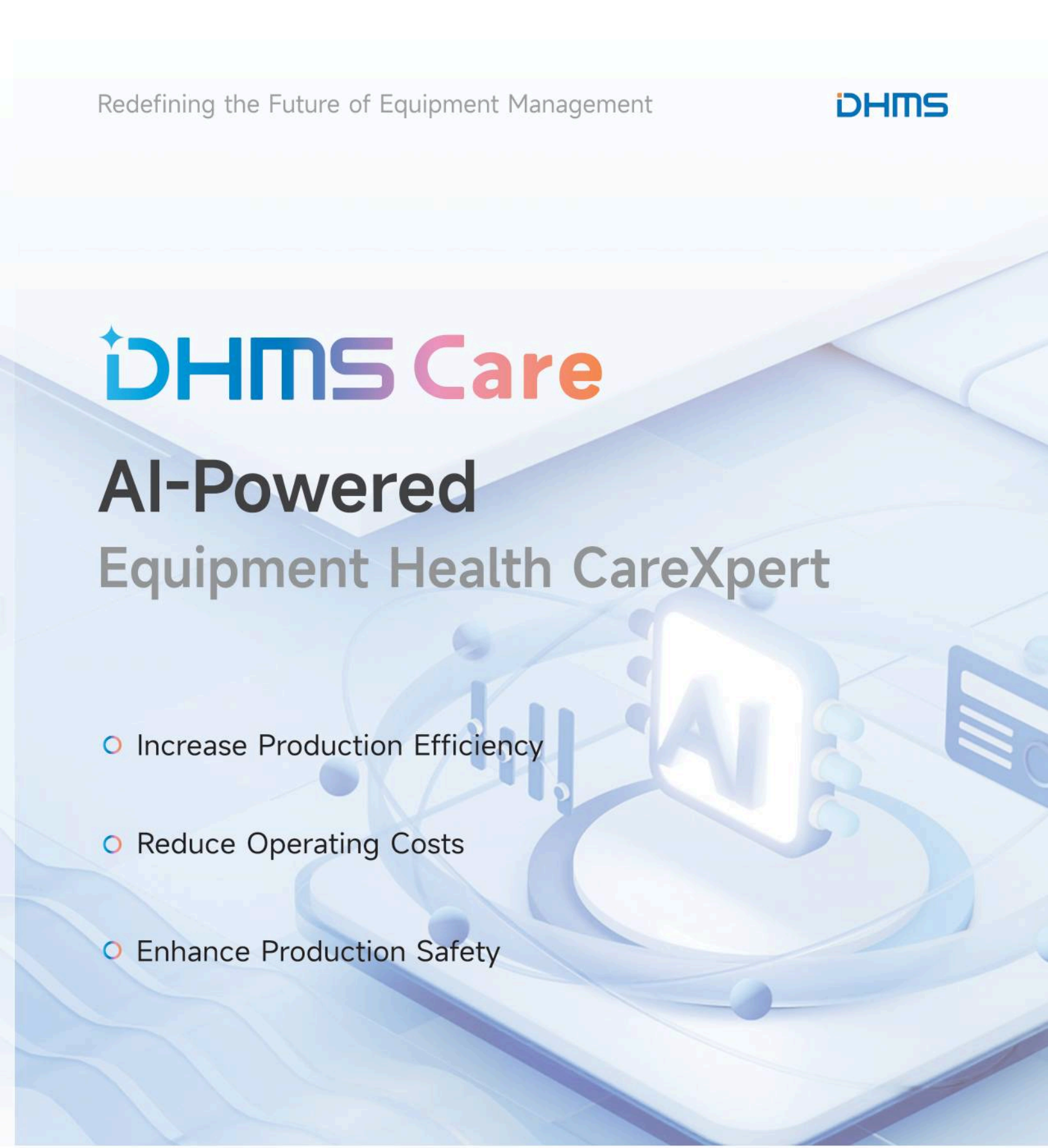
DHMS

DHMS Care

AI-Powered

Equipment Health CareXpert



- Increase Production Efficiency
- Reduce Operating Costs
- Enhance Production Safety

DHMSCare is an integrated platform combining proprietary smart terminals with AI-driven equipment reliability management software.

