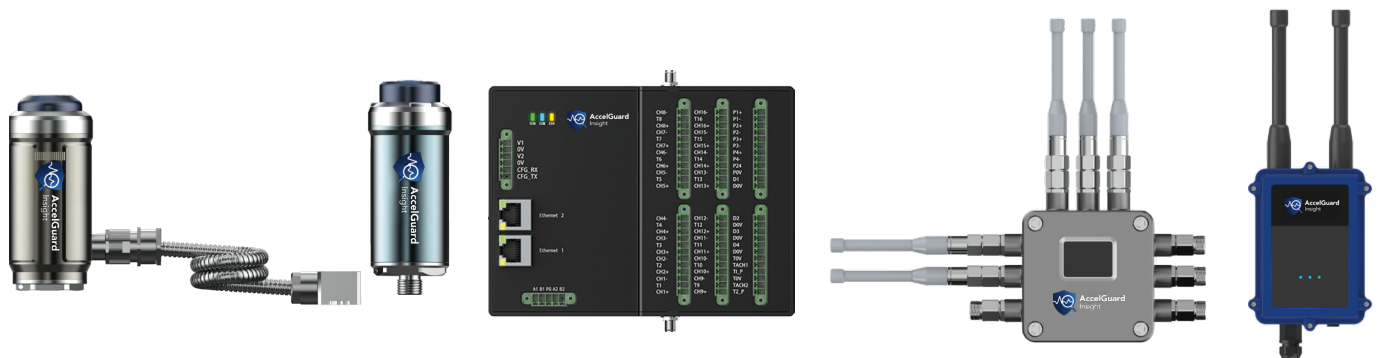


Sumitomo Drive Technologies

CMS

Condition Monitoring System



Conditioning Monitoring System

At Sumitomo Drive Technologies, we understand the fundamentals of operational impact and the importance of having measures in place before disruptive issues begin. Especially in high-stakes industrial landscape, Condition Monitoring System (CMS) is more than just a suite of sensors; it is a comprehensive insurance policy for your assets.

By integrating real-time diagnostics with predictive analytics, we strive to achieve more than just technical oversight but also securing operational resilience. The transition to a CMS-led strategy ensures that capital expenditure is optimized, human capital is deployed where it is most effective, and environmental, social, and governance (ESG) targets are met through enhanced energy efficiency and risk mitigation.

Ultimately, a CMS is not merely a technical upgrade—it is a strategic investment in the longevity, safety, and profitability of your global infrastructure.





Our CMS Solutions

Wireless CMS

AccelGuard-Insight Wireless CMS integrates acquisition of tri-axial vibration, temperature, motor rotation speed and acoustic data. Suitable to monitor most of the equipment with constants speed operation like conveyor, mixer, pumps etc.

Features:

- Detail vibration analysis with full waveform and FFT
- Easy setup, no wiring or power source on sensors
- Up to 5 years battery life with replaceable battery
- 1x gateway connects to 40 sets wireless sensors, 300m line of sight range
- Data integration through Modbus, OPC, API, MQTT
- ATEX sensor and gateway options

Wired CMS

AccelGuard-Insight Wired CMS provide comprehensive live monitoring package. Acquisition station supports external speed and process measurement. Data was captured every 2s, assuring fastest respond and constant monitoring for critical assets and equipment with frequent start-stop and change of operating speed.

Features:

- 8/16 channels
- 2x channels for speed measurement and 4x channels for process measurement (4-20mA or +/-20V)
- Ethernet, fiber, WIFI, 4G, 5G communication modes.
- Support DCS/PLC/SCADA on-site control communication.
- ATEX sensor and gateway options
- Powerful dual core 64-bit Cortex A53 computing capability.

Our Wireless Solutions



Mobile App Support

Easy configuration and spot monitoring on-the-go.

KEY BENEFITS



Early warning of potential failures



Reduced downtime & maintenance cost



Extended asset life & reliability



SPECIALISED SENSORS

AG-30MS Split Sensor

Wireless Vibration Split Sensor



Designed for measuring point with limited access.



Ideal for inside motor adapter, covers or cooling tower gearboxes.

AG30F Oil Sensor

Wireless Oil Condition Sensor



Measures

- a) Oil Viscosity
- b) Oil Density
- c) Dielectric constant
- d) Oil Temperature



Great tool to monitor oil viscosity, moisture and oxidation.



