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Mitsubishi Electric to Launch New General Purpose AC Servo and Motion Control Unit

Industry-leading performance and world's-first compatibility with CC-Link-IE TSN

TOKYO, March 7, 2019 – Mitsubishi Electric Corporation (TOKYO: 6503) announced today that it will launch a new series of servo systems—the General Purpose AC Servo MELSERVO J5 series (65 models) and the iQ-R Series Motion Control Unit (7 models)—starting from May 7. These will be the world's-first[1] servo system products on the market to support the CC-Link IE TSN[2] next-generation industrial open network. Offering industry-leading performance (servo amplifier frequency response[3], etc.) and compatibility with CC-Link IE TSN, these new products will contribute to enhanced machine performance and accelerate the advancement of smart factory solutions.

[1] According to Mitsubishi Electric research as of March 7, 2019
[2] Ethernet-based industrial network, based on specifications disclosed by the CC-Link Partner Association on November 21, 2018, that adopts TSN technology to enable multiple protocols to exist on a single network through time synchronization.
[3] Maximum frequency at which a motor can follow a sine wave command

MELSERVO-J5 Series

MELSEC iQ-R Series
Motion Control Unit

Key Features

1) *Industry-leading performance for higher machine speeds and greater accuracy*
    - Servo amplifiers with 3.5 kHz frequency response help to shorten cycle time of production equipment.
    - Servo motors equipped with industry-leading[1] high-resolution encoders (67,108,864 pulses/rev) decrease torque fluctuation for accurate and stable positioning.

2） *High-speed communication with CC-Link-IE TSN for enhanced productivity*
    - World's first[1] motion control unit supporting CC-Link-IE TSN achieves operation cycle time of 31.25μs.
    - High-speed synchronous communication with CC-Link-IE TSN between vision sensors and other connected devices increases overall machine performance.

3) *New HK series servo motors contribute to machine value*

- HK rotary servo motors connect to both 200V and 400V power supply servo amplifiers. In addition, combinations such as connecting a lower-capacity servo motor with a higher-capacity servo amplifier achieve higher speed and torque. Flexible system construction provides greater design freedom for machine builders.

- To reduce maintenance procedures, rotary servo motors are equipped with the industry's smallest[1] battery-less absolute encoder developed by Mitsubishi Electric and powered by a unique self-power-generating structure.

- To save time and space during installation, power and encoder connections for servo motors are simplified into a single cable and connector.

4) *Connectivity with multiple industrial open networks for flexible system configuration*

- Selected servo amplifiers connectable to multiple industrial open networks allows users to select their preferred network or connect to their existing systems, facilitating flexible and optimum system configuration.

Release Schedule

Product Name	Model	Release	FY2019 Sales Target
General Purpose AC Servo Amplifier MELSERVO-J5 series	MR-J5-G and 22 other models	Starting from May 7[4]	500,000 units
MELSERVO-J5 series compatible Rotary Servo Motors	HK-KT and 45 other models		
CC-Link IE TSN compatible iQ-R Series Motion Unit	RD78G and 7 other models		

[4] For release dates in specific areas, please consult your local Mitsubishi Electric Sales Office.

Background

Mitsubishi Electric servo systems have been adopted by customers around the world for their industry leading performance and flexible application compatibility. For example the MELSERVO J4 series, released in 2012, delivered features such as the Advanced One-Touch Tuning and the industry's first 3-axis servo amplifier.

Mitsubishi Electric is now releasing the MELSERVO-J5, the first servo system in the world to support the next-generation industrial open network, CC-Link-IE TSN. The MELSERVO-J5 is an innovative servo system offering industry-leading performance while retaining the key features of the MELSERVO-J4. Mitsubishi Electric aims to contribute to the acceleration of IoT and smart factories while further reducing customer's total cost of ownership (TCO) by continuing to pursue the industry's highest levels of performance through a diverse product line-up and enhanced functions such as predictive maintenance and edge computing.

Other Key Features

1) *Supporting energy saving through a DC common bus configuration*

- A DC common bus system[5] is easily configurable by connecting multiple servo amplifiers and a simple converter (optional). Regenerated energy created during deceleration can be used to drive other motors, thus assisting energy saving.

[5] System in which the condenser needed to store energy for driving motors is shared between multiple servo amplifiers

2) *Greater system expandability with new motion control unit*

- Through newly optimized hardware and software, maximum controllable axis per motion unit is increased from 64 to 256 axes for greater system expandability.

3) *Reducing TCO further through enhanced GX Works3 engineering tool*

- PLCopen® [6] motion control function block library enables quick program implementation.

- Newly improved GX Works3 engineering tool simplifies programming.

- Existing motion CPU programs can be inherited. Compatibility with Mitsubishi Electric's past models is assured.

[6] Independent organization that promotes efficiency in industrial control programming through the IEC 61131-3 (JIS B 3503) standard

4) *Advanced AI used in preventive maintenance of connected drive systems*

- The new MELSERVO J5 amplifiers utilize Mitsubishi Electric's original compact AI technology, Maisart,[7] to perform predictive maintenance diagnostics for connected actuating parts, such as ball screws, gears, or belts, contributing to increased machine value and reduced TCO.

- Advanced preventive maintenance is achieved by monitoring trends in machine status, including any amplifiers connected to the motion control unit, and linking this information to higher level systems that are enabled with Edgecross.[8]

[7] Mitsubishi Electric's AI creates the State-of-the-ART in technology M a i s a r t
[8] Japan-originated open software platform for the edge computing field, designed to collaborate FA and IT.

Contribution to the Environment
The products announced in this release will contribute to the environment by helping to reduce energy consumption through optimized manufacturing.

About Maisart

Maisart encompasses Mitsubishi Electric's proprietary artificial intelligence (AI) technology, including its compact AI, automated design deep-learning algorithm and extra-efficient smart-learning AI. Maisart is an abbreviation for "Mitsubishi Electric's AI creates the State-of-the-ART in technology." Under the corporate axiom "Original AI technology makes everything smart," the company is leveraging original AI technology and edge computing to make devices smarter and life more secure, intuitive and convenient.

PLCopen is a registered trademark of PLCopen Japan.

Edgecross Consortium is currently applying to register the Edgecross trademark.

Maisart is a registered trademark of Mitsubishi Electric Corporation.

Ethernet is a registered trademark of Xerox Corporation.

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About Mitsubishi Electric Corporation
With nearly 100 years of experience in providing reliable, high-quality products, Mitsubishi Electric Corporation (TOKYO: 6503) is a recognized world leader in the manufacture, marketing and sales of electrical and electronic equipment used in information processing and communications, space development and satellite communications, consumer electronics, industrial technology, energy, transportation and building equipment. Embracing the spirit of its corporate statement, Changes for the Better, and its environmental statement, Eco Changes, Mitsubishi Electric endeavors to be a global, leading green company, enriching society with technology. The company recorded consolidated group sales of 4,444.4 billion yen (in accordance with IFRS; US$ 41.9 billion*) in the fiscal year ended March 31, 2018. For more information visit:
www.MitsubishiElectric.com
*At an exchange rate of 106 yen to the US dollar, the rate given by the Tokyo Foreign Exchange Market on March 31, 2018