MITSUBISHI ELECTRIC

Changes for the Better

iQ-F
The next generation of FX family

The worlds best selling Compact PLC
just got even better

CONNECTED   Improved connectivity

COMPLETE   Various built-in functionalities

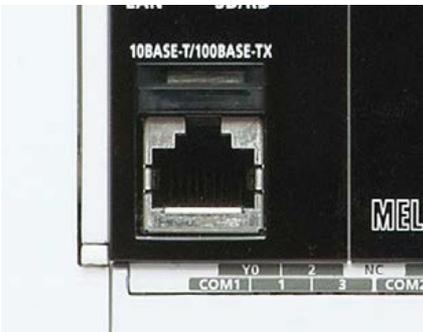**LOWER COST**   Increasing productivity & reducing TCO

IMPROVED QUALITY   Improved debugging & troubleshooting functions

Designed to improve output and reduce costs

Optimized products for higher production output with less engineering efforts

Built-in Ethernet port

Outstanding performance

With the launch of the FX5U compact PLC, as a part of the iQ-F series, Mitsubishi Electric has made the world's best selling PLC even better. Since the launch of the original FX over 30 years ago, Mitsubishi Electric has sold over 13 million units across the globe.

As the first compact PLC to be seen in the European market, the FX transformed automation by bringing PLC control and functionality into smaller, lower cost applications that would previously have had to rely solely on discrete relay-based logic. For over three decades, Mitsubishi Electric has been the market leader in this sector.

Each generation of the FX has set new standards, and not only in the compact controllers class. Successive innovations and improvements have taken these compact controllers into another dimension, delivering performance that was previously the exclusive domain of larger control systems in a compact package.

Now, with the introduction of the FX5U, Mitsubishi Electric has given these compact controllers a huge performance boost, focusing on processing power, expansion, built-in functionality and positioning & motion functions. At the same time, users benefit from simpler programming and reduced maintenance effort to greatly reduce the total cost of ownership.

Premium compact PLC

The FX5U gives the FX a performance boost and adds new features that set benchmark standards for compact PLCs. It enables users to develop more complex and sophisticated automation systems, as well as higher performance applications, without having to migrate to a larger and more costly PLC family. At the same time, programming through the same GX Works software used for other controllers in the Mitsubishi Electric range supports scalability.

Making high performance control affordable

With their compact dimensions and unri-valled cost/performance ratio, the FX5U PLCs offer the means to drive up innovation in numerous machine control applications and automation tasks, giving users the func-tionality and flexibility to realise new ideas and increase system performance.

Features and benefits:

■ High speed input & outputs

With embedded multi-speed, interrupt positioning and simultaneous start, users can achieve high speed, precise positioning at low cost with the FX5U. Further, the coun-ter interrupt and sensor interrupt deliver high speed and accurate positioning inde-pendent of PLC scan time.

■ Analogue and PID

With 2 analogue inputs and 1 analogue output as standard, and with improved PID performance, users have a low cost means of implementing sophisticated functions at low cost and without the need for additional hardware.

■ Improved connectivity

The FX5U offers simple connection options to a wide range of automation equipment, including Mitsubishi Electric servos and inverters, Cognex vision systems, networks and energy meters, with reduced wiring effort and no additional programming.

■ Built in Ethernet

With Ethernet communications included as standard, users can easily set up com-munications with other Ethernet-enabled systems and the higher level enterprise, and perform remote data monitoring over the internet plus use the SNTP function (time synchronization from a time server via a network).