VIBRATION MONITORING

AG-30M-ATEX

Wireless Vibration Sensor



Easiest to install



Data logging sequence

- a) Trend Data – 10 mins (5 mins max)
- b) Spectrum – 4 hour (10 mins max)
- c) Long Wave – 2 days (1 hour max)



5 years Battery life + replaceable Battery



Bluetooth to phone app for spot monitoring



300 m line of sight to gateway



IP68



ATEX/ECX Ex

AG5EA Gateway

Wireless Data Gateway



WIFI, 4G, Ethernet



45 sensors connection capacity



IP68



Local or Cloud Server



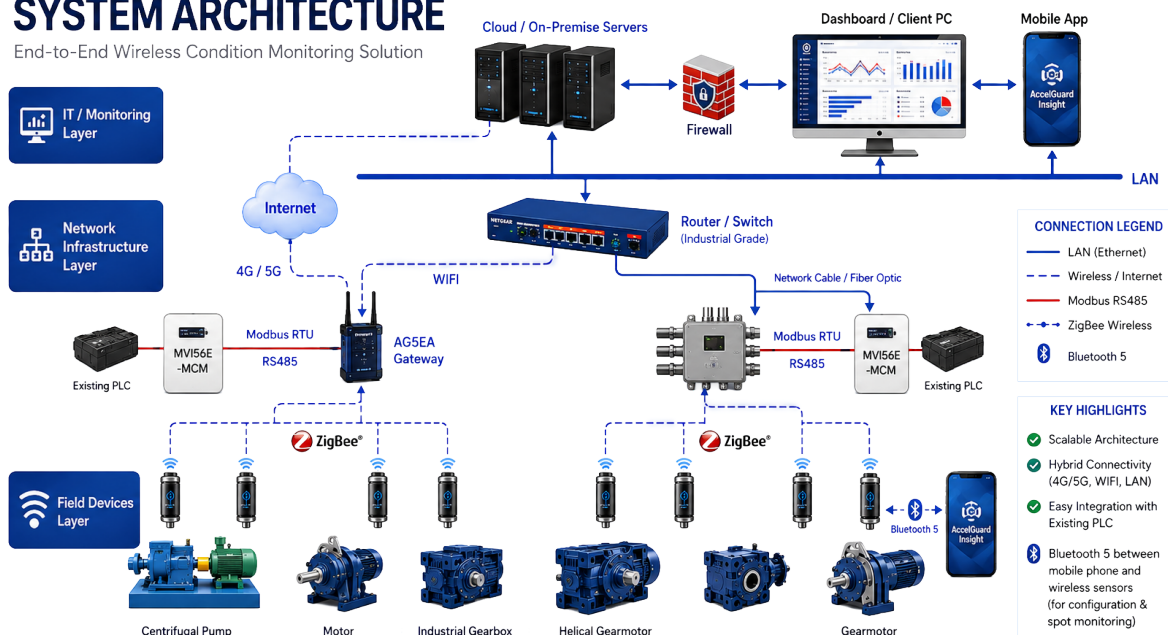
ATEX/ECX Ex (option)

Real-Time, Predictive, Intelligent

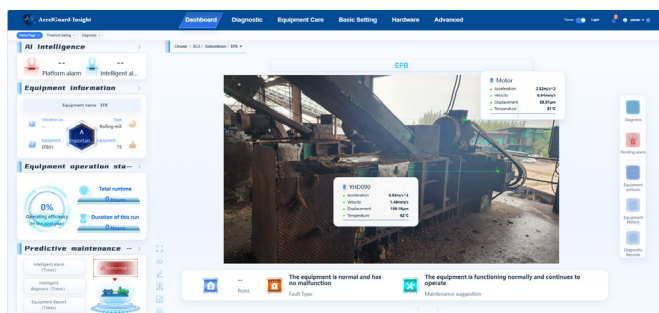
Connection Diagram

SYSTEM ARCHITECTURE

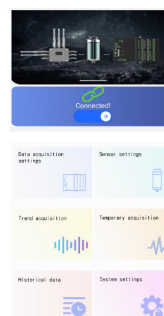
End-to-End Wireless Condition Monitoring Solution



