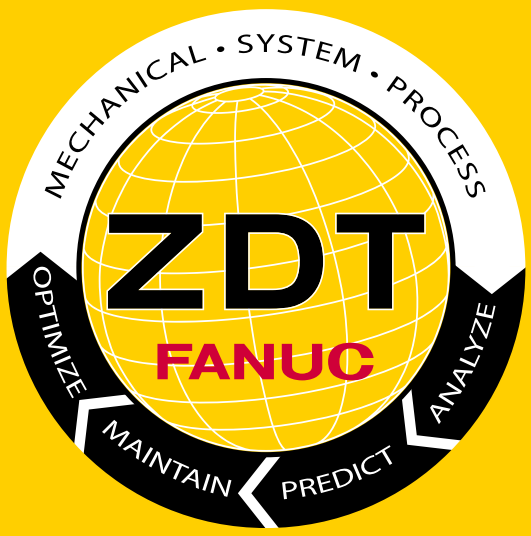
Maintenance and diagnostic functions to prevent unexpected downtime

FANUC

ZDT



Realizing 0 (Zero) Down Time

Advance notifications issued before failures prevent unexpected downtime.

Check robot status from anywhere

Detect abnormalities and predict failures

Improve robot life and power consumption

Optimize maintenance

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 35,000 robots connected to ZDT

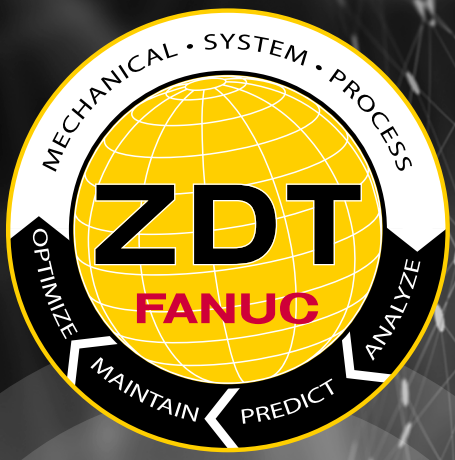
ZDT has prevented over 1,800 cases of robot downtime

*2023 August results

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.



Mechanical Health

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 Health

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

Process Health

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

System Health

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

ZERO DOWN TIME

Predictive analytics and functions to detect abnormaties allow maintenance to be performed before failure occurs, which means zero down time.

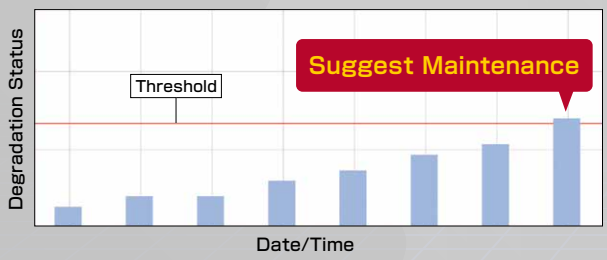
Maintenance and Diagnosis Functions of ZDT

Mechanical Health

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

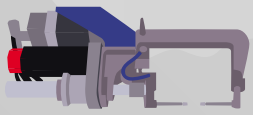
- Predict abnormalities weeks in advance
- Schedule inspections and repairs during planned production stoppages
- Prevent unexpected downtime

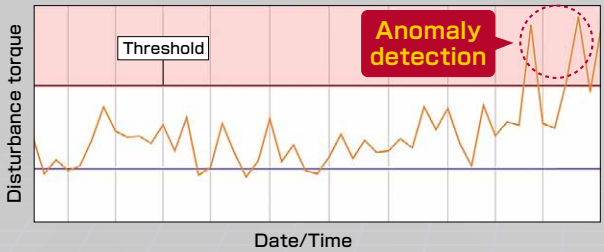
Process Health

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 Welding Condition Diagnosis

