Application Story

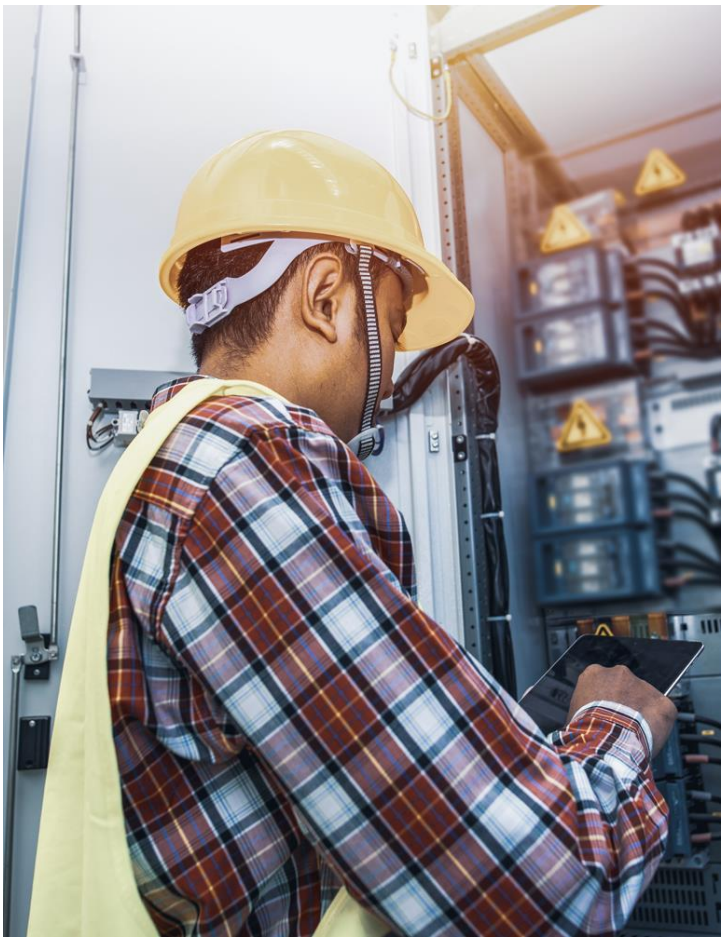
Keeping the Pressure on with IoT Monitoring Solutions

Industry: Manufacturing, Medical, Facilities Management

Product: SRG-3352

Introduction

Air compressors are a vital tool across many industries, from automotive maintenance to providing positive pressure for clean rooms in electronics manufacturing. In many applications, including clean rooms, air compressors are required to run continuously throughout a work day, even 24/7 in some deployments. This kind of operation requires constant monitoring to ensure the pumps are operating efficiently, and to catch maintenance issues before they happen.



To help in providing real-time monitoring, one air compressor and equipment manufacturer utilizes an IoT and cloud-based solution, helping reduce maintenance costs by providing services exactly when its needed, and catching smaller problems before they become big ones. This approach has allowed their customers to operate air compressors with confidence and reliability.

Recently, the air compressor manufacturer decided to upgrade their IoT system. However, migrating from the older system to a new one presented several challenges which seemed daunting. They turned to AAEON and the SRG-3352 to provide a solution for their project.

Challenges

Upgrading the IoT system in place presented the manufacturer with several challenges. They needed a system which could withstand a harsh operating environment, provide reliable and low maintenance operation, and support cellular communication for remote equipment deployments. The SRG-3352 met and exceeded each of these requirements.

Industrial Design

AAEON is the industry leader in building rugged systems to operate in tough environments. The SRG-3352 utilizes an energy efficient and low-power processor, reducing thermal output and allowing the system to operate reliably in temperatures from 0° to 60°C without a loss in performance.

Reliable, Long Lasting Operation

To provide timely maintenance for the air compressors, the systems monitoring the equipment needs to be even more reliable and long-lasting. The SRG-3352 is built for long term service, with a Mean Time Before Failure (MTBF) of over 850,000 hours.

