Remote Monitoring of Bearings

Mechanical failures caused by bearing damage can lead to huge losses. To better monitor the status of bearings and conduct preventive maintenance, InHand Networks delivers a solution featuring the IG902 edge computing gateway, helping acquire real-time data of the bearing status, upload data to the cloud for analysis and maintenance.

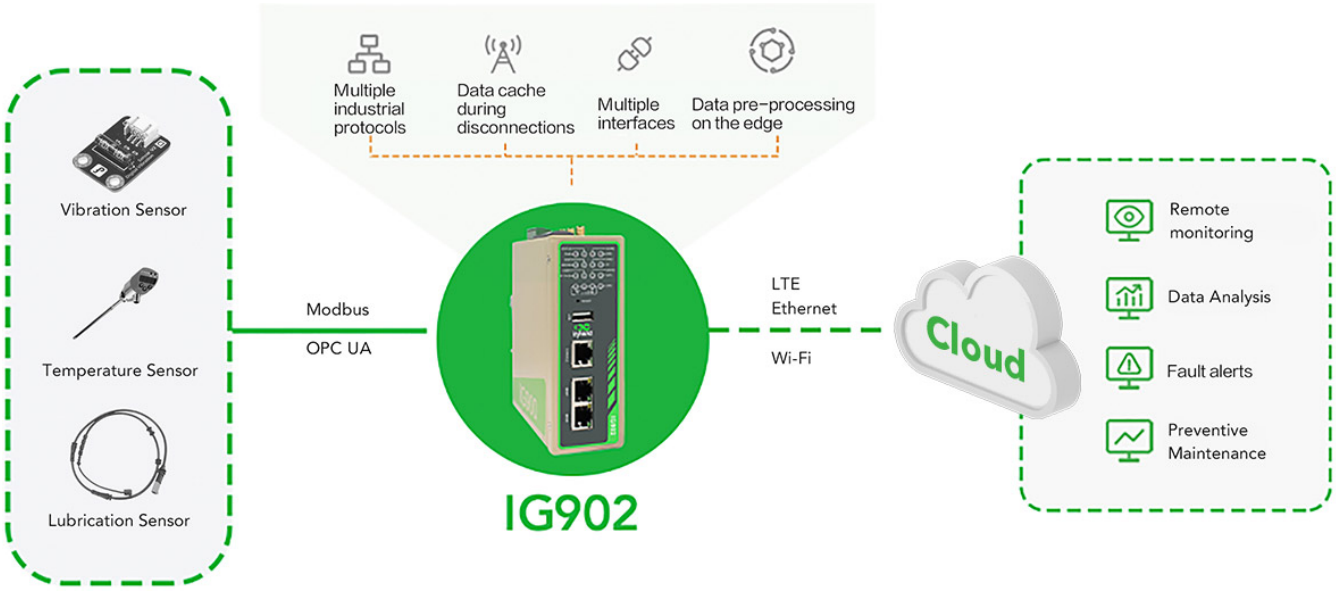
Background :

As important basic rotating machinery parts, bearings are widely used in a variety of industrial fields. According to statistics, about 30% of mechanical failures worldwide are caused by the damage of bearings every year, so its running state has a huge impact on the normal operation of equipment.

During machinery operation, a lack of oil, collision, friction and other factors may lead to an increase in bearing temperature, causing "burning shaft" phenomenon. Fatigue wear, indentation, cracks, surface peeling, adhesive and impurities can incur abnormal vibration and damage of bearings; in worse cases, the anchor bolt

may vibrate or break, with bearing burned out and bearing bush flying out. Therefore, it is necessary to monitor the running state of bearings in order to avoid sudden failures.

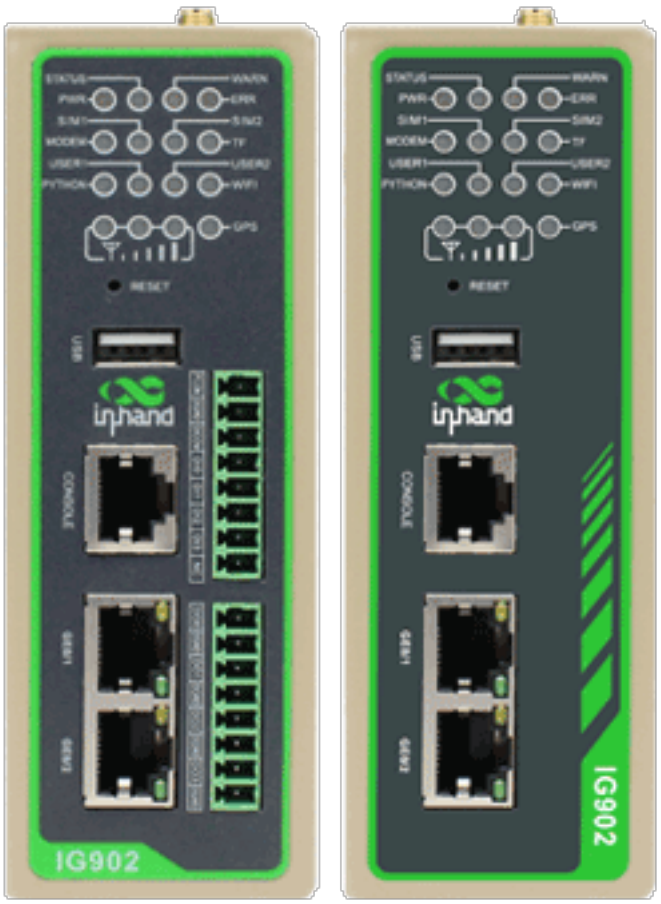
InHand's Remote Monitoring Solution for Bearings:



InHand Networks offers a remote monitoring solution for bearings featuring its InGateway902 industrial edge computing gateway, helping collect data of the bearing status (vibration, lubrication, temperature, abrasion, etc.) and upload them to the cloud for analysis and preventive maintenance.

The solution consists of the bearings, sensors installed on bearings (such as vibration sensor, temperature sensor, lubrication sensor, etc.), the IG902, the Device Manager and a third-party cloud. Data collected by those sensors are transmitted to the IG902, where the protocols of the sensors are analyzed. The IG902 then sends the data to the cloud in the standard format. In the cloud, data are stored and analyzed, so that the operation status of the bearings can be evaluated, and maintenance staff are advised what to do with those bearings.

Advantages:



1. **Fast, secure and reliable connectivity**
   Available with LTE CAT4/CAT1 cellular networks, Wi-Fi and wired connection, multiple link redundancy technologies and security strategies, the IG902 provides fast, secure and uninterrupted network access, ensuring that devices are constantly connected.

2. **Easy configuration for data acquisition**
   The IG902 supports multiple PLC protocols and major IoT clouds. Onsite devices can be connected to the cloud through simple configuration in minutes.

3. **Powerful computing capabilities, intelligent data processing**
   Built with ARM Cortex-A8 processor, the IG902 features powerful edge computing and data analysis capabilities. Data collected from PLCs can be preprocessed on the edge, relieving the load in the cloud while quickening response to the data source.

4. **Support for remote access, easier maintenance**

The IG902 can work with the InConnect remote access service, enabling engineers to maintain PLC data anytime anywhere.