

Entry-level robots to kick-start new factory automation projects

Mitsubishi Electric is expanding its MELFA CR series for cost-conscious robot users by adding a new slim, long reach 8kg load capacity articulated arm model. The RV-8CRL is ideal for anyone interested in economical machines for low-to-medium complexity applications, allowing them to effectively choose between SCARA and six-axis solutions at a similar price point.



While robots are becoming increasingly common on the factory floor, they do require investment and the Return On Investment (ROI) must be clear for any business interested in adopting them. In this context, Mitsubishi Electric's latest MELFA CR series of robots can help make the decision easier. Aimed at entry-level manufacturing applications where the dexterity of a six-axis articulated robot is necessary but the actual task it is performing is not super complex, the latest RV-8CRL is an ideal solution.

The RV-8CRL is slim and compact and can handle a maximum payload of 8 kg, with an arm reach of 931 mm but an installation pitch of just 160mm¹. The robot is designed to minimise the required capital investment without compromising the overall quality and capabilities of Mitsubishi Electric brand products. To achieve this, some elements in the mechanical design were modified to optimise manufacturing costs. For example, over 200 screw connections were saved in this model, resulting in a substantial cost advantage passed on to users.

Managing the robot is also extremely simple as major functions are handled by the dedicated CR800 robotic controller which is very easy to use and clearly a bonus for first-time operators. Further programming of the new system does not differ from the class leading top-of-the-range MELFA FR series of industrial robots; in both cases this is carried out via the intuitive RT ToolBox3 software. Seamless communication with other robots and devices is achievable via Ethernet making the networking aspect also as straightforward as possible.

When running, it features the same level of accuracy and repeatability as the top performance MELFA FR series, just at lower speeds. The main difference in operational capabilities between the two lies in the ability of the FR models to accelerate and work at higher speeds, increasing overall machine performance and productivity.

Suitable for a wide range of general applications, typical uses for the CR series include pick-and-place, material handling, loading and unloading, machine tending, part assembly and quality inspections. The robot is designed to be equipped with advanced grip systems and vision sensors to support technically demanding applications. It does also offer plug-and-play compatibility with MELSERVO MR-J4 servos to quickly create task-based systems such as a conveyor feed set-up with the aforementioned CR800 controlling up to 8 axes, providing simultaneous control of the robot and the servos.

The range of possible uses does not end here, as the RV-8CRL is not only suitable for industrial robot applications, it can also become a cobot. Similar to other articulated arm robots from Mitsubishi Electric, the new model is compatible with MELFA SafePlus, which allows it to work alongside human operators and support cooperative setups without the need for special safety PLCs. Key functions within this framework include Safe Limited Speed and Position as well as Safe Torque Off.

Barry Weller, Solutions Marketing Manager – OEM at Mitsubishi Electric, comments: "We are excited to introduce this new product to the range because it potentially lowers the cost of robot-based systems, making them accessible to more users. The RV-8CRL in common with the entire MELFA CR series offers precision and articulation comparable with our higher performance FR range, so the scope of application for systems built using it is still very wide. The fact that it is easy to use makes it even more attractive, especially to companies looking to purchase one for the first time."

¹ The installation pitch being the parallel distance between centres for each of the four fixing bolt points on the base.

Image captions:

Image 1: The new MELFA RV-8CRL articulated arm robot from Mitsubishi Electric is serving the area of low-to-medium complexity applications.

[Source: Mitsubishi Electric Europe B.V.]

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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.

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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)*

Further Information:

Website: gb3a.mitsubishielectric.com

Email: automation@meuk.mee.com

Facebook: www.facebook.com/MEUKAutomation

Twitter: twitter.com/MEUKAutomation

YouTube: www.youtube.com/user/MitsubishiFAEU

LinkedIn: [www.linkedin.com Mitsubishi Electric - Automation Systems UK](http://www.linkedin.com/Mitsubishi Electric - Automation Systems UK)

Editor Contact

DMA Europa Ltd. : Carolin Heel

Tel: +44 (0)1562 751436

Web: www.dmaeuropa.com

Email: carolin@dmaeuropa.com

Company Contact

Mitsubishi Electric Europe B.V. Automation Systems Division : Garry Lewis, Manager - Marketing & Communications

Tel: +44 (0) 1707 288769

Fax: +44 (0) 1707 278695

Web: gb3a.mitsubishielectric.com

Email: automation@meuk.mee.com