sensor networks. Devices can send data across distances of several kilometers, even in environments with high radio frequency interference, such as factories or process plants. Another key advantage is its low power consumption, allowing sensors and devices to operate on battery power for years without requiring frequent maintenance. Unlike conventional wireless technologies that struggle in dense sensor networks, mioty's architecture is optimized for massive scalability.
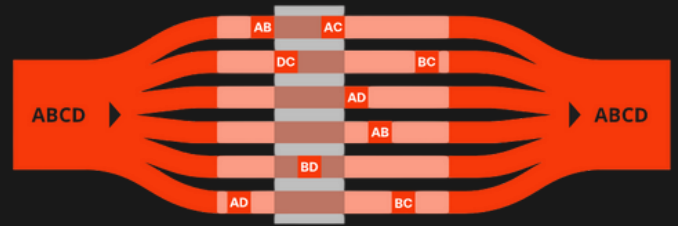
mioty® telegram splitting technology

Compareable technologies

✚ UNMATCHED RELIABILITY

✚ ULTRA LONG BATTERY LIFETIME

✚ UNRIVALLED SCALABILITY

✚ ULTRA LONG RANGE

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