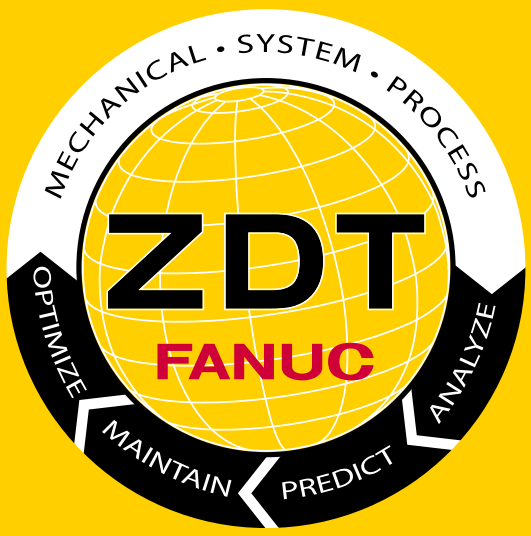
Maintenance and diagnostic functions to prevent unexpected downtime

FANUC

ZDT



ZERO DOWN TIME

Robot Maintenance and Diagnostic functions using IoT technology

ZDT(Zero Down Time) is a proven IoT solution designed to eliminate unexpected downtime on the factory floor. ZDT uses "Mechanical Health", "Process Health", "System Health" and "Maintenance Health" to eliminate downtime.

ZDT FANUC
MECHANICAL • SYSTEM • PROCESS
ANALYZE PREDICT MAINTAIN OPTIMIZE

Failure Prediction

Abnormalities for mechanical parts, such as reducers, are detected and notified several weeks before actual failure. Therefore, maintenance can be better planned.

Central Data Management

Robot status can be monitored anywhere using a web browser on a PC or smart device. Advance notification is provided by email when an abnormality is detected.

Maintenance

Optimal maintenance is achieved by analyzing the life of consumable components based on actual robot operating conditions.

Traceability

It is possible to collect and visualize machine process data and achieve early detection of equipment abnormalities.

System Monitoring

More appropreate actions are performed by knowing the information and status required for maintenance, such as robot status and operational histories.

Realizing 0 (Zero) Down Time

Advance notifications issued before failures prevent unexpected downtime.

ZDT Benefits

A single robot breakdown can cause significant system production downtime. ZDT includes analytics that can detect robot abnormalities and provide advance notification that action is required so maintenance can be performed to prevent unexpected downtime.

Installed base

Over 40,000 robots connected to ZDT

ZDT has prevented over 4,000 cases of robot downtime

*2025 July results

ZERO DOWN TIME

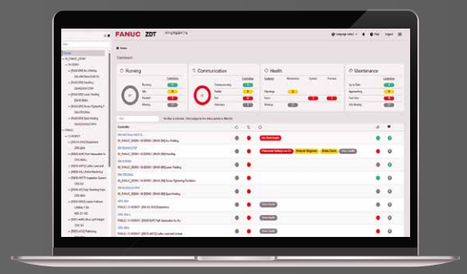
Predictive analytics and functions to detect abnormalities allow maintenance to be performed before failure occurs,

which means zero down time.

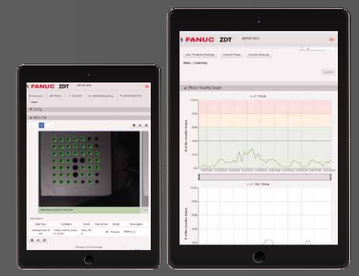
Central Data Management

Centralized robot data management.
Robots can be monitored anytime, anywhere with a PC or smart device.

PC



Smart device



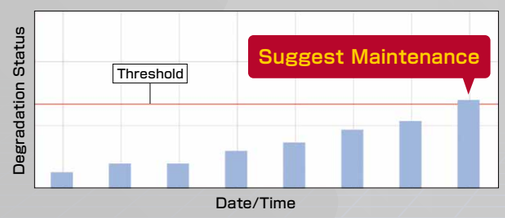
Maintenance and Diagnosis Functions of ZDT

Failure Prediction

Predict failure

Reducer Diagnosis

This function diagnoses the deterioration of the reducer on each axis. A notification will be sent when the degradation exceeds the threshold, so robot failure can be predicted in advance.



Other Functions

- Motor Torque Analysis
- Servo Off Alarm Log

Benefits

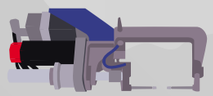
- Predict abnormalities weeks in advance
- Schedule inspections and repairs during planned production stoppages
- Prevent unexpected downtime

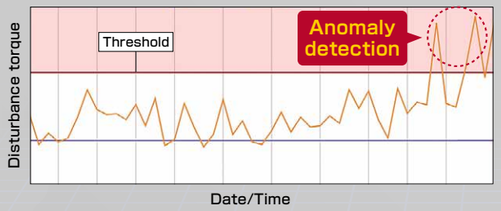
Traceability

Prevent product defects

Servo Gun Diagnosis

This function diagnoses servo gun abnormalities.
A notification is sent when the disturbance torque exceeds the threshold, so downtime due to servo gun failure can be prevented.