■ Positioning control

The FX5U includes Mitsubishi Electric´s Simple Motion Unit as an intelligent func-tion module, providing the ability to per-form sophisticated motion control for up to 4 axes. Functions include linear interpo-lation, circular interpolation, positioning control, synchronised control, encoder fol-lowing and electronic cam.
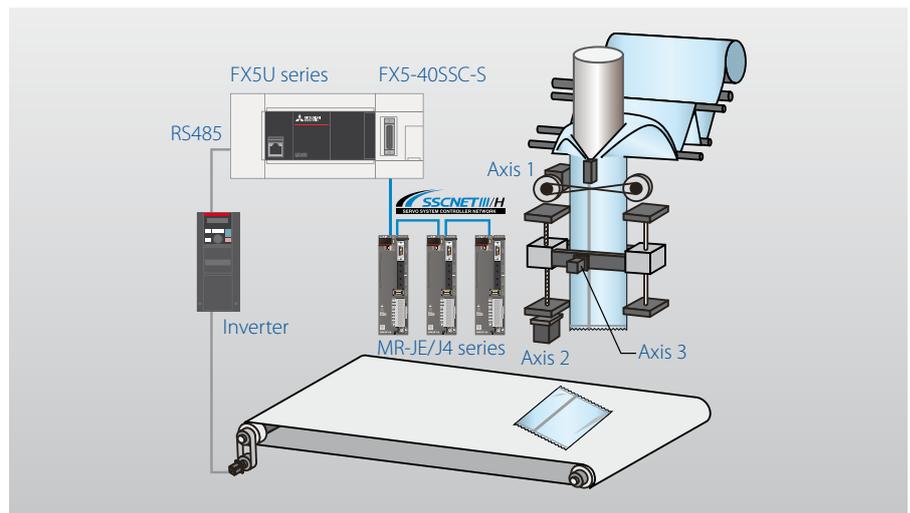
Example of simple motion application

■ Advanced synchronous control

Software-based synchronous control can be used as an alternative to mechanical control, such as gear, shaft, transmission and cam. In addition, cam control is even easier with cam auto-generation. Synchronous control can be simply operated (start/stop) for each axis, allowing synchronous and positional control axes within the same program.

■ Cam auto-generation

Cam data for a rotary cutter can be gener-ated automatically simply by registering the sheet length, synchronization width, rotary cutter axis dimensions, etc. All servo axes can be synchronized via SSCNETIII/H by plug & play.

■ Mark detection

The actual position of the servo motor can be obtained based on the registration mark printed on the high-speed moving film. Compensation of the cutter axis position, based on the registration marks, keeps the constant cutting position.

■ Simple troubleshooting

The FX5U offers a range of troubleshooting functions to speed system set-up, increase system availability and reduce maintenance requirements. Comprehensive debugging functions are included, along with improved diagnostics functions. Simple maintenance is facilitated through improved diagnostics including error history, hardware monitor, SD card for logging & tracing functions, automatic system recognition and several program debugging functions.

Add-on modules to meet your needs

■ Security functions

To protect your intellectual property FX5U comes with several security functions like privilege based program access and program on SD card with copy protection password.

■ Backward compatibility

Reuse existing FX3 expansion modules with the FX5U via a bus conversion module and easily port existing FX3 programs to FX5U.

FX5U Compact PLC

Specifications

Type		FX5U-32M	FX5U-64M	FX5U-80M
I/O range (input:output)		32 (1:1)	64 (1:1)	80 (1:1)
Maximum I/O range (including network)		256 (512)		
Dimensions (WxHxD)		150x90x83	220x90x83	285x90x83
CPU performance	LD X0	34 ns		
	MOV D0 D1	34 ns		
Memory size	Program	64 K steps		
	Comment	2 MB		
	Device/label memory	120 KB		
Power		85–264 V AC		
Output type		Relay, Transistor		
Integrated functions	High speed counter — 1-phase counter	6 ch (200 kHz) 2 ch (10 kHz)	8 ch (200 kHz)	
	High speed counter — 2-phase counter	3 ch (200 kHz) 5 ch (10 kHz)	4 ch (200 kHz) 4 ch (10 kHz)	
	Pulse output	200 kHz 4 axis (Open collector) Simple linear interpolation (Transitor type only)		
	Memory card interface	SD card		
	Communication port	Ethernet port, RS485 1ch		
	Analog — Input (resolution)	2ch (12 bit)		
	Analog — Output (resolution)	1ch (12 bit)