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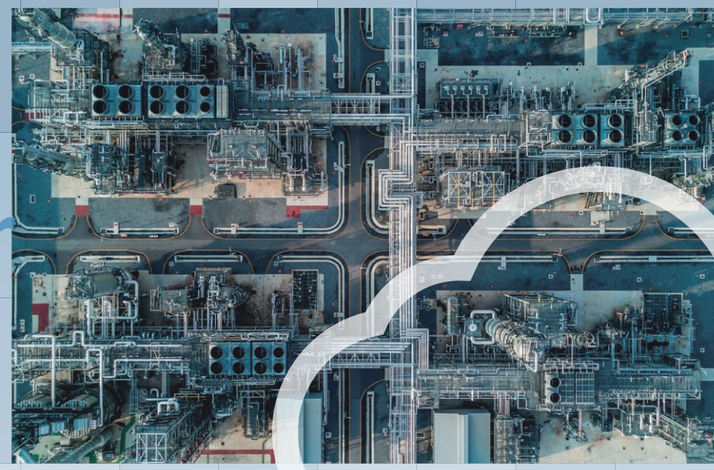
WIRELESS CONDITION MONITORING SYSTEM

ZARK Series

Machine Dossier



ZARK Series

infiSYS 3.0

SHINKAWA

ZARK serves you in **2 ways**

Cloud service | On-premise

Machine Dossier

A cloud based service for your rotation machine condition monitoring and preventive maintenance

ZARK helps to improve your plant KPIs with better monitoring capabilities on rotation machine conditions with fewer unexpected stops, better in-time maintenance.

ZARK Series & **Machine Dossier**

The choice for the customers who wish to

- Start with low initial deployment cost.
- Get the machine condition information right after deploying the sensor.
- Not to install a computer on site.

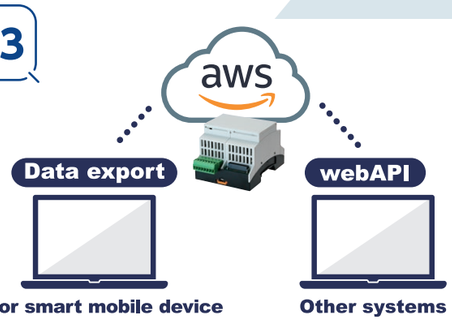
01

Monitoring remote machine conditions

02

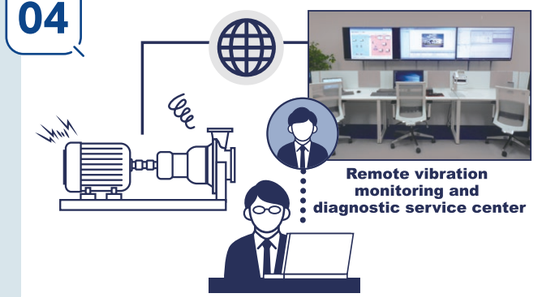
Speed up the trouble-shooting as a teamwork

03



Multi-system integration

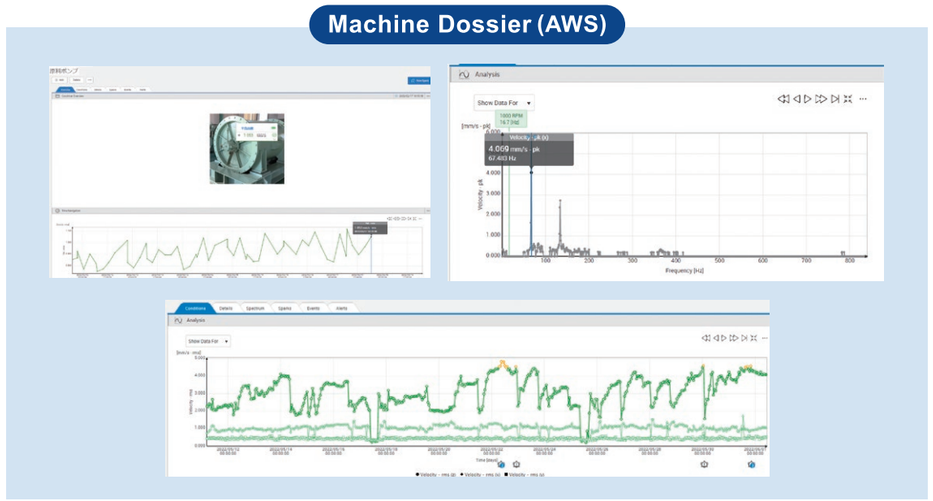
04



Vibration diagnostic service (optional) for remote trouble-shooting support

*Request based service by accessing the customer's site on Machine Dossier.