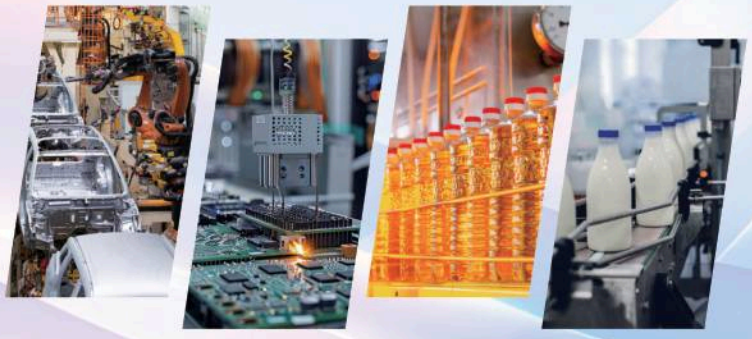
Industries Served

Process Industries



Chemicals, power, metallurgy, mining, pharmaceuticals, building materials (cement, glass), papermaking, etc.

Continuous Production Industries



Continuous production and packaging lines in grain & oil, food, and beverage industries, as well as highly automated production lines in automotive, semiconductor, and 3C electronics

Supported Equipment

Applicable to both rotating and reciprocating equipment. Examples include the following:



Motor



Speed Reducer



Gearbox



Air Compressor



Centrifugal Blower



Cooling Blower



Pump Unit



Pump

DHMSCare Solutions

Application Layer



DHMSCare

- Condition Monitoring
- Fault Diagnosis
- Health Assessment
- Maintenance Recommendations
- AI O&M Assistant
- Reliability Management

Platform Layer

Intelligent Analysis Core

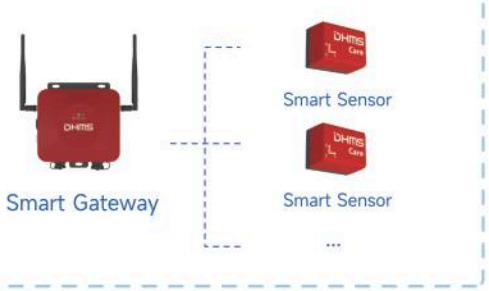
✦ AI Analysis Engine

✦ Mechanism Model

- Condition Recognition
- Pattern Learning
- Condition Monitoring
- Anomaly Alerts
- Fault Prediction
- Maintenance Recommendations

IoT Platform

Sensing Layer



Equipment

- Rotating Equipment
- Reciprocating Equipment
- ...



Pumps | Compressors | Blowers | Ball Mills | ...

DHMSCare Value

Enhance Production Efficiency

- Reduce unexpected equipment downtime by 50%
- Increase equipment uptime by 10%–20%
- Shorten maintenance planning time by 20%–50%