Monitoring Software



Mobile App



Wireless Sensor Specification

Model	AG-50M	AG-30M-ATEX
Sensor Type	Triaxial (Horizontal, Vertical, Axial)	
Sensing Unit	ADI MEMS	
Vibration Range	XYZ: $\pm 60g$ peak	
Acceleration Response	Z: 0.1-8 KHz ($\pm 3dB$) XY: 0.1-6 KHz ($\pm 3dB$)	
Sampling Frequency	Max. 32KHz Max. 32KHz	
Analysis Frequency	High frequency: 6250Hz,12500Hz Low frequency: 1563Hz, 3125Hz	
Waveform Length	8K,16K,32K,64K	
FFT Spectrum Line	3200, 6400,12800, 25600	
Long Time Waveform	512K (Frequency max. 12,500Hz)	
Measuring Interval	10 minutes for trend data 4 hours for time waveform (suggested)	
Output Mode	Acceleration overall value, RMS,time waveform, spectrum	
Temperature Measuring Range	-40°C to 120°C(-40°F to 248°F) (This range refers to the measurement range and not the device operating condition. Device operating conditions are limited by the internal components and battery)	
Radio Frequency Standard	IEEE 802.15.4	
Radio Frequency Range	2.4 GHz ISM band	
Wireless Communication Distance	300m line of sight (actual distance depends on site obstacles, gateway antenna type and direction, site locationselection, etc.)	
Battery Life (replaceable)	Up to 3 Years	Up to 5 Years

AG5EA Gateway Specification

ZIGBEE Communication	Interface	N-Type Female Connector
	Network Topology	Star
	Radio Standard	IEEE 802.15.4
	Wireless Frequency Range	2.4 GHz ISM Band
	Wireless Frequency Power	16dbm (maximum)
	Wireless Communication Distance	300 meters line of sight. (Actual range depends on site obstacles, gateway antenna type, and orientation of the sensor to the gateway antenna.)
Wifi Communication	Interface	N-Type Female Connector
	Radio Standard	IEEE 802.11 a/b/g/n/ac
	Wireless Frequency Range	2.400GHz ~ 2.4835GHz 5.18GHz ~ 5.845GHz
	RF Output Power (peak)	16dbm (maximum)
4G Communication	Interface	N-Type Female Connector
	Support Frequency Bands	Global bands
	RF Output Power (peak)	33dbm (maximum crest GSM)
Ethernet	Interface	RJ45
	Communication Standard	1000 Base-TX/100 Base-TX
	Transmission Rate	1000Mbps
	Transmission Medium	Category 5 Twist-Pair
Mechanical Parameters	Body Material	Cast Aluminium
	Shock Resistance	1 meter drop onto concrete
	Weight	1000grams
	Dimension	200mm x 150mm x82mm
	IP Rating	IP67 Dust & Water resistant
Power Supply	AC (Default)	AC220V
	DC (Optional)	DC 24V
	POE (For LAN version)	Power on Ethernet
Operating Conditions	Operating Temperature	-40°C to 70°C
Storage Capacity	Non-Volatile Storage	8G (For temporary data storage when gateway is disconnected to server.)

Our Wired Solutions

WIRED SENSOR

AG102T VIBRATION & TEMPERATURE SENSOR

High-performance industrial sensor for continuous measurement of vibration and temperature.



Vibration
(Acceleration)



Temperature



Robust &
Durable



ATEX/IECEx
Ex (Option)



WIRED ACQUISITION STATION

AG810 MULTI-CHANNEL ONLINE MONITORING MODULE

Multi-channel online monitoring system for key industrial equipment of nonsteady. It has 8/16/24 channels for vibration and temperature, 2 channels for RPM, 4 channels for process ($\pm 20V$ or 4-20mA), 2 channels for RS485.



