

Responsible Facilities with IoT Monitoring Solutions

Industry: Manufacturing, Warehousing, Logistical Facilities Management

Product: SRG-4854P

Introduction

With growing concern over what global climate change means for the future of our planet, many organizations are pointing out the need to replace our reliance on fossil fuel energy production. Energy production by fossil fuels is one of the leading sources of pollution, with coal power being the worst offender. However, replacing these power plants requires time, money, and often, political will, to fund and build alternative energy infrastructure.

Many companies are not waiting around, however, and are taking matters into their own hands to help reduce energy consumption and reliance on fossil fuels. Some of these measures include initiatives to reduce wasteful energy usage, installing more energy efficient lights and equipment, and even painting the roofs of buildings to reflect heat from the sun.



A factory in Taiwan recently decided to implement a strategy of utilizing environmental monitoring to ensure the most efficient usage of air conditioning throughout their building. Being a large facility, this meant monitoring across several zones: offices, production lines, and warehouse. Additionally, they took the initiative to install solar panels, turning the roof of the facility into a solar farm.

However, to achieve the goals of their plan, they needed an IoT based platform to help monitor the environment across the entire factory, as well as provide monitoring of the solar panels to ensure optimal efficiency. The factor turned to AAEON and the SRG-4854P to deliver a solution that fit the needs of their project.

Challenges

To meet the needs of the project, AAEON worked with the factory to determine several key requirements: the system needed to have a broad I/O layout to connect with a large number of different sensors; flexible network options to communicate with the factory's local network no matter where the system was located; and the platform needed to be cloud ready to integrate easily with a monitoring system. The SRG-4854P met and exceeded each of these requirements

Broad I/O Layout

One of the keys to building the solution is connecting not only a variety of sensors, but a large number of them as well. The SRG-4854P offers a broad I/O layout which supports up to four COM 485 ports, allowing the system to connect with more sensors, from temperature and air quality to sensors monitoring each solar panel for energy production and status.

Flexible Network Connectivity

The SRG-4854P offers communication flexibility no matter where it is deployed. It offers dual RJ-45 LAN ports for when a wired connection is available, as well as supporting Wi-Fi connections for places where no physical connection is possible. This allows the system to deploy right where it's needed, in any space, giving ultimate coverage to the entire facility.

Cloud Ready Solution

The SRG-4854P is built ready to connect to the cloud, with support for popular cloud services including Microsoft Azure, AWS, Google Cloud Platform (GCP), and can be configured to work with customized deployments as well. This gave the factory the ability to choose the cloud platform which best served their needs, knowing the system will work.

Advantages

In addition to meeting the challenges of the project, the SRG-4854P provided a cost-effective solution to quickly deploying an IoT based monitoring system. The industry leading service and support from AAEON also helped provide key advantages in making the project a reality, from providing a custom UI for the monitoring software, as well as providing full hardware and software integration with the SRG-4854P.