Reduce Operational Costs

- Lower total maintenance costs by 5%–10%
- Reduce inventory costs by 5%–20%



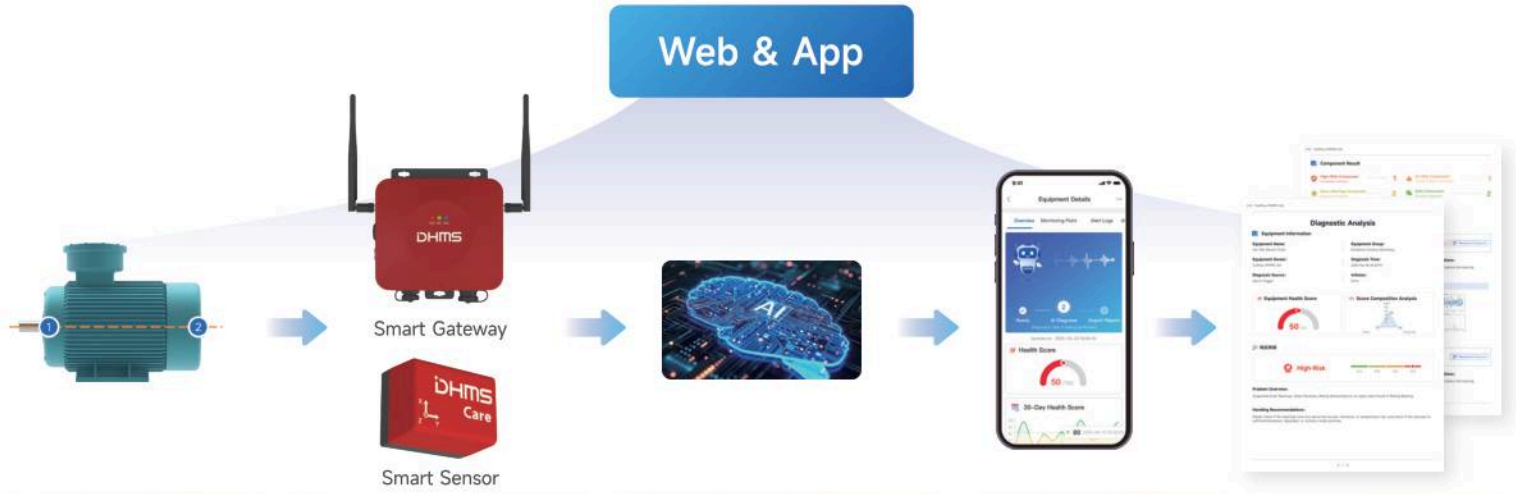
Improve Production Safety

- Predict potential equipment risks in advance
- Facilitate quick decision-making to address risks promptly

Advance Intelligent Operations

- Empower equipment O&M with AI
- Increase equipment management efficiency by 50%

DHMSCare Demonstration

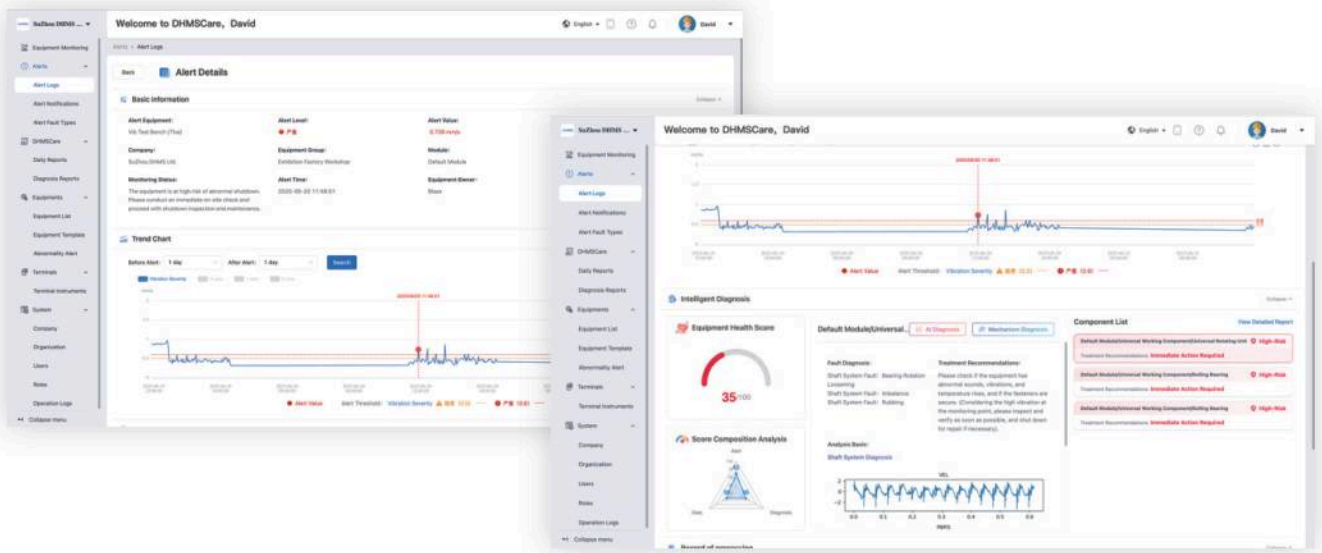


Create Equipment	Install Smart Terminals	Condition Recognition	Alert	AI Monitoring Report
Equipment modeling based on digital twin technology.	**Smart Sensor** ① Easy installation ② Multi-Parameter Sensing ③ 5-Year Battery Life **Smart Gateway** ① Supports 60+ Sensors ② 200m Communication Range	The system automatically analyzes real equipment data to assess condition and generate AI insights.	Alerts are more accurate after condition recognition.	DHMSCare provides trend analysis and recommended actions to support decision-making.