Solution Map of Machine Dossier



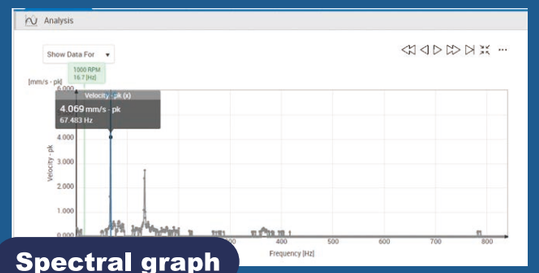
*ZARK Nano and wired sensors; Max 16 ch / ZARK X8 II

Cloud service » Machine Condition Monitoring Service

Machine Dossier

User friendly GUI	Graph display functions such as zoom, event info, spectrum band, harmonic cursor and side band, etc. for easy machine monitoring and diagnostics.
Share of media files	Besides the measurement data from sensors, documents, images, sound or video files can also be shared easily within the support team.
Sparks for teamwork based trouble-shooting	Sparks features as a chat-like communication as well as media file share to facilitate the teamwork-based trouble-shooting process.
Analog process data capability	Not limited to vibration data, analog process data such as temperature, pressure etc. can also be collected and monitored.
Data export	The measurement data collected and managed by Machine Dossier are open to customers for various usage. The data can be exported as text files or retrieved by other systems via web APIs.
Reporting	Status report: Summary of each measurement point status in specified period. Plot report: Trend graph of each measurement point in specified period.

