

CASE STUDY — INDUSTRIAL MONITORING

BATTERY HEALTH MONITORING

Monitoring of critical battery parameters (voltage, current and temperature) across a manufacturing plant, connected to PLC and HMI systems.

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Critical parameters monitored

RS485

Serial link to the PLC

PLC + HMI

Integrated end to end

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MQTT brokers to configure

SECTOR

Manufacturing plant

INTERFACE

RS485 serial · PLC & HMI

TOOLING

Productivity suite · Automation Direct

01 Overview

Monitoring of critical battery parameters (voltage, current and temperature) across a manufacturing plant, connected to PLC and HMI systems.

02 Challenges

The customer sought a solution to monitor critical battery parameters — including voltage, current, and temperature — within their manufacturing facilities. This required commissioning and configuring sensor nodes for deployment across the plant, along with ensuring the health and connectivity of both sensor nodes and gateways.

A key concern was to evaluate the feasibility of installing additional gateways for integration with PLC and HMI systems, versus developing a custom mobile application to directly interface with aggregator modules.

03 Solution

Our team understood their design plan and collaborated with the existing gateway design and development vendor.

01 **PLC integration over RS485**

Introduced PLC to demonstrate our capability/expertise via RS485 serial protocol to fetch the required sensor node parameters.

02 **Gateway frame format and command structure**

Understood the frame format from the gateway datasheet and its respective command structure (GET/SET request/response).

03 **Data structures, HMI and ladder logic**

Implemented the data structures, configured the UI from Automation Direct and created appropriate ladder logic, testing logic in the Productivity suite. Ready to go.

04 Benefits

KEY BENEFITS

- ✓ Realtime data visualization/monitoring of assets in the industries
- ✓ No need for configuring of MQTT brokers
- ✓ Data analytics for future scope of work
- ✓ Reduced cost and improved operational efficiency

Need to monitor battery health across your plant?

We integrate sensor nodes and gateways with your PLC and HMI systems — so your team gets real-time visibility without extra infrastructure.

contact@ojasq.com | www.ojasq.com