DHMSCare Software

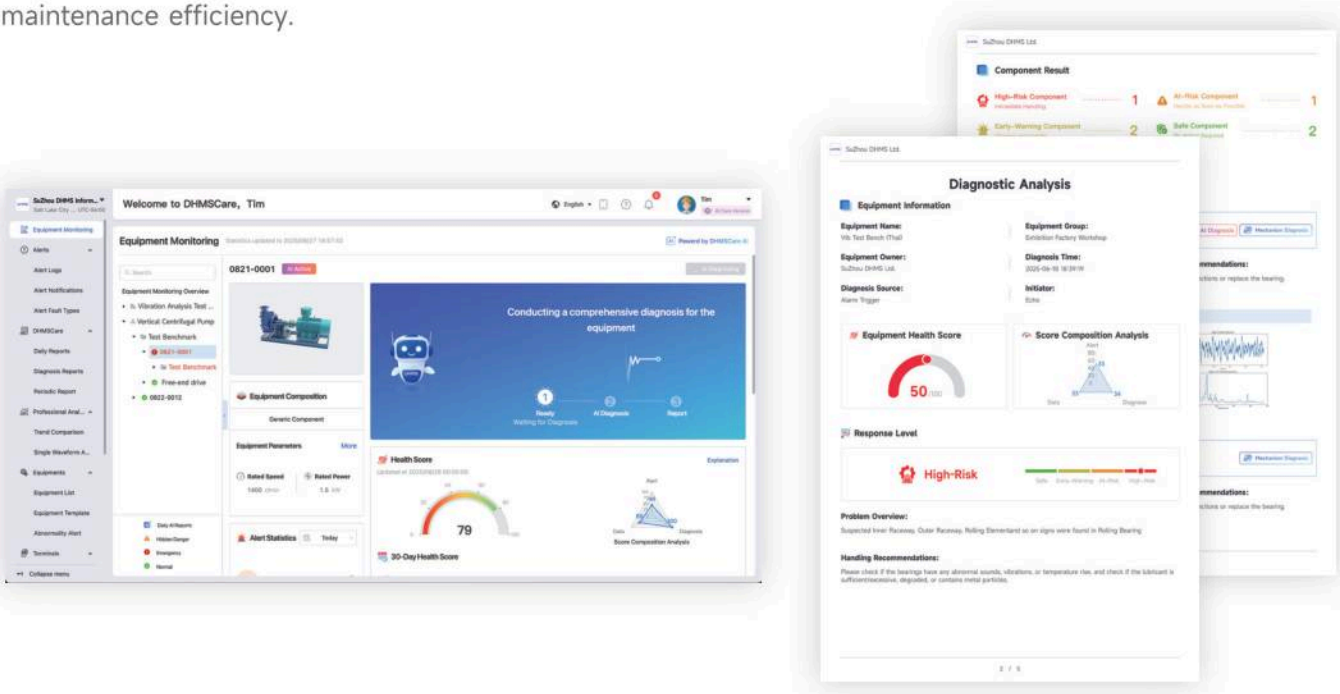
AI-Powered Condition Monitoring

Built on ISO standards and deep learning, our self-adaptive condition monitoring technology combines historical and real-time data to improve alert accuracy and reduce false/missed alarms. **In real-world deployments, abnormality detection accuracy exceeds 90%,** enabling a shift from reactive repairs to proactive prevention.