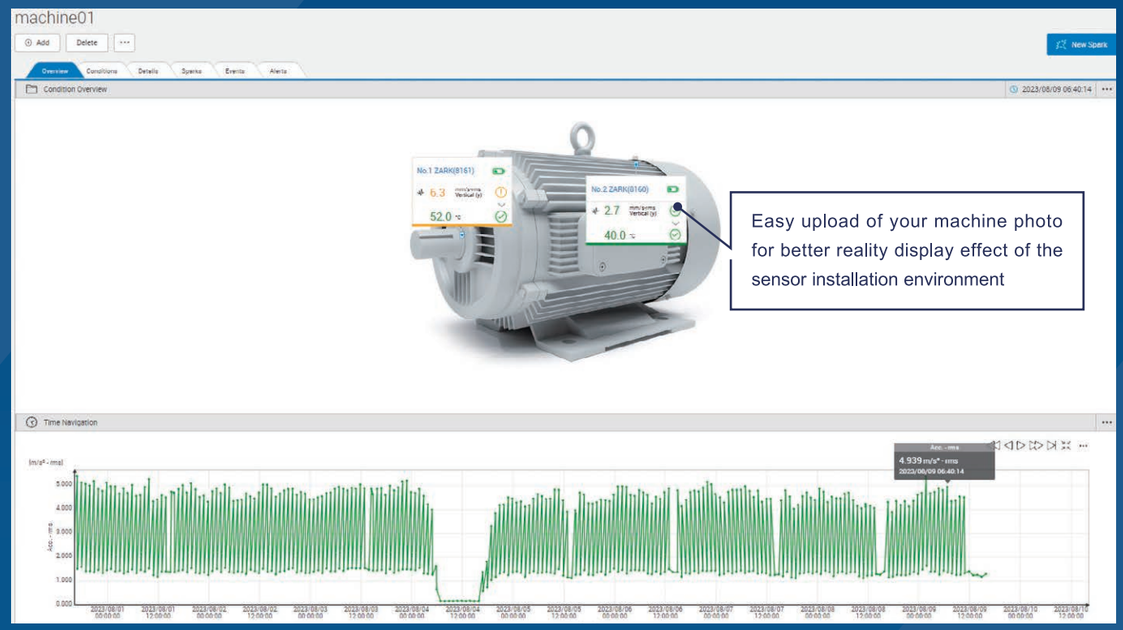
Trend graph

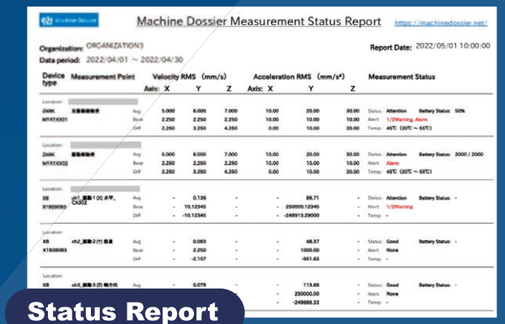


Spectral graph

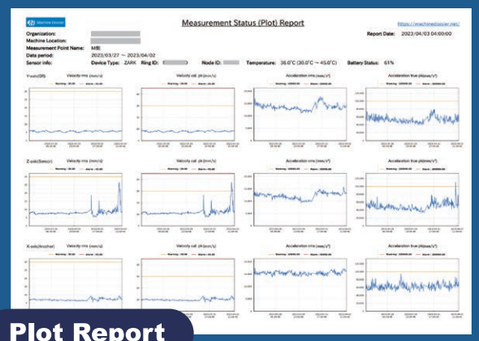
Waveform graph

Machine condition display





Status Report



Plot Report

ZARK serves you in **2** ways

Cloud service

On-premise

infiSYS 3.0

An on-premise solution for your rotation machine condition monitoring and preventive maintenance

ZARK helps to improve your plant KPIs with better monitoring capabilities on rotation machine conditions with fewer unexpected stops, better in-time maintenance.

ZARK Series & **infiSYS 3.0**

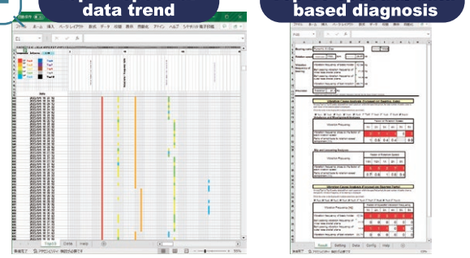
The choice for the customers who wish to

- **Keep the system running in the manageable on-premise network environment.**
- **Keep all the measurement data stored on-premise.**
- **Integrate with other local systems via Modbus.**

01

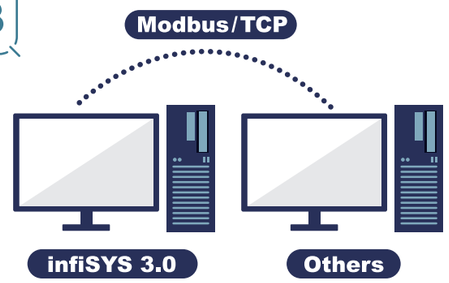
Options to match the customer's environment

02



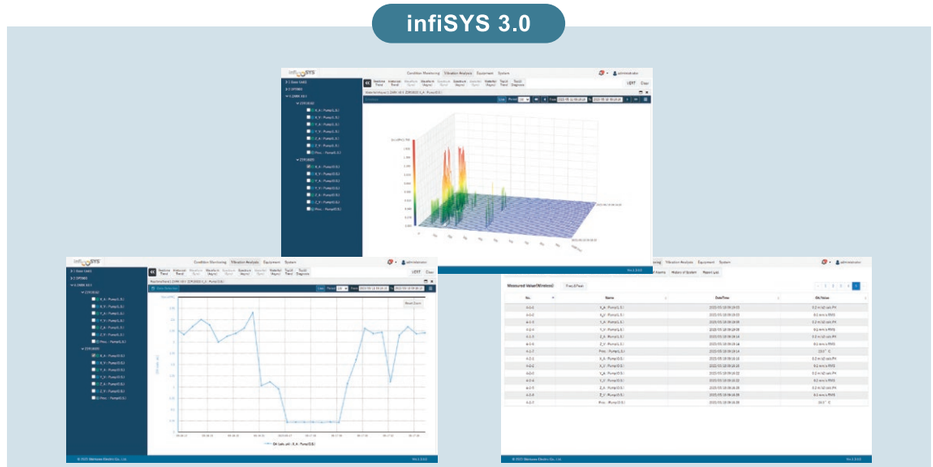
Tracking machine condition status changes

