Remote Monitoring of Industrial Robots

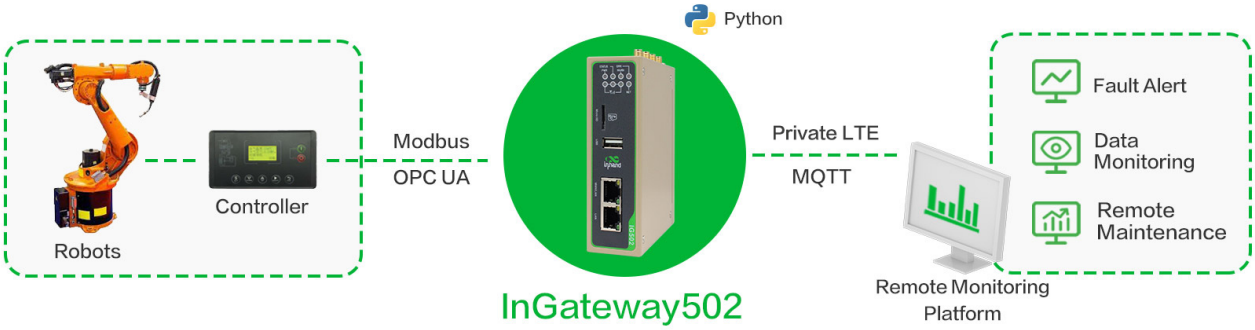
With powerful edge computing capabilities and custom development features, the IG502 continuously collects operation data of industrial robots and upload the data to the cloud, remotely monitor their status and facilitate preventive maintenance.

Background

With industrial robots increasingly used in contemporary production, their reliable operation means a lot to the efficiency of enterprises as well as robot manufacturers. Large-scale deployment, complex structures and high maintenance costs are holding back maintenance technicians, who are expected to detect anomalies in robot structures or controlling devices, and remind users of maintenance before downtime in order to ensure uninterrupted production.

Robotic arms are generating data every second. As technology advances, higher-level algorithms have been developed to control industrial robots. This requires gateways with powerful edge computing capabilities, so that they can preprocess data on the edge, validate the data, and send data to the cloud for analysis and preventive maintenance.

Solution

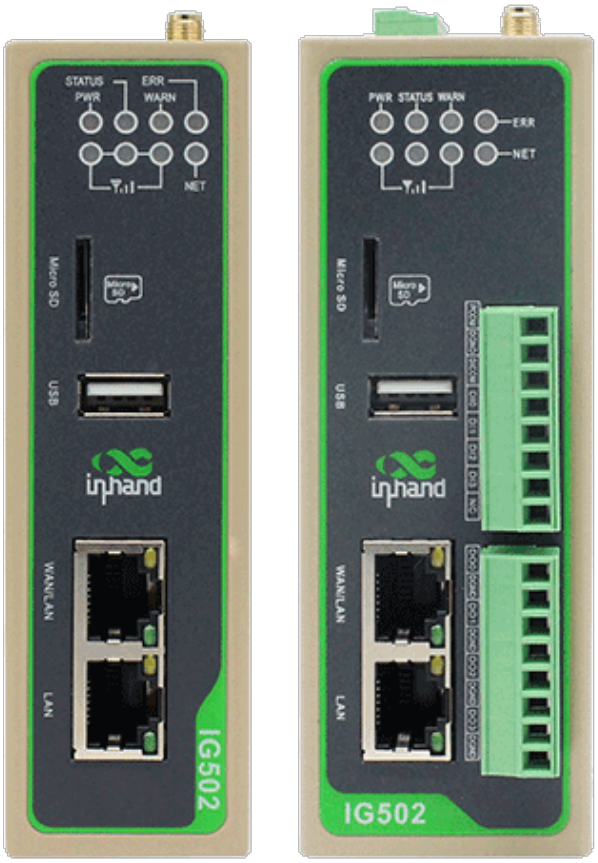


The solutions consists of the robotic controller, the IG502 IoT edge gateway and the remote monitoring platform. The IG502connects to the robotic controller, from where data of the robots are continuously collected and transmited. Being Python programmable, the IG502 enables customers to develop their own applications in order to accomplish complex data processing. Meanwhile, the built-in DeviceSupervisor? Agent of the IG502supports multiple industrial protocols such as Modbus TCP/RTU and OPC UA as well as major IoT clouds like AWS and MS Azure, quickens project implementation while reducing costs.

Data can be pre-processed, filtered and analyzed on the edge, relieving the cloud from too much data flow. The system can thus respond more quickly to what?s happening on site.

The IG502then transmits filtered data to the customer's remote monitoring platform via MQTT protocol, where the onsite data are viewed and analyzed. The platform enables fault alert and remote maintenance, ensuring secure and reliable operation of the robots so as to enhance their working efficiency.

Why InGateway502?



- Secure and reliable 4G Internet access, dual SIM failover
- Powerful edge computing capabilities, delivering cost-effective solution for edge-to-cloud data acquisition
- Python programmable, easy-to-use secondary development platform
- Auto-recovery from faults, auto redial when disconnected, ensuring high availability
- Support for multiple PLC protocols, data acquisition configured with ease
- Support for standard MQTT protocol, compatible with multiple IoT platforms