End-to-End AI Fault Diagnosis

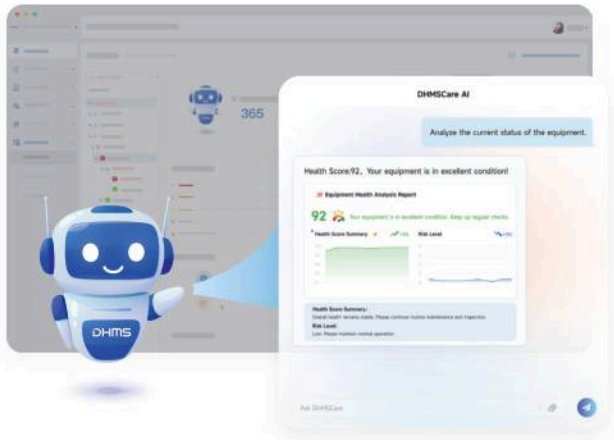
Integrating fault models, the DHMSCare AI analysis engine and operating-condition recognition, the system enables end-to-end diagnosis of common rotating-equipment faults and one-click structured reporting. **Proven in large-scale deployments, diagnosis accuracy remains above 85%,** improving troubleshooting and maintenance efficiency.



DHMSCare Software

Portable "AI O&M Assistant"

Powered by large language models, the AI assistant enables expert-level conversations while providing instant equipment health insights and degradation trend analysis, reducing issue resolution time by 90%.





"Multi-Expert" Consultation Mechanism

Built on a multi-agent consultation architecture, specialized “AI experts” independently analyze the same fault and converge on a unified diagnosis, raising overall diagnostic accuracy to 90%.

Adaptive Dynamic Thresholding

Going beyond traditional ISO-based thresholds, AI learns operating conditions and correlations among monitoring points to set adaptive thresholds for each point. This improves alert accuracy to 95% and enables subtle anomalies to be detected even under complex operating conditions.





Vision-Assisted Rapid Deployment

Combining computer vision with logical reasoning, the system automatically identifies equipment from photos and completes asset registration, data entry and model matching, improving deployment efficiency by over 90%.

DHMSCare Terminal

Wireless Sensors

DS310/DS311 are battery-powered sensors that capture three-axis vibration and temperature data and transmit it wirelessly to the gateway.



DS310

For industrial rotating equipment in open environments



DS311

For industrial rotating equipment in enclosed metal housings

- Three-Axis Vibration Collection
- Temperature Collection
- 5+ Years of Battery Life
- Compact Design
- IP69-Rated Dust & Water Protection
- Easy Deployment

DS320/DS321 are battery-powered sensors that capture three-axis vibration and temperature data, featuring edge AI, RPM calculation, and start/stop monitoring. Data is transmitted wirelessly to the gateway.



DS320

For industrial rotating equipment in open environments



DS321

For industrial rotating equipment in enclosed metal housings

- Three-Axis Vibration Collection
- Temperature Collection
- 5+ Years of Battery Life
- Compact Design
- IP69-Rated Dust & Water Protection
- Easy Deployment
- RPM Calculation

DHMSCare Terminal

Wireless Sensors

DS400/DS410 are wireless sensors with advanced edge AI for monitoring rotating equipment under steady-state, variable-speed, and intermittent conditions.



DS400

Three-Axis Vibration Collection

Temperature Collection

IP69-Rated Dust & Water Protection



DS410

Edge AI Processing

RPM Calculation

3+ Years of Battery Life

Replaceable Battery

Smart Gateway

The smart gateway collects sensor data and transmits it to DHMSCare via Wi-Fi, LAN, or 4G.



DG310 (WiFi+LAN)

Wide Coverage

High Connection Capacity

Mobile App Configuration



DG311 (4G+LAN)

Offline Caching

Remote Management

Multiple Network Connectivity

Industry Solutions

Food & Beverage

Industry Challenges

Limited Inspection Coverage

Dense equipment layout makes early bearing degradation and gear wear difficult to detect.

High Cost of Unplanned Downtime

Unexpected shutdowns can result in significant raw material losses.

Inconsistent Product Quality

Fluctuations in temperature, flow and concentration during CIP processes can affect batch consistency.

