

iQ Platform PLC Robots

Industrial Robots

Modular and flexible
Robots with full PLC functionality



**FULL
INTEGRATION** 

First robot controller capable of integration as a PLC module on the company's own PLC platform.

**SIMPLIFIED
ENGINEERING** 

Programming and parameterisation of all systems from a single software package.

**HIGHER
PRODUCTIVITY** 

Fast communication between all modules thanks to new high-speed back plane bus.

**REDUCED
COSTS** 

More than 8192 inputs/outputs without additional robot wiring

F-D and F-Q controller: all inclusive and extraordinarily communicative



Mitsubishi Electric robots: perfect movement, perfectly integrated.

Powerful functions, such as conveyor tracking, the control of up to 8 additional axes, the integral hand inputs and outputs and the Ethernet and USB connections provide options for flexible solutions without the need for additional components. The F-D series can be supplied with all robot kinematics from Mitsubishi Electric.

F-Q Series – full PLC functionality in the robot

The design and implementation of a robot work cell does not necessarily have to be complicated. As robots are never installed on a stand-alone basis, the system must be easy to integrate into its working environment to enable it to communicate with PLC and motion systems as well as operating panels and other systems. Together with the modular robot CPU, the Mitsubishi Electric iQ platform provides the ideal basis for integrating the full functionality of a PLC into the robot controller - once again demonstrating the company's role as a pioneer in automation technology.

Integrated but not limited

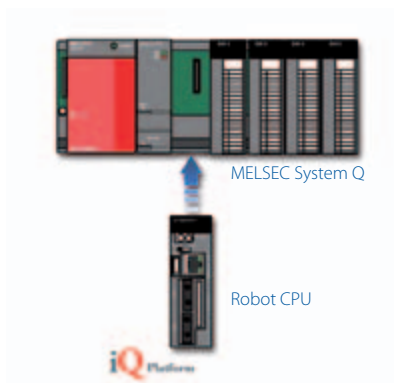
The F-Q Series' controller is added to an existing iQ system by simply plugging its CPU module into the rack. This means it can reside alongside additional CPUs that offer motion, PLC and even CNC control without any complicated engineering. Since all CPUs are in a common system, this means that the whole resources of the system (I/O, networks and specialized functions) are also available to the robot controller. Further, since the system uses a common architecture, system design is simplified, costs are reduced and spare parts are simplified. The iQ takes care of all the integration, leaving you to concentrate on your application.

The buck stops here

For the design of robotic systems, Mitsubishi offers unrivalled choice. Our two key robot families cover all requirements no matter how complex or demanding your application. Our F-D series offers a high level of performance for maximum productivity, while our F-Q series extends these benefits with the highest level of integration available from any robotic system anywhere.

F-D Series – no optional extras

When you are specifying a system, you don't want your budget to be slowly eaten away by a list of hidden extras to complete the solution. With the F-D series, a comprehensive list of standard features ensures it has the full capabilities from the outset.



Easily add robot control to your system

Reduced engineering time

For system development, options are just as broad. If an iQ based system is being used, the GX Navigator programming suite allows all relevant programming tools to be accessed from a common framework. Hence only one set of system data needs to be considered and robot, PLC, motion control and even HMI screens can all be programmed with a common set of tools.

To further speed development, Mitsubishi also offers the powerful MELFA Works and MELFA Vision software. These allow automatic path code generation from existing SolidWorks CAD data, while MELFA Vision simplifies the configuration of machine vision such as that available from COGNEX.

Both packages are supported by the robot programming software RT ToolBox2 which offers a complete project set up and management by additional functions like offline and online programming and classified parameter settings. Simulating a robot program or calculating the cycle time before the application is built up is as easy as the documentation and maintenance of the project afterwards.

Increased productivity

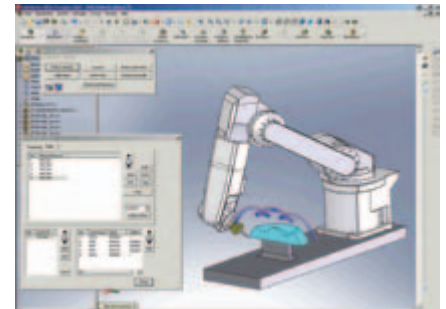
With some of the most outstanding specifications in their class, the F-D and the F-Q Series both offer significant improvements in productivity. The resulting speed of 11,300 mm/s enables cycle times of less than 0.3 seconds to be achieved for a Pick & Place operation with a repeat accuracy of 0.02 mm. The robots also provide flexible options for installing a number of end effectors such as electrical or pneumatic gripper hands.



Mitsubishi robots can handle a wide range of exacting requirements.