03



Integrating with other systems

Solution Map of infiSYS 3.0

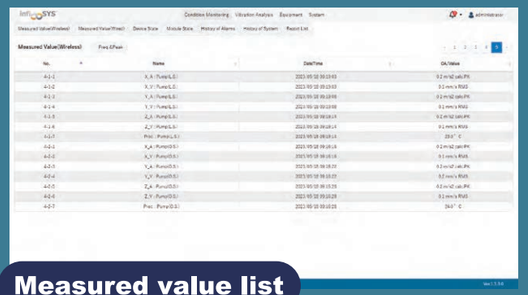


On-premise Machine Condition Monitoring System

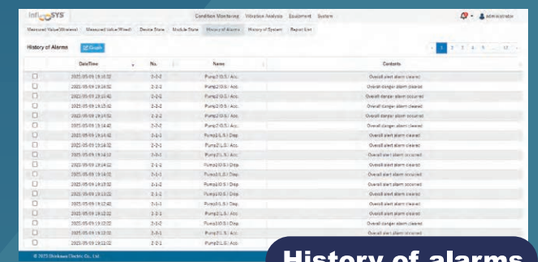
infiSYS 3.0

Web based display	Accessible from multi-users using web browsers.
Analysis	Multiple graph display for easy machine condition analysis.
Graph data export	Exported data (CSV) helps users for easy data customization.
Report data export	Export of trend and spectrum data of specified measurement data point for customized report generation.
Simplified diagnostic tools output	Trend confirmation and simplified diagnosis can be performed using frequencie.
Modbus/TCP (Server)	Serves the request from Modbus clients with measured values and status of specified measurement point.
Modbus/TCP (Client)	Retrieve process data from Modbus servers (e.g.PLC, SCADA) for monitoring and analysis in infiSYS 3.0.

Basic analysis display

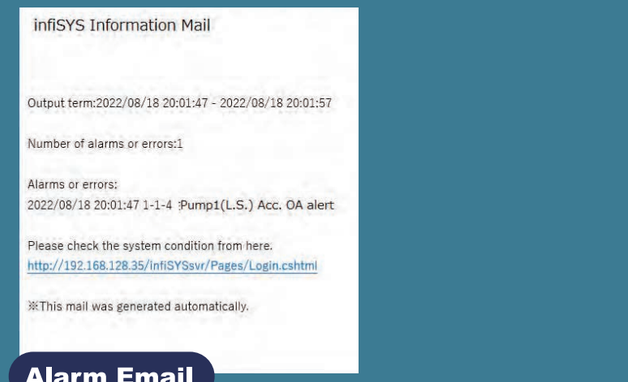


Measured value list

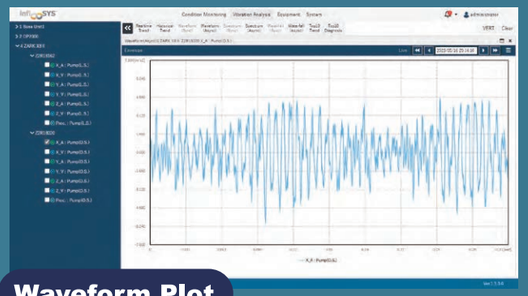


History of alarms

Real-time trend

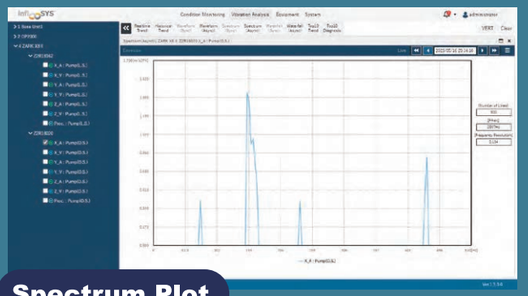


Alarm Email



Waveform Plot

Waterfall Plot



Spectrum Plot

Cloud service; Machine Dossier

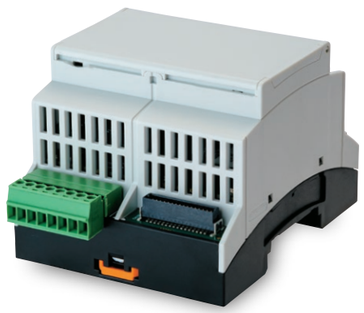
On-premise; infiSYS 3.0

ZARK Nano
(Battery-powered Receiver (Sensor-integrated))
Model ZN-4A

ZARK Nano

- 3-Axis vibration (frequency range: 5 to 2,000 Hz) and temperature measurement
- Bluetooth® communication with ZARK X8II
- WakeUp capability to catch the off-the-schedule abnormal vibration
- Small size for broader installation target
- OA and 6 frequency band based alarm thresholds
- Internal buffer for temporary communication interruption

