

Predictive Maintenance Using Vibration and Rotational Speed Data from Rotating Machinery

Wide Area Monitoring System

Are you having any problems like this?

Equipment

Equipment containing an inverter and a rotating machine controlled by the inverter

Problems

Production stoppage due to sudden abnormalities



- ▶ Rotating machines are controlled by inverters but if they break down, product quality cannot be maintained and production may stop.
- ▶ Even when using a sensor to monitor the vibration of a rotating machine, it is not possible to uniformly determine the monitoring threshold because the speed is changed using an inverter.



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.

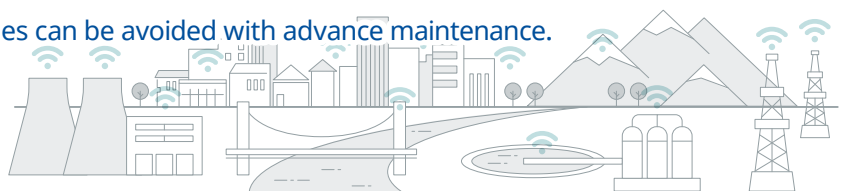
The cloud can be used to reduce time and costs, and to efficiently build monitoring systems.



Value through problem solving

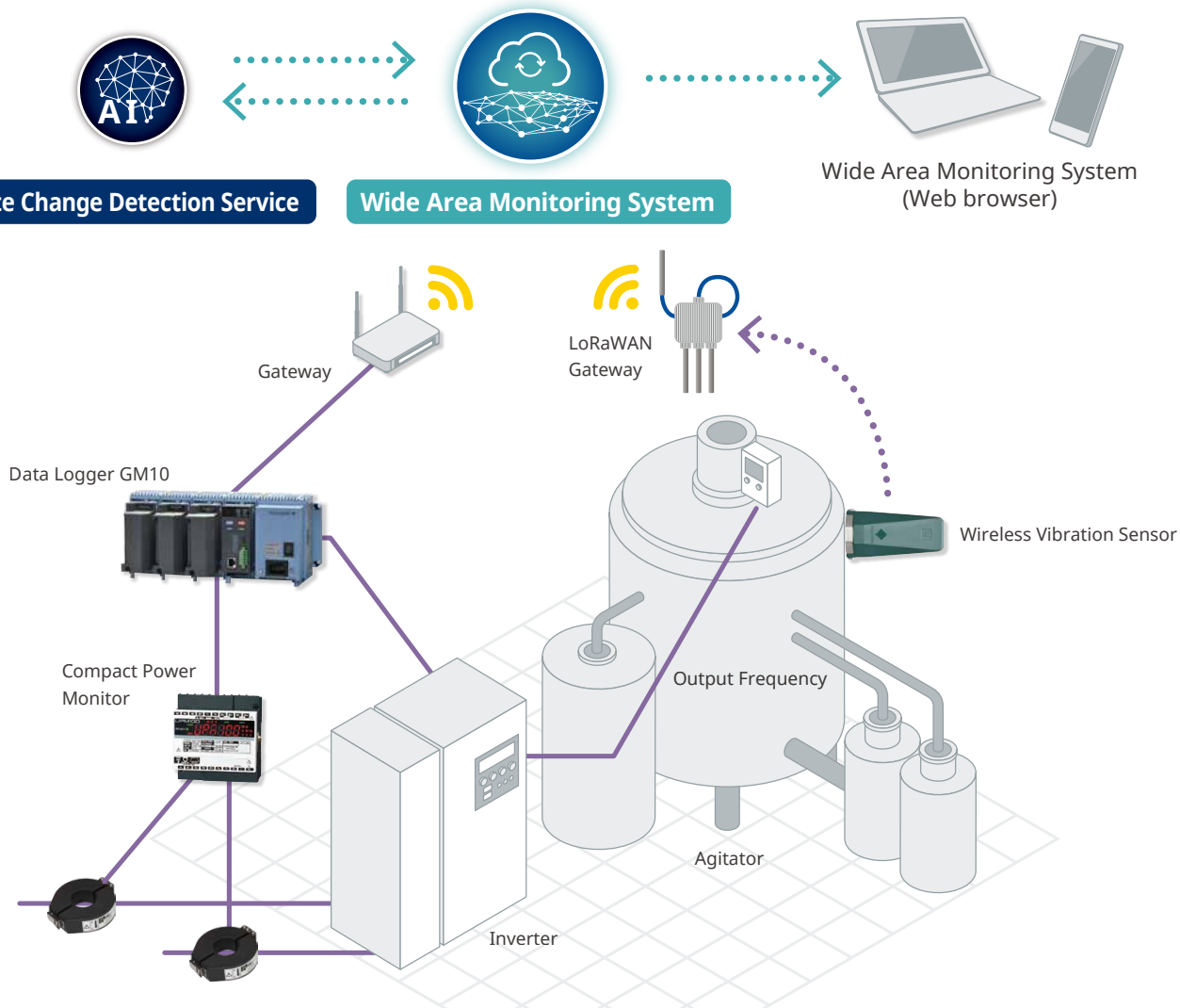
- ✓ It is difficult to monitor rotating machinery that uses inverter control for signs of abnormalities using vibration monitoring alone. Even so, it is possible to detect "something different" and perform maintenance before any abnormalities appear in the equipment.

- ✓ Sudden production stoppages can be avoided with advance maintenance.



Proposed System Configuration

The output frequency of the inverter and the vibration value of the wireless vibration sensor installed in the rotating machine controlled by the inverter are integrated into the monitoring system. The normal state of the output frequency and vibration values, which change due to inverter control, are learned using the state change detection service. This allows only warnings and alerts to be extracted when equipment malfunctions occur. Since it is possible to detect abnormalities in rotating machinery and inverters before they affect production, it helps to prevent a decline in product quality and production stoppages.



► 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, Gateway/Data Logger	
Sensor	Wireless Vibration Sensor, Compact Power Monitor	

► Industries Chemical, all industries with inverter-controlled rotating machinery

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