Greater safety

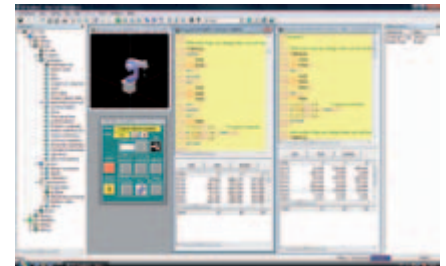
The DIN ISO-10218 safety standard is common to all robots and therefore guarantees safe operation in all applications. Mitsubishi Electric's supplementary product range with safety controllers can be connected just as easily to robot systems. Ready-made example projects make it easy for anyone to put together even complex systems quickly and effectively.



Following workpiece contours in MELFA-Works

More than just robots

Finally, a system will require more than just a robot. Mitsubishi Electric therefore also supplies other products such as frequency converters, servos and motion controllers, control panels and remote I/O for building a complete work cell. Combine this with a wealth of robot implementation expertise and a system integrator network, and you have a powerful partner to complete robotic projects. No matter whether you are transferring parts, deburring, sealing or some other application, we have the right robot solution for your application.



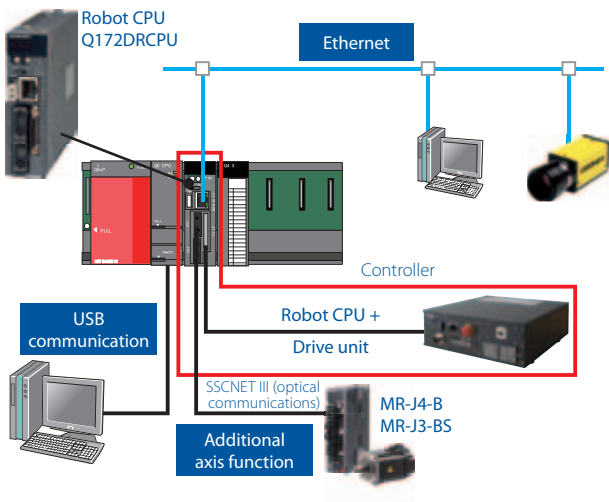
Simulating robot programs with RT ToolBox2

MELFA F-D- & F-Q Series Overview

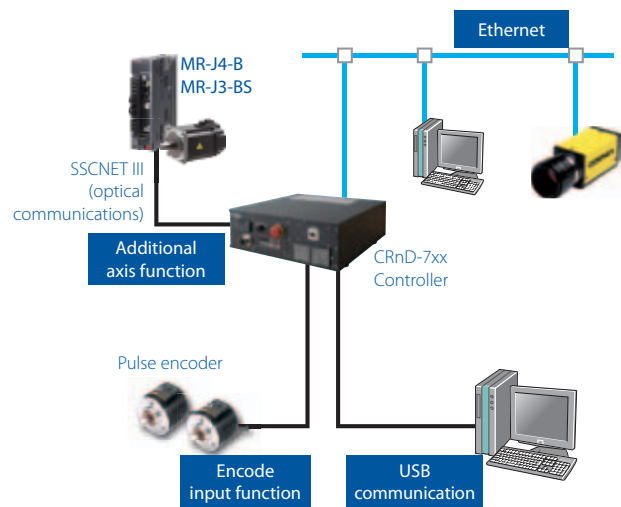
Series	Type	Series	No. of Axes	Payload (kg)
F-D series	RV-F	vertikal articulated-arm	6	2, 4, 7 and 13
	RH-FH	SCARA	4	3, 6, 12 and 20
F-Q series	RV-F	vertikal articulated-arm	6	2, 4, 7 and 13
	RH-FH	SCARA	4	3, 6, 12 and 20

Controller configuration

F-Q series



F-D series



European Branches

Mitsubishi Electric Europe B.V. Gothaer Straße 8 D-40880 Ratingen Phone: +49 (0)2102 / 486-0	Germany
Mitsubishi Electric Europe B.V.-orgs.l Radlická 714/113a CZ-158 00 Praha 5 Phone: +420 - 251 551 470	Czech Rep.
Mitsubishi Electric Europe B.V. 25, Boulevard des Bouvets F-92741 Nanterre Cedex Phone: +33 (0)1 / 55 68 55 68	France
Mitsubishi Electric Europe B.V. Viale Colleoni 7 I-20041 Agrate Brianza (MB) Phone: +39 039 / 60 53 1	Italy
Mitsubishi Electric Europe B.V. Krakowska 50 PL-32-083 Balice Phone: +48 (0)12 / 630 47 00	Poland
Mitsubishi Electric Europe B.V. 52, bld. 3 Kosmodamienskaya nab 8 floor RU-115054 Moscow Phone: +7 495 721-2070	Russia
Mitsubishi Electric Europe B.V. Carretera de Rubí 76-80 E-08190 Sant Cugat del Valles (Barcelona) Phone: 902 131121 // +34 935653131	Spain
Mitsubishi Electric Europe B.V. Travellers Lane UK-Hatfield, Herts. AL10 8XB Phone: +44 (0)1707 / 27 61 00	UK