Strict Hygiene Requirements

Disassembling food-grade equipment is time-consuming and labor-intensive, limiting inspection frequency

Quantifiable Value

Unplanned Downtime
Reduced by **40-45%**

Overall Equipment Effectiveness
(OEE) Improved by **12-18%**

Batch Scrap Rate
Reduced by **25-35%**

Annual Maintenance Cost Savings
$100K-150K

Payback Period
6-12 Months

Monitoring Solution

Focus monitoring on the operating condition of bearings, gearboxes and motors in critical equipment such as filling lines, homogenizers, and centrifuges.

Hardware Deployment

Homogenizer: 4 sensors; centrifuge: 5 sensors; filling machine: 4 vibration/-temperature sensors; pumps/blowers: 3 vibration/temperature sensors per unit.
Approx. 30–40 sensors per production line provide real-time vibration and temperature data.

Software Platform

DHMSCare uses AI to identify early fault signs such as gear wear and bearing anomalies, assess equipment health and provide maintenance recommendations.



On-site Application Showcase

Industry Solutions

Automotive & Component Manufacturing

Industry Challenges

Significant Impact of Unplanned Downtime

Failures in assembly line conveyors can halt production, while injection molding and stamping failures can disrupt supply chains and delay deliveries.

Dispersed Equipment Inspection Challenges

Widely distributed equipment and limited maintenance resources at overseas plants make routine inspections inefficient.

Hidden Fault Detection Challenges

Hidden faults such as CNC spindle accuracy drift and bearing wear are difficult to detect, increasing the risk of batch scrap.

Delayed Fault Detection

Wear in chains and bearings develops gradually, while conventional inspection requires shutdown and disassembly for confirmation.

Quantifiable Value

Unplanned Downtime
Reduced by **35-45%**

Overall Equipment Effectiveness
Improved by **12-15%**

Equipment Service Life
Extended by **20-30%**

Annual Cost Savings
$80K-150K

Monitoring Solution

Focus monitoring on critical equipment including chain lifts, belt conveyors, injection molding machines, stamping lines, CNC spindles and industrial motors, covering core components such as motors and gearboxes.

Hardware Deployment

Injection molding machine: 5 sensors; CNC spindle: 3 sensors; industrial motors: 2 sensors per unit; supported by DG310 gateways.
Approx. 35–60 sensors per production line.

Software Platform

DHMSCare provides unified motor health management, detects faults such as bearing damage, rotor-bar breakage, insulation degradation and spindle accuracy drift, and delivers predictive maintenance recommendations to O&M teams.



On-site Application Showcase

Industry Solutions

Pharmaceutical Manufacturing

Industry Challenges

High Cost of Batch Failures

Failures in critical equipment such as centrifuges and air compressors can result in batch loss and costly API losses.

Process Variability Impact on Quality

Cleanroom equipment anomalies can be difficult to detect promptly.

Process Variability Impact on Quality

Variations in critical process parameters can affect API quality consistency.

Multi-Brand Equipment Manage -ment Challenges

Differences in equipment brands, designs and oper-ating modes complicate centralized management and reduce O&M efficiency.

Quantifiable Value

Unplanned Downtime

Reduced by **30-40%**

Batch Compliance

Improved by **15-25%**

Rework & Scrap Losses

Reduced by **$120K-200K/year**

Monitoring Solution

Focus monitoring on centrifuges, circulation/feed pumps, chillers and air compressors to improve anomaly detection in cleanrooms and prevent equipment-related batch failures.

Hardware Deployment

Centrifuge: 5 sensors; circulation/feed pump: 4 sensors; chiller: 4 sensors; air compressor: 4 sensors; supported by DG310 gateways.
Approx. 30–50 sensors per production line.

Software Platform

DHMSCare retains complete equipment operating logs, supports root-cause analysis, and generates equipment health reports for record-keeping, supporting compliant cleanroom O&M.





On-site Application Showcase

Industry Solutions

Concrete & Cement Production

Industry Challenges

High Cost of Rotating Equipment Failures

Failures of large rotating equipment can result in substantial losses.

Inspection Challenges in Harsh Environments

High-dust and high-temperature areas make manual inspections difficult to perform.

Critical Drive Component Failures

Failures of critical drive components can shut down the entire production line.