Model	ZARK Nano: ZN-4A
Radio system	Bluetooth® Low Energy(BLE)5.0 with ZARK X8II
Vibration measurement	3-Axis MEMS(156.8 m/s2 peak), 5 ～ 2,000 Hz(±3 dB)
Temperature measurement	-20～+85℃
Power supply	1/2AA, 3.6 V lithium thionyl chloride battery(replaceable)
Battery life (typical)	Up to 3 years (12h interval) or approx. 4000 times of data collection/transmission. Environment dependent.
Communication distance	40 m with ZARK Nano (Line of Sight, environment dependent)
Measurement data (via ZX-3A0、ZX-3A1)	● Acceleration(per axis)：rms, true peak, waveform ● Velocity(per axis): rms, cal.peak, spectrum (top 200) ● Temperature
Measurement data(via ZX-3A2)	● Acceleration(per axis)：rms, spectrum (top 10), waveform ● Velocity(per axis): cal.peak ● Temperature
Data collection interval	1 h, 2 h, 4 h, 6 h, 12 h or 1 day, wakeup configurable
IP	IP66
Dimensions・Mass	28 mm(Φ) × 50 mm(H), about 75 g(battery included)



Cloud service; Machine Dossier

ZARK X8Ⅱ Hub Model ZX-3A0
ZARK X8Ⅱ Hybrid Hub Model ZX-3A1

On-premise; infiSYS 3.0

ZARK X8Ⅱ Hub Model ZX-3A2

ZARK X8Ⅱ

- Hub type for multiple wireless ZARK Nano data transfer(Up to 32 for Model ZX-3A2, 16 for Model ZX-3A0/3A1)
- Hybrid type for both Hub capability and multi-channel/multi-type wired sensor signal processing (Model ZX-3A1)
- OA and 6 frequency band based alarm thresholds
- Internal buffer for temporary communication interruption

Model	ZARK X8II Hub:ZX-3A0
Radio system	Bluetooth® Low Energy(BLE)5.0 with ZARK Nano IEEE 802.11b/g/n with WLAN AP
Power supply	100 ～ 240 VAC, 50/60 Hz
Communication distance	40 m with ZARK Nano 20 m with WLAN AP (Line of Sight, environment dependent)
Connection with ZARK Nano	Up to 16 ZARK Nanos
IP	IP65(enclosure)
Enclosure dimensions	190 mm(W) × 280 mm(H) × 130 mm (D) Excluding the protrusion and the mounting metal parts

Model	ZARK X8II Hub:ZX-3A2
Radio system	Bluetooth® Low Energy(BLE)5.0 with ZARK Nano IEEE 802.11b/g/n with WLAN AP
Power supply	100 ～ 240 VAC, 50/60 Hz
Communication distance	40 m with ZARK Nano 20 m with WLAN AP (Line of Sight, environment dependent)
Connection with ZARK Nano	Up to 32 ZARK Nanos
IP	IP65(enclosure)
Enclosure dimensions	190 mm(W) × 280 mm(H) × 130 mm (D) Excluding the protrusion and the mounting metal parts

Model	ZARK X8II Hybrid Hub: ZX-3A1
Radio system	Bluetooth® Low Energy(BLE)5.0 with ZARK Nano IEEE 802.11b/g/n with WLAN AP
Wired sensor channels/types	Up to 8 / Accelerometer, displacement, analog -12 V ～ +12 VAC/VDC
Input frequency range	2～18,300 Hz(±3 dB)
Rotation pulse channel	1 (TTL level)
Power supply	100～240 VAC, 50/60 Hz
Communication distance	40 m with ZARK Nano 20 m with WLAN AP (Line of Sight, environment dependent)
Wired sensor channel data	● Vibration - acceleration：rms, ture peak, spectrum(velocity disabled), waveform - velocity: rms, cal.peak, spectrum(acceleration disabled) - displacement: pk-pk, spectrum, waveform ● Rotation speed: RPM ● Analog data
Data collection interval	1 h, 2 h, 4 h, 6 h, 12 h or 1 day
Connection with ZARK Nano	Up to 16 ZARK Nanos
IP	IP65(enclosure)
Enclosure dimensions	280 mm(W) × 280 mm(H) × 130 mm (D) Excluding the protrusion and the mounting metal parts

Please check website (https://www.shinkawa.co.jp/eng/) for detailed specifications and certificate country information.