Multi-channel
(8 / 16 / 24)



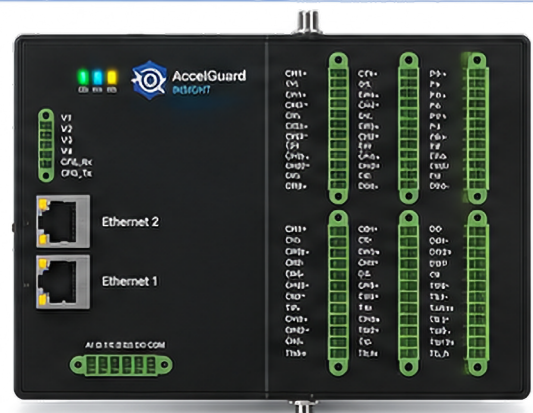
2 Channels
for RPM



4 Channels
for Process



2 Channels
for RS485

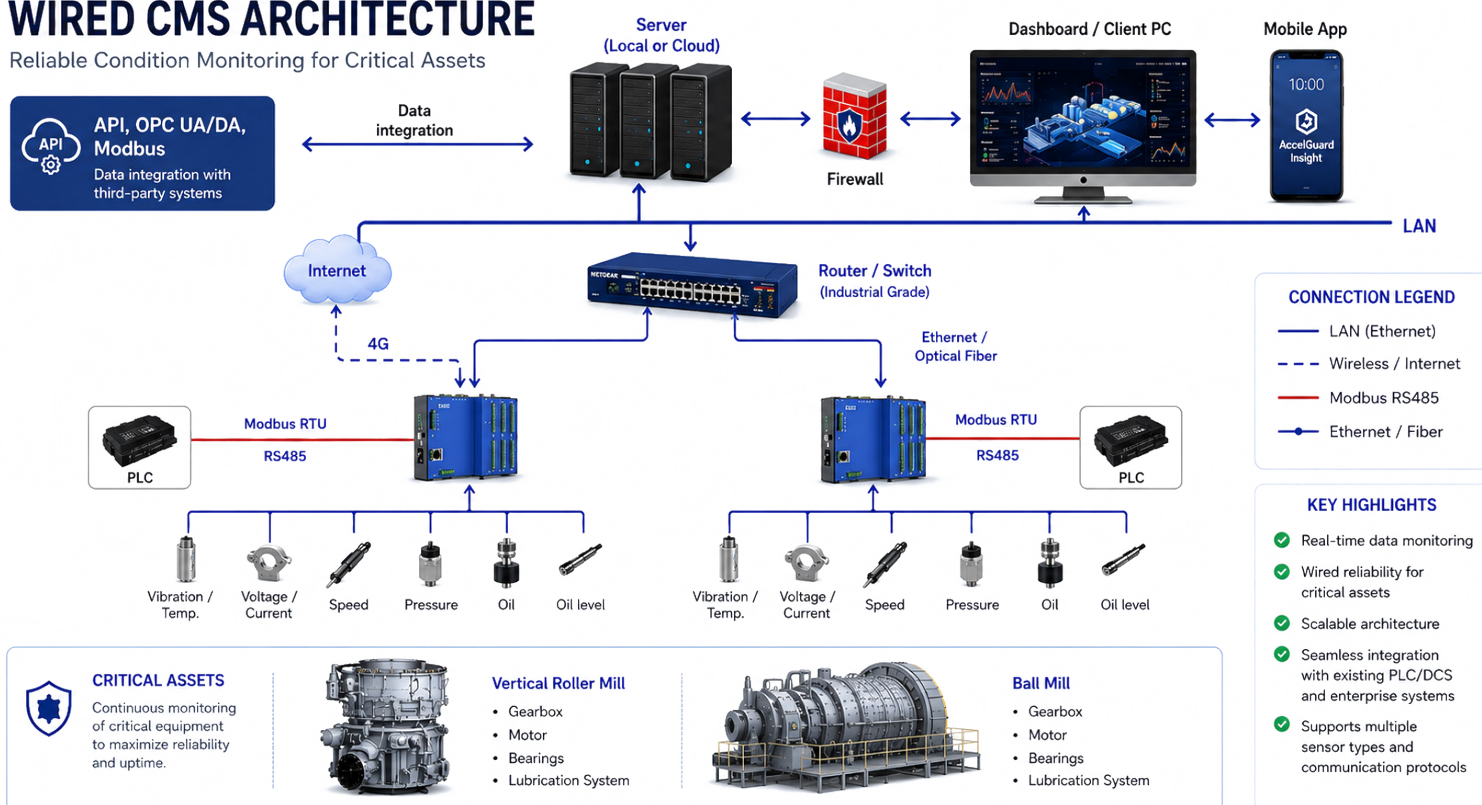


Real Time, Predictive, Intelligent

Connection Diagram

WIRED CMS ARCHITECTURE

Reliable Condition Monitoring for Critical Assets



Technical Specification

Acceleration Channel	Channel No.	8/16/24 options
	Input type	Non-Isolated Input
	Input Range	±20 V
	Input Impedence	>200 kΩ
	Dynamic Range	90dB
	Supported Sensor Types	IEPE constant current acceleration sensor
		Eddy current displacement sensor
		Temperature sensor, measuring range -40°C ~ 120°C (Machine surface temperature)
	Fault Self-Diagnosis	Automatic detection of acceleration sensor short circuit and open circuit
	Collection Interval	Min. 2s for overall value, 1 minute for time waveform
	Output	Overall value, RMS, Time Waveform, Spectrum etc.
	Sampling Rate	Max. 51.2KHz
	Analysis Frequency	Max. 20KHz
	Waveform Lengths	8K,16K,32K,64K,128K,256K,512K,1024K
Process Channel	No.of spectrum lines	3200,6400,12800,25600,51200,102400,204800,409600
	Long Time Waveform	4M for 8 channels 2M for 16 channels 1M for 24 channels
	Measurement Channel	4 (8/12 channels customized)
	Input Type	Isolated input, 1500V isolation
Digital Input Channel	Signal Range	4 ~ 20mA 2-wire, 3-wire, 4-wire ±20V
	Measurement Channel	2/4/8 Channels
	Input Type	Isolated input, 1500V isolation
	Signal Range	High level 3 ~ 24V, 0.016 Hz to 20 kHz (1 rpm ~ 1200K rpm)
	Sensor Type	PNP proximity switch 2-wire, 3-wire