Representatives

GEVA Wiener Straße 89 AT-2500 Baden Phone: +43 (0)2252 / 85 55 20	Austria	UTECO S, Mavrogenous Str. GR-18542 Piraeus Phone: +30 211 / 1206 900	Greece	Fonseca S.A. R. João Francisco do Casal 87/89 PT - 3801-997 Aveiro, Esqueira Phone: +351 (0)234 / 303 900	Portugal	PROCONT, spol. s r.o. Prešov Köpelná 1/A SK-080 01 Prešov Phone: +421 (0)51 7580 611	Slovakia	Robotronic AG Schlachthofstrasse 8 CH-8406 Winterthur Phone: +41 (052) / 267 02 00	Switzerland	I.C. SYSTEMS LTD. 23 Al-Saad-Al-Alee St. EG - Sarayat, Maadi, Cairo Phone: +20 (0) 2 / 235 98 548	Egypt
Koning & Hartman b.v. BE-1800 Vilvoorde Phone: +32 (0)2 / 257 02 40	Belgium	AXICONT AUTOMATIKA Kft. (ROBOT CENTER) Reitter F. U. 132 HU-1131 Budapest Phone: +36 1 / 412-0882	Hungary	SIRIUS T & S SRL Aleea Lacul Morii Nr. 3 RO-060841 Bucuresti, Sector 6 Phone: +40 (0)21 / 430 40 06	Romania	INEAR RBT d.o.o. Stegne 11 SI-1000 Ljubljana Phone: +386 (0)1 / 513 8116	Slovenia	GTS Bayraktar Bulvarı Nutuk Sok. No:5 TR-34775 Yukarı İSTANBUL Phone: +90 (0)216 526 39 90	Turkey	ILAN & GAVISH Ltd. 24 Shenkar St., Kiryat Arie IL-49001 Petah-Tiqva Phone: +972 (0)3 / 922 18 24	Israel
INEAR RBT d.o.o. Aleja Lipa 56 BA-71000 Sarajevo Phone: +387 (0)33 / 921 164	Bosnia and Herzeg.	ALFATRADE Ltd. 99, Paola Hill Malta-Paola PLA 1702 Phone: +356 (0)21 / 697 816	Malta	INEAR RBT d.o.o. Izletnicka 10 SER-113000 Smederevo Phone: +381 (0)26 / 615 401	Serbia	Beijer Electronics AB Box 426 SE-20124 Malmö Phone: +46 (0)40 / 35 86 00	Sweden	CSC Automation Ltd. 4-B, M. Raskovoyi St. UA-02660 Kiev Phone: +380 (0)44 / 494 33 55	Ukraine	CBI Ltd. Private Bag 2016 ZA-1600 Isando Phone: 27 (0)11 / 977 0770	South Africa
AKHNATON 4, Andrei Lipachev Blvd., PO Box 21 BG-1756 Sofia Phone: +359 (0)2 / 817 6000	Bulgaria	HIFLEX AUTOM. B.V. Wolweverstraat 22 NL-2984 CD Ridderkerk Phone: +31 (0)180 - 46 60 04	Netherlands	SIMAP s.r.o. Jána Derku 1671 SK-911 01 Trenčín Phone: +421 (0)32 743 04 72	Slovakia						
AutoCont C.S. s.r.o. Technologická 374/6 CZ-708 00 Ostrava-Pustkovec Phone: +420 595 691 150	Czech Republic	Koning & Hartman b.v. Haarlerbergweg 21-23 NL-1101 CH Amsterdam Phone: +31 (0)20 / 587 76 00	Netherlands								
Beijer Electronics A/S Lykkegårdsvej 17 DK-4000 Roskilde Phone: +45 (0)46 / 75 76 66	Denmark	Beijer Electronics AS Postboks 487 NO-3002 Drammen Phone: +47 (0)32 / 24 30 00	Norway								
Beijer Electronics OY Peltolte 37 FIN-28400 Ulvila Phone: +358 (0)207 / 463 540	Finland										



Mitsubishi Electric Europe B.V. / FA - European Business Group / Gothaer Straße 8 / D-40880 Ratingen / Germany / Tel.: +49(0)2102-4860 / Fax: +49(0)2102-4861120 / info@mitsubishi-automation.com / www.mitsubishi-automation.com

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