Difficult Fault Identification

Mechanical and electrical faults can be difficult to distinguish quickly, delaying troubleshooting and emergency repairs.

Quantifiable Value

Unplanned Downtime

Reduced by **40-50%**

Fault Warning

7-30 Days in Advance

Overall Energy Consumption

Reduced by **5-10%**

Monitoring Solution

Focus monitoring on critical equipment including rotary kilns, cement mills, vertical pumps, reducers and drive motors.

Hardware Deployment

Rotary kiln: 12–15 integrated vibration/temperature sensors; cement mill: 8 integrated vibration/temperature sensors; vertical pumps: 3 integrated vibration/temperature sensors per unit; reducer: 6 integrated vibration/temperature sensors; drive motors: 3 sensors per unit; supported by DG310 gateways.
Approx. 55–65 sensors per production line.

Software Platform

DHMSCare provides 24/7 online condition monitoring, AI fault diagnosis and equipment health assessment, with automatic maintenance recommendations.



On-site Application Showcase

Industry Solutions

Leather & Rubber Manufacturing

Industry Challenges

Failure Prediction Under High Loads

Screw air compressors and gearboxes operate under sustained high loads, making failures difficult to predict.

Motor Inspection Blind Spots

Widely distributed three-phase induction motors create major inspection blind spots.

Delivery Risks from Unplanned Downtime

Unexpected failures of critical equipment can interrupt production and directly affect downstream deliveries.

Accelerated Degradation in Harsh Conditions

Dust and high temperatures accelerate wear of critical components, making real-time monitoring difficult.

Quantifiable Value

Fault Warning

24-72 Hours in Advance

Defect Rate

Reduced by **15-20%**

Energy Consumption

Reduced by **8-12%**

Ensure Continuous Production

Improve Line Stability

Monitoring Solution

Focus monitoring on critical equipment including screw air compressors, three-phase induction motors and gearboxes.

Hardware Deployment

Screw air compressors: 4 sensors per unit; three-phase induction motors: 2–4 sensors per unit; gearboxes: 2–4 sensors.
Approx. 15–20 sensors per production line.

Software Platform

Smart sensors collect vibration and temperature data in real time and transmit it to DHMSCare for analysis and diagnosis.



On-site Application Showcase

Industry Solutions

Mining

Industry Challenges

Limited Inspection Coverage

Widely distributed equipment makes it difficult to inspect all points manually.

Harsh Underground Conditions

Harsh and complex underground conditions increase the risk of production disruptions and safety incidents.

Delayed Fault Detection

Reliance on manual judgment can delay fault detection.

Raw Material Loss from Downtime

Unplanned downtime disrupts mining and processing, while trapped ore may cake or oxidize, causing material losses.

Quantifiable Value

Fault Detection Accuracy
Up to **96.3%**

Equipment Failure Rate
Reduced by **62%** YoY

Maintenance Response Time
Reduced by **50%**

Unplanned Downtime
Reduced by **40%**

Overall O&M Costs
Reduced by **35%**

Fault detection accuracy improved by **28.7%** vs. manual inspection; energy consumption per ton of coal reduced by **20.7%** ; annual net benefit reached RMB **21.7 million**

Monitoring Solution

Focus monitoring on critical equipment including hoists, air compressors, belt conveyors, crushers, pumps and other machinery.

Hardware Deployment

Intrinsically safe smart gateways and wireless vibration/temperature sensors are deployed for underground mining equipment. Sensors installed on motors, speed reducers, pumps and other equipment collect operating data in real time.
Approx. 80–150 sensors per mine.

Software Platform

DHMS provides 24/7 equipment condition monitoring, intelligent alerts and fault diagnosis, supporting predictive maintenance and emergency response through digitalized and visualized O&M.



On-site Application Showcase

Industry Solutions

Power Generation

Industry Challenges

Failure Risk from Continuous Operation

Continuous operation of blowers, pumps and air compressors increases failure risk.

Limited Predictive Capability

Traditional O&M relies heavily on reactive repairs, with limited predictive capability.

Unplanned Downtime & Reliability Risk

Sudden equipment failures cause unplanned downtime, reducing generation efficiency and power supply reliability.