		Pulse signal (TTL signal, level up to 24V)
Digital Output Channel	Sensor Power Supply	12V current limit 30mA
	Output Channel	2/4/8 Channels
	Output Type	Optocoupler Isolated Output, 1500V isolation
	Output Mode	Relay dry contact output

Multichannels Data Collector Module

Audio Channel	Measurement Channel	2 Channels
	Sensor Type	IEPE Noise Sensor
	Input Range	±20 V
RS485	Interface Channel	2 Channels
	Interface Isolation	2500V Isolation
	Interface Protocol Support	Modbus RTU
Ethernet	Interface	Dual network ports: eth0 Gigabit network port, eth1 100M network port
	Communication Standard	100Base-TX
	Transmission Medium	Category 5 twisted pair
Wifi Communication	Interface	SMA Female
	RF Standard	IEEE 802.11 a/b/g/n/ac
	Wireless Frequency Range	2.400GHz~2.4835GHz
	RF Output Power (peak)	12dbm (max.)
4G Communication	Interface	SMA Female
	Supported Frequency Band	LTE-FDD\LTE-TDD\WCDMA\TD-SCDMA\CDMA\GSM All Network Access
	RF Output Power (peak)	33dbm (max. peak GSM)
Mechanical Parameter	Body Material	Galvanized steel sheet + PC melt-resistant
	Dimensions	159mm x 120mm x 57mm
	Weight	500g
	Fixture Method	DIN35 rail
	Material	Carbon steel and 316 stainless steel optional
Power	Voltage Type	DC 8-36V
	Power	<15W
Storage	Industrial Grade NAND	1GB
	Industrial Grade SD Card	8GB
Environmental Parameters	Operating Temperature	-40°C ~ 70°C
Regulations	Electromagnetic Compatibility Standard	IEC 61326-1
	Wireless spectrum	ETSI EN 300 328
	Explosion-proof (EX version)	Exdb [ia Ga] IIC T4 Gb Zone 1 Zone 2 Class IIC gas environment
	Certification	CE

