OpreX™ Data Acquisition | Application Note

Cooling Water Pump Failure Prediction Monitoring

Wide Area Monitoring System

YOKOGAWA
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Are you having any problems like this?

Equipment Cooling water pump equipment

Problems Detecting the signs of cooling water pump failure in various places in the plant

- Cooling water pumps are used in various places in the plant.
  Deterioration of the rotating equipment and other components that make up the cooling water pumps can lead to failure of the pumps. Furthermore, if the cooling water pumps fail and the cooling water temperature cannot be maintained, the equipment that needs to be cooled may also be damaged.
- Cooling water pumps are located in various places in the plant, which require many man-hours to inspect.

Easy to start using! Wide Area Monitoring System solves remote monitoring issues

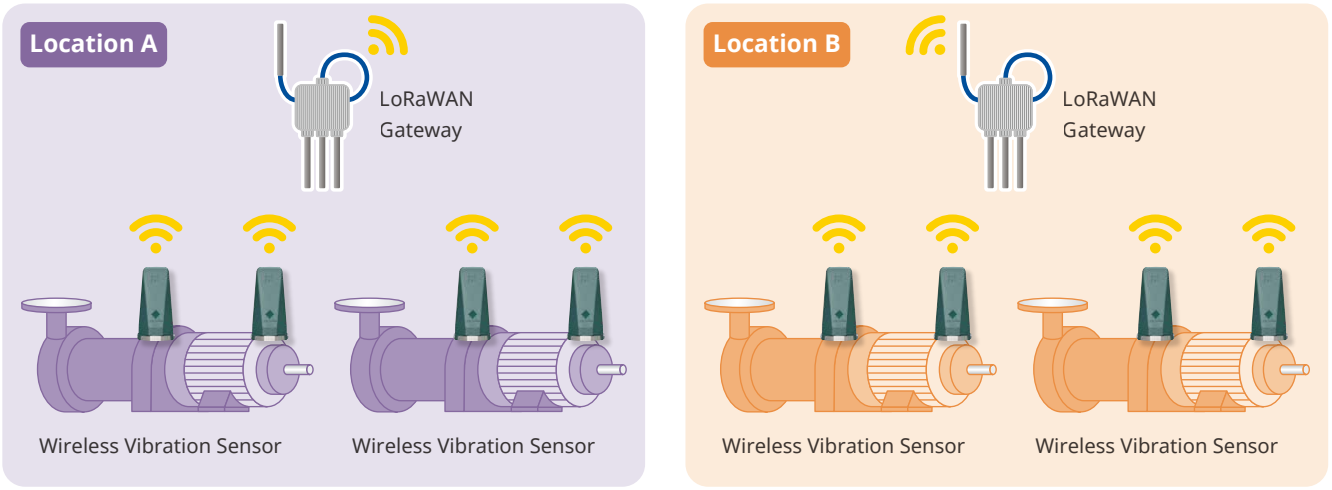
Facilities that exist in a wide area can be integrated and managed through remote monitoring.
The cloud can be used to reduce time and costs, and to efficiently build monitoring systems.

Value through problem solving

- ☑ By capturing changes in the condition of cooling water pumps and motors with vibration sensors, cooling water pump parts can be replaced before failure occurs. This prevents cooling water pump failure and damage to the equipment to be cooled.
- ☑ The number of man-hours spent on patrol inspections can be reduced.

Proposed System Configuration

Wireless vibration sensors are installed at locations where pump and motor vibration can be measured. The measured vibration values are aggregated into the Wide Area Monitoring System, and the AI (State Change Detection Service) learns the vibration values under normal conditions and creates a model. Whenever there is a change in the vibration values of pumps and motors that deviates from the normal state, the AI model detects the change. This enables early detection of changes in the condition of pumps and motors, leading to replacement of parts before they fail. By applying this system to cooling water pumps in various locations in the plant, it is possible to monitor all cooling water pumps at once to see which ones are showing abnormalities. Furthermore, the Wide Area Monitoring System is scalable to enable combined monitoring of cooling water temperature and pressure, as well as equipment data, allowing for flexible proposals tailored to each case.



▶Devices

Category	Product	Notes
Cloud	Wide Area Monitoring System, State Change Detection Service	Data acquisition interval: 5 min. or more, 50 measured data
Communication	Wireless Communication Connection License	
Comm. devices/data acquisition	LoRaWAN Gateway	
Sensor	Wireless Vibration Sensor	

▶Industries All industries that use pumps

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