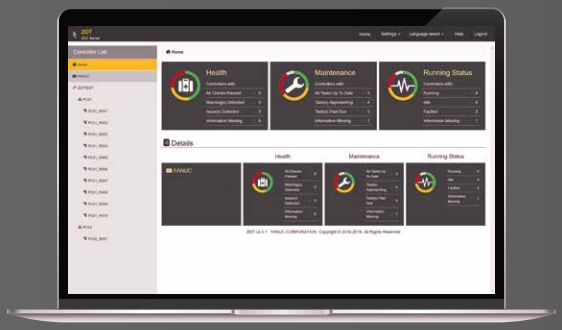
Benefits

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

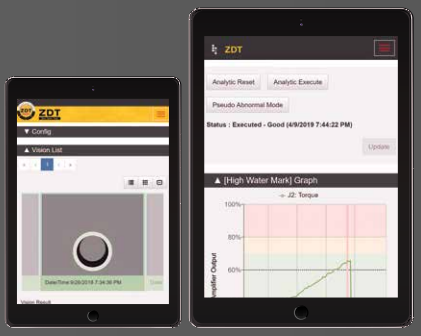
Central Data Management

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

PC



Smart device

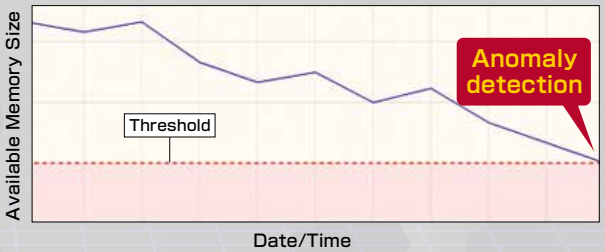


System Health

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

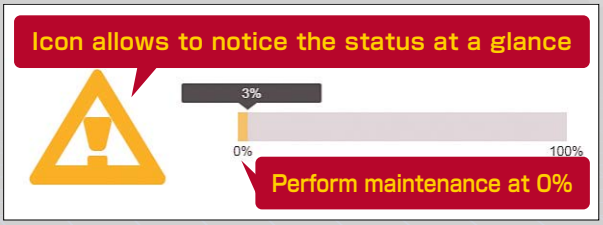
- Check controller memory status
- Improve operating rate of robot
- Use Operation Log or Alarm Log to diagnose issues

Maintenance Health

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

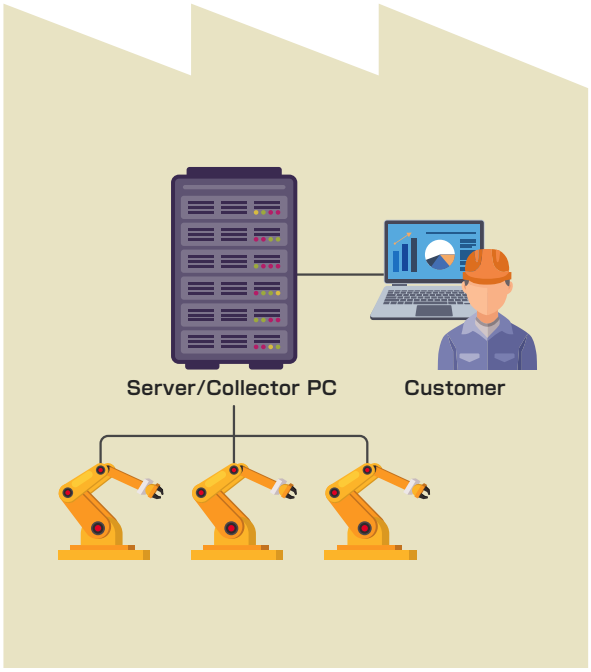
- Grease Change Notifications
- Cable Change Notifications