Cellular Communication

With many air compressor units deployed to remote sites or plants with unreliable physical internet, the manufacturer needed a system that could support cellular communication. The SRG-3352 features an mPCIe card slot and SIM card socket to help connect via 4G/LTE networks.

AAEON Advantage

By choosing AAEON, the air compressor manufacturer was able to leverage several key advantages provided over other competitors. From the fast boot up times and compatibility with a wide range of cloud platforms to AAEON's industry leading service and support, the project could be deployed quickly and within budget.

Cloud-Ready Platform

The SRG-3352 is compatible with popular cloud platforms including Microsoft Azure, AWS, Google Cloud Platform (GCP), and can be configured to work with customized deployments as well. The SRG-3352 is able to support many existing cloud IoT structures out of the box, as was the case with the manufacturer's own network.

RISC Based Processing

The SRG-3352 utilizes the ARM Cortex-A8 800 MHz RISC Processor, allowing for a lighter operating system and faster boot up times than x86 based systems. This gave the SRG-3352 a noticeable edge over the manufacturer's previous system, booting up and connecting to their server within two minutes of powering on.

Leading Service and Support

One of the biggest factors in the manufacturer's decision was the need to migrate from their previous Windows-based system to the Linux-based system utilized on the SRG-3352. AAEON provided the necessary support, from migrating software and debugging, to ensure smooth operation while also accelerating deployment times.

Impact

Thanks to the SRG-3352, the manufacturer was able to upgrade their monitoring system with an effective solution the provided both lower cost per unit and lower lifetime operation cost as well. With AAEON's industry leading service and support, they could roll out their upgrade project quickly and in a timely manner to help reduce any downtime or interference with their clients' own businesses.

With the system in place, the manufacturer is also able to provide their clients with several time and cost savings benefits, with quicker startup times helping to reduce the time required for on-site maintenance to check the status of multiple units, as well as continuing to provide accurate, real-time information to detect faults sooner and predict regular scheduled maintenance more reliably.

Product

The SRG-3352 from AAEON is built to power reliable and cost-effective edge gateway operations, with low upfront cost and reduced maintenance requirements over time. Powered by the Arm® Cortex-A8 800 MHz RISC processor, the SRG-3352 offers lower energy requirements for solar or battery powered operations, as well as reduced thermal output, allowing the system to operating in a wide range of temperatures from 0°C to 60°C without a loss in performance.

The SRG-3352 supports wireless communication through 3G/4G/LTE as well as NB-IoT to help reduce carrier costs. The SRG-3352 provides flexibility in connecting with edge nodes, supporting Wi-Fi and featuring two Gigabit Ethernet ports, USB 2.0 and RS-485 ports. Optional wall-mount and DIN rail kits ensure the SRG-3352 can be deployed anywhere it's needed. The SRG-3352 is also compatible with popular cloud services including AWS, Azure, and Arm Pelion, or can be configured to work with a customer's own cloud platform.

About AAEON

Established in 1992, AAEON is one of the leading designers and manufacturers of industrial IoT and AI Edge solutions. With continual innovation as a core value, AAEON provides reliable, high-quality computing platforms including industrial motherboards and systems, rugged tablets, embedded AI Edge systems, uCPE network appliances, and LoRaWAN/WWAN solutions. AAEON also provides industry-leading experience and knowledge to provide OEM/ODM services worldwide. AAEON also works closely with cities and governments to develop and deploy Smart City ecosystems, offering individual platforms and end-to-end solutions. AAEON works closely with premier chip designers to deliver stable, reliable platforms, and is recognized as an Associate member of the Intel® Internet of Things Solutions Alliance, as well as an NVIDIA® Preferred Partner. For an introduction to AAEON's expansive line of products and services, visit www.aaeon.com.

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