AccelGuard-

Equipment Live Status



Four Level Alarm Threshold Setting

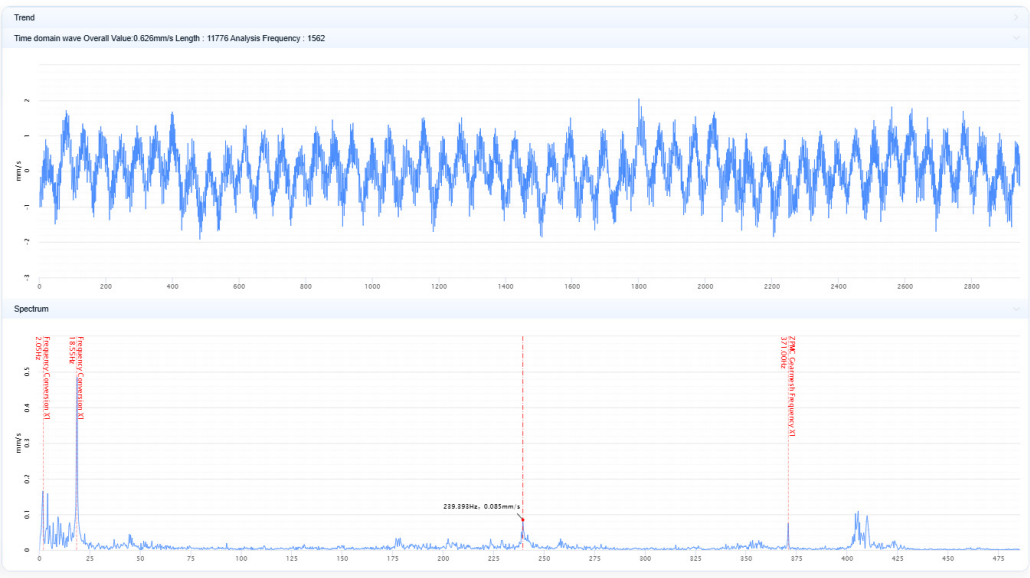
Serial Number	Device					Absolute alarm	
1	SMPH Testing/PX9 Drive Assembly/PX9 Output Z						
Serial Number	Collection definition	Level 1	Level 2	Level 3	Level 4	isUse	Action
1	Temp value (°C)					☒	View historical data
2	Low frequency acceleration (m/s²)					☒	View historical data
3	Velocity (mm/s)					☒	View historical data
4	High frequency value (m/s²)					☒	View historical data
5	Audio decibels (dB)					☒	View historical data
6	Bearing envelope (m/s²)					☒	View historical data
7	Gear envelope (m/s²)					☒	View historical data
8	High frequency kurtosis (m/s²)					☒	View historical data
9	Low frequency kurtosis (m/s²)					☒	View historical data