Benefits

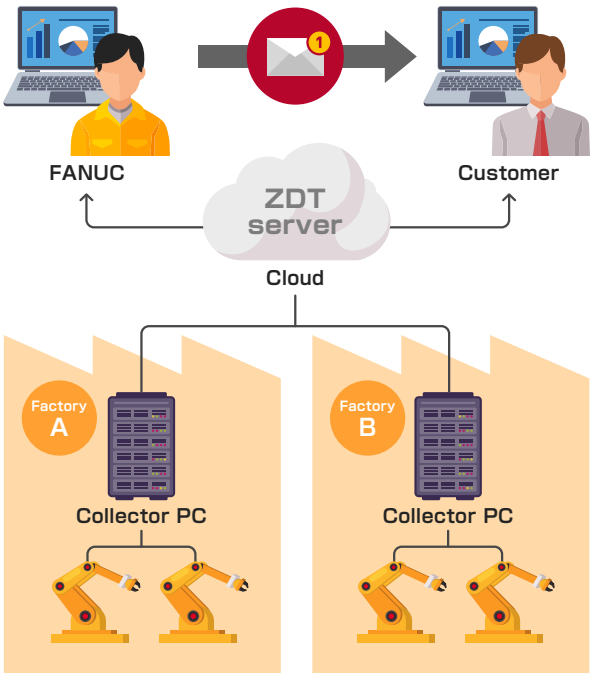
- Make a reliable maintenance plan
- Extend robot life
- Reduce maintenance costs

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® processor E5-2660 v4 × 2 (2.00 GHz, 14-core, 35 MB cache)	Intel® Core™ i5 or higher
Memory	32 GB or more	16 GB or more
Hard disk capacity	2 TB or more	160 GB or more
Software	VMware Workstation™ 14 Pro or later, or VMware Workstation Player™ (Windows version)	VMware Workstation™ 14 Pro or later, or VMware Workstation Player™ (Windows version)

*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 the latest version of Google Chrome and Microsoft Edge.
*An internet connection is required if using ZDT Cloud.
*VMware is the name of virtualization software developed by VMware. Please refer to the VMware website for details and specifications for this software.

FANUC CORPORATION

●Headquarters 3580, Shibokusa, Oshino-mura, Minamitsuru-gun Yamanashi, 401-0597, JAPAN
Phone: (+81)555-84-5555 https://www.fanuc.co.jp/

●Overseas Affiliated Companies

FANUC America Corporation	Phone: (+1)248-377-7000	https://www.fanucamerica.com/
FANUC Europe Corporation, S.A.	Phone: (+352)727777-1	https://www.fanuc.eu/
SHANGHAI-FANUC Robotics CO., LTD.	Phone: (+86)21-5032-7700	https://www.shanghai-fanuc.com.cn/
KOREA FANUC CORPORATION	Phone: (+82)55-278-1200	https://www.fkc.co.kr/
TAIWAN FANUC CORPORATION	Phone: (+886)4-2359-0522	https://www.fanuctaiwan.com.tw/
FANUC INDIA PRIVATE LIMITED	Phone: (+91)80-2852-0057	https://www.fanucindia.com/
FANUC SINGAPORE PTE. LTD.	Phone: (+65)6567-8566	https://www.fanuc.com/fsp/
FANUC THAI LIMITED	Phone: (+66)2-714-6111	https://www.fanuc.com/fth/
FANUC MECHATRONICS (MALAYSIA) SDN. BHD.	Phone: (+60)3-3082-1222	https://www.fanuc.com/fmm/
PT. FANUC INDONESIA	Phone: (+62)21-4584-7285	https://www.fanuc.com/fin/
FANUC OCEANIA PTY. LIMITED	Phone: (+61)2-8822-4600	https://www.fanucoceania.com.au/
FANUC SOUTH AFRICA (PROPRIETARY) LIMITED	Phone: (+27)11-392-3610	https://fanuc.co.za/

●All specifications are subject to change without notice.
●No part of this catalog may be reproduced in any form.
●The products in this catalog are controlled based on Japan's "Foreign Exchange and Foreign Trade Law". The export from Japan may be subject to an export license by the government of Japan. Further, re-export to another country may be subject to the license of the government of the country from where the product is re-exported. Furthermore, the product may also be controlled by re-export regulations of the United States government. Should you wish to export or re-export these products, please contact FANUC for advice.

©FANUC CORPORATION, 2019

ZDT(E)-03, 2023.11, Printed in Japan