

MitsDMA53 - Mitsubishi Servo Test Rig Video

Six axis high-speed Mitsubishi servo demonstration

- System Q PLC
- GOT1000 touchscreen HMI
- Q172H Motion Controller
- 6x MR-J3 amplifiers

To illustrate what is possible using the latest generation of servo control technology, Mitsubishi Electric has built this demonstration rig that graphically illustrates six axes of high-speed, high-accuracy, synchronised motion.

The rig contains three linear servo axes driving carriages on a common axis. On each carriage is mounted a rotary servo axis.

At the heart of the system is a System Q PLC with a Q172H Motion Controller and six servo amplifiers – all MR-J3-B amplifiers with in-built SSCNET III communications capability.

SSCNET III is a fibre optic network, unique to Mitsubishi Electric, and provides high speed communications between the servo amplifiers and the motion control CPU - with data transfer rates of up to 50 megabits per second.

The amplifiers used on the servo demo rig, are normal MR-J3-B models, well up to the task of running in integrated automation systems where there are complex, synchronized multi-axis movement sequences.

Three of the amplifiers drive the linear servo axes, which are in-line mounted Mitsubishi Electric LM series motors. The remaining three amplifiers drive Mitsubishi Electric HF-KP rotary axes from the MR-J3 servo series.

High resolution, absolute position encoders on the rotary axes offer 262,144 pulses per revolution output, which allows for extremely accurate control over position, torque and speed.

Operator control and monitoring is provided by a Mitsubishi Electric GOT15 HMI, linked to the PLC through the bus on the backplane which allows high speed data transfer from the servo amplifiers to the HMI.

The MR-J3 series has been specially designed to be easy to install and simple to configure, irrespective of the application. The control parameters are set automatically by the real-time Autotuning system developed by Mitsubishi Electric. This function continually adjusts and optimises the control parameters for the current operating conditions. The adaptive control system ensures dynamic and vibration-free operation at all times, even in demanding applications like suspended loads and high friction coefficients.

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Note to Editor: if you would like the text in another language please contact Carolin Heel at DMA Europa – carolin@dmaeuropa.com.

About Mitsubishi Electric

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 approximately 40.7 billion dollars* in the fiscal year that ended on March 31, 2019.

Mitsubishi Electric Europe, Industrial Automation – UK Branch is located in Hatfield, United Kingdom. It is a part of the European Factory Automation Business Group based in Ratingen, Germany which in turn is part of Mitsubishi Electric Europe B.V., a wholly owned subsidiary of Mitsubishi Electric Corporation, Japan.

The role of Industrial Automation – UK Branch is to manage sales, service and support across its network of local branches and distributors throughout the United Kingdom.

**At an exchange rate of 111 Yen = 1 US Dollars, last updated 31.03.2019 (Source: Tokyo Foreign Exchange Market)*

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