Accelerated Degradation in Harsh Conditions

High temperatures and heavy loads accelerate critical component degradation, while limited monitoring hinders early detection.

Quantifiable Value

Warning Accuracy
Up to **85%**

Equipment Availability
Improved by **Approx 5%**

Maintenance Costs
Reduced by **15-30%**

Maintenance Shift
From Reactive to Predictive

Monitoring Solution

Focus monitoring on critical equipment including blowers, pumps, air compressors and coal crushers.

Hardware Deployment

Vibration/temperature sensors are installed on blowers, pumps, air compressors and coal crushers, with data uploaded to the system via smart terminals. Standard smart gateways or explosion-proof gateways are available.
Approx. 100–300 sensors per power plant.

Software Platform

DHMS provides 24/7 condition monitoring and fault alerts for early risk detection and prevention.



On-site Application Showcase

Industry Solutions

Non-Ferrous Metals

Industry Challenges

High-Risk Operating Conditions

Flotation cells and other core equipment are structurally complex and operate under harsh conditions and heavy loads.

Costly Unplanned Downtime

Unexpected equipment shutdowns can cause significant financial losses.

High-Cost Manual Monitoring

Traditional manual monitoring is inefficient and labor-intensive, driving up O&M costs.

Difficult Component Wear Prediction

Heavy loads accelerate wear of critical components such as motors and gearboxes, making early detection difficult.

Quantifiable Value

Proven on the world's largest **680m³** flotation cell

Fault Prediction Accuracy Over **85%**

Ball Mill Overhaul Time Reduced by **12+Hours**

Unplanned Downtime Reduced by **30%+**

Monitoring Solution

Focus monitoring on critical equipment including flotation cells, ball mills, vibrating screens, crushers, dust collection fans, belt conveyors, ore discharge equipment and pumps.

Hardware Deployment

Vibration/temperature sensors and smart data acquisition terminals are deployed on flotation cells, ball mills, and other equipment. Optional wired vibration/temperature sensors, eddy-current displacement sensors and Hall-effect speed sensors are also available.
Approx. 100–200 sensors per mine.

Software Platform

DHMS collects vibration, temperature, speed and other signals to build multi-parameter fault models for fault prediction and diagnosis of motors, gearboxes, main shafts, and other critical components.



On-site Application Showcase

Industry Solutions

Livestock Farming

Industry Challenges

Widely Distributed Equipment

Distributed equipment makes manual inspections time-consuming and delays early fault detection.

Limited Monitoring Parameters

Most farms monitor temperature only, making early signs of bearing wear and motor degradation difficult to detect.

Delayed Maintenance Response

Remote farm locations and shortages of skilled O&M staff delay fault response.

Inefficient Scheduled Maintenance

Time-based maintenance lacks data support, leading to over- and under-maintenance and reduced equipment reliability.

Quantifiable Value

Unplanned Downtime
Reduced by **30-40%**

Equipment Service Life
Extended by **15-20%**

Maintenance Costs
Reduced by **20-30%**

Monitoring Solution

Focus monitoring on the motors, bearings and drive systems of critical equipment such as ventilation fans, feed conveyor drive motors, and pumps.

Hardware Deployment

Wireless vibration/temperature sensors transmit data to the cloud via smart gateways. Designed for low power consumption, the sensors offer 3–5 years of battery life and reliable operation in demanding farm environments. Approx. 20–50 sensors per farm.

Software Platform

DHMSCare provides real-time condition monitoring, detects early bearing wear and motor anomalies, and delivers maintenance recommendations.



On-site Application Showcase

About Us

With AI at its core, DHMSCARE PTE. LTD. focuses on industrial equipment safety and reliability management. Powered by big-data mechanistic models and an AI analytics engine, DHMSCare provides equipment reliability solutions and services that improve production efficiency, reduce operating costs, and support safer, smarter, greener, and more sustainable operations.

Primary Service Areas: Process industries (e.g., chemicals, power, metallurgy, and mining) and continuous manufacturing industries (e.g., automotive, 3C electronics, semiconductors, new energy, grain & oil, food, beverages, and dairy)

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Contact Us to Learn More