Long Term Trend Data



Waveform, Spectrum and Frequency Analysis

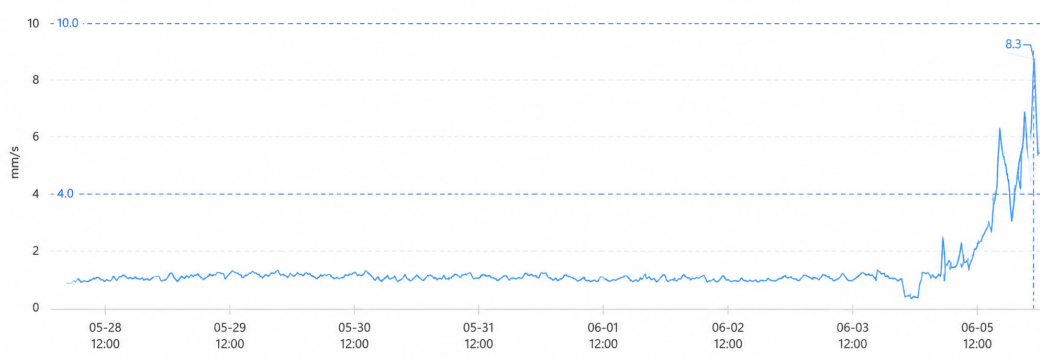


Application: Motor and Pump

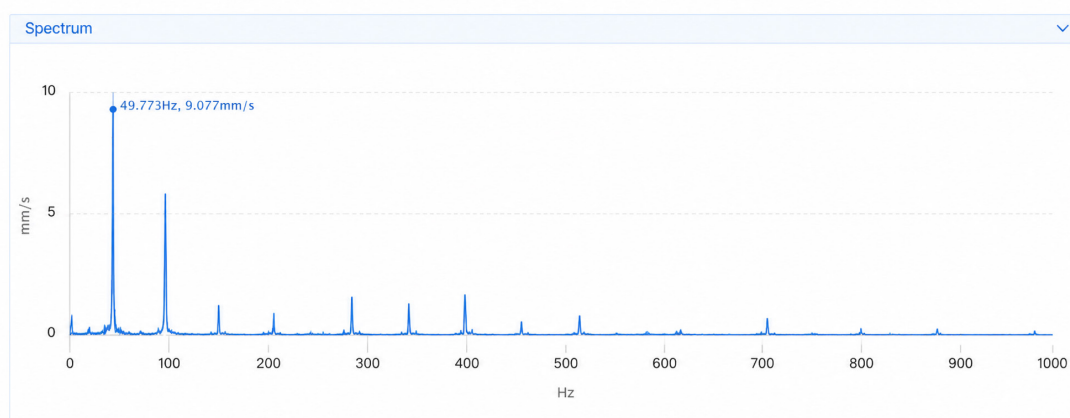
Motor speed: 2980rpm



Trend: Vibration velocity rising above alarm condition (preset at 4mm/s) with maximum velocity reaching 8.3mm/s before shutdown for inspection.



Spectrum: Clear impulse harmonics at interval of 49.7Hz (motor shaft rotating speed), indicating shaft rotation relative issue.

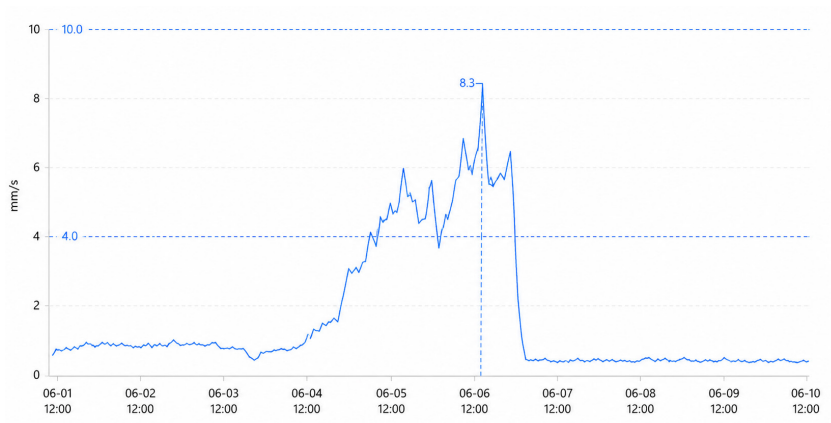


Study

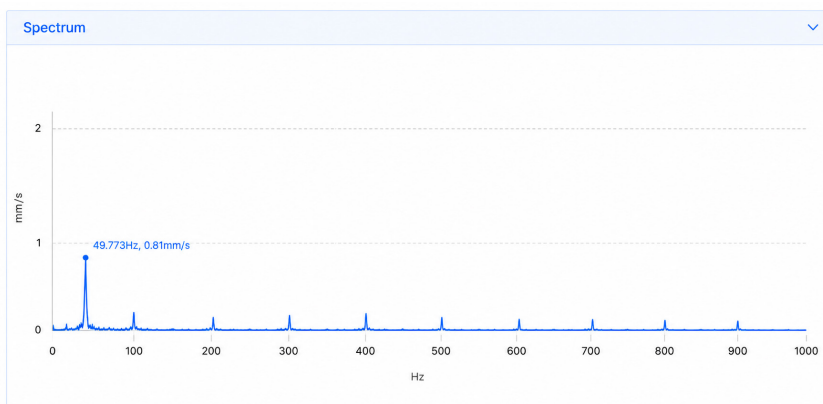
Findings: Coupling diaphragm damage.



Repair: Vibration reading back to normal after coupling replacement.



Spectrum After Repair: 1x amplitude reduced to 0.81mm/s, with low harmonic in 2x onwards





Sumitomo Drive Technologies

Our extensive Asia Pacific network, spanning Southeast Asia, Australia, New Zealand, Bangladesh, Pakistan, and Sri Lanka, offers customers a wide regional support network.

From inventory distribution and manufacturing to assembly, our dedicated teams ensure high quality, responsiveness, on-time delivery, and short lead times

- ★ Asia Pacific Headquarters
- ★ Manufacturing Hub
- Assembly & Service
- Service
- ▲ Regional Sales Office