Cost Effective Platform

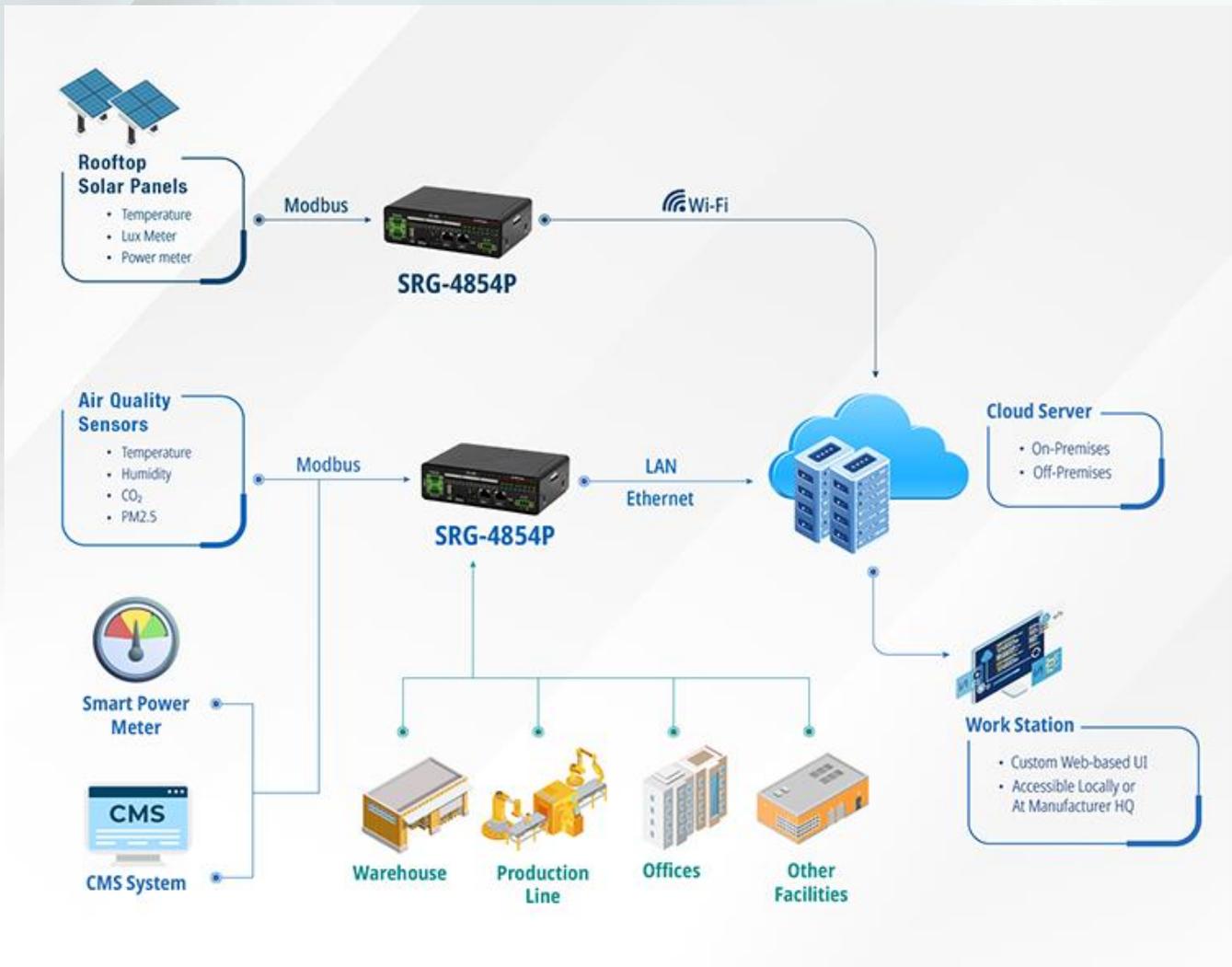
The SRG-4854P offers several key benefits to reducing the overall cost of the system, both initial procurement and over the service life of the system. Utilizing an Arm-based platform with Linux provides a low upfront cost, while also providing an energy efficient platform that helps meet the goals of reducing energy consumption across the facility.

Custom UI Support

AAEON Services helped to build a custom web-based user interface for the factory's cloud monitoring system. This gives the factory an easy to use and effective platform to quickly see the status of various zones across the facility in real-time, so they can accurately track energy usage and environmental status.

Hardware-Software Integration

AAEON Services provides a host of in-house services, as well as connecting to qualified SI partners to help determine the best deployment method and software to meet each customer's needs. Leveraging this knowledge, AAEON was able to provide the factory with the best deployment plan to making their project a reality.



Impact

With the SRG-4854P, the factory can set in motion their plans to monitor the facility and begin reducing energy consumption in an intelligent way. Additionally, by monitoring the status of the solar panels, they can ensure reliable energy product and proper maintenance. The cost savings of the system also means the factory can invest in the next steps to their goal of becoming a green factory.

Broadly, with this factory leading the way in intelligent environmental monitoring to reduce their impact on global climate change, other factories, offices and warehouses may see inspiration and a path forward to implementing their own green facility plans. The SRG-4854P also shows that putting this infrastructure in place doesn't have to be a budget breaking endeavor, and with support from AAEON, each project can be up and running quickly and smoothly.

Product

The SRG-4854P 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-4854P 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-4854P supports wireless communication through 3G/4G/LTE as well as NB-IoT to help reduce carrier costs. The SRG-4854P provides flexibility in connecting with edge nodes, supporting Wi-Fi and featuring two Gigabit Ethernet ports, and USB2.0. With support for up to four RS-485 ports, the SRG-4854P can connect with a wider variety of sensors and devices, as well as a greater number. Optional wall-mount and DIN rail kits ensure the SRG-4854P can be deployed anywhere it's needed. The SRG-4854P 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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