Other Functions

- Spot Weld Log
- Arc Weld Log

Benefits

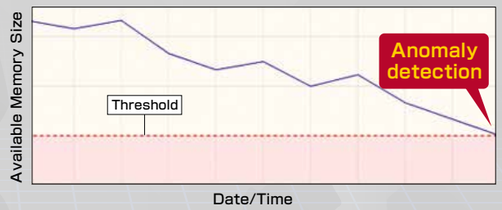
- Detect machining abnormalities
- Early detection of process quality issues due to improper welding
- Prevent unexpected downtime due to process equipment abnormalities

System Monitoring

Make efficient operation

Controller Memory Status

This function calculates and displays a summary of the free memory space on the controller.
It sends a notification if free memory goes below a pre-determined threshold, preventing unexpected downtime due to lack of memory.



Other Functions

- Program Change Log
- Alarm Log

Benefits

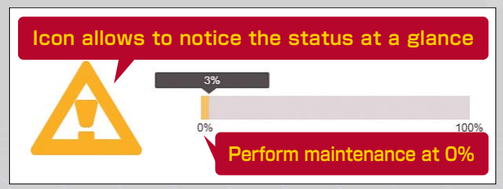
- Check controller memory status
- Improve operating rate of robot
- Use Operation Log or Alarm Log to diagnose issues

Maintenance

Optimize maintenance

Maintenance Reminder

This function tracks the status of recommended robot maintenance items and optimal replacement time for consumables. In addition to optimizing maintenance costs, component life is extended through proper maintenance timing.



Other Functions

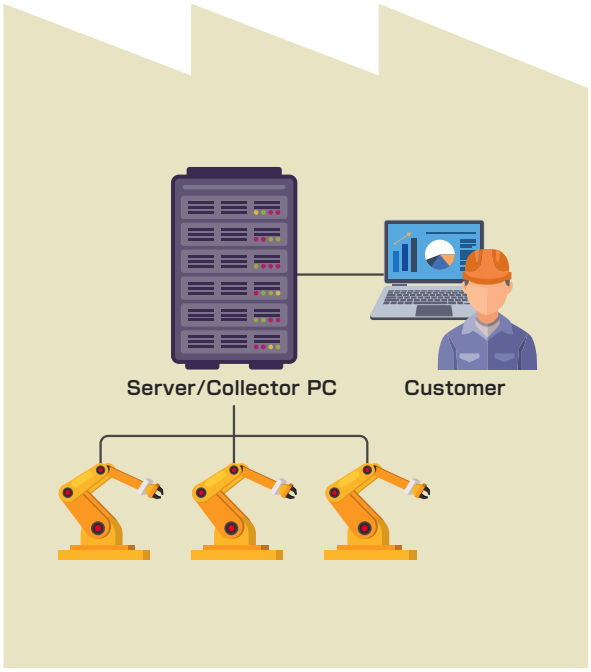
- Grease Change Notifications
- Inspection Priority List

Benefits

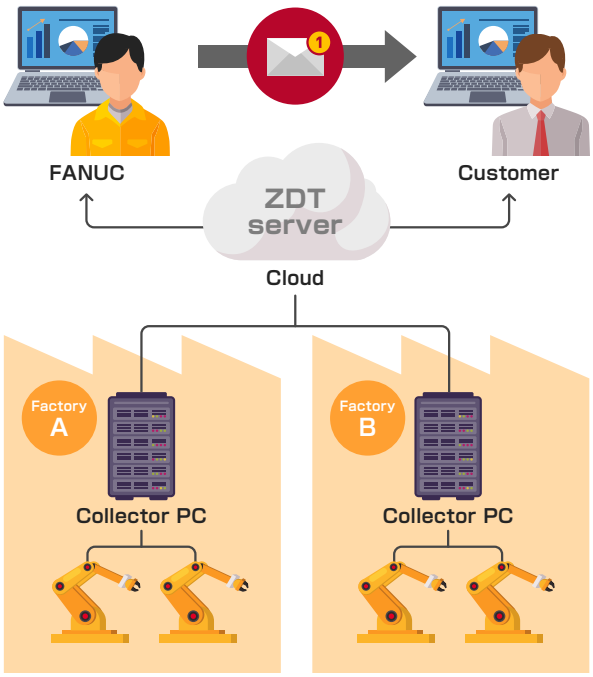
- Make a reliable maintenance plan
- Extend robot life
- Reduce maintenance costs

Select From 2 ZDT Types

ZDT(On-Premise)



ZDT(Cloud)



Platform	ZDT	
	On-Premise	Cloud
Data storage location	Inside factory	Outside factory
Diagnosis	Yes	Yes
Analysis by FANUC service personnel	No	Yes
Features	No connection to external networks	Access across many factories
Devices	Server/Collector PC	Collector PC
CPU	Intel® Xeon® 16-core or more	Intel® Core™ i7 6-core or more
Memory	64GB or more	8GB or more
Storage	760GB (RAID5 Configuration 1TB×3) or more	60GB or more

*Required specifications depend on the number of robots connected and functions used.
*Robot data stored on a ZDT Server can be viewed with a web browser. Supported browsers are Google Chrome and Microsoft Edge.
*An internet connection is required if using ZDT Cloud.

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ZDT(E)-05, 2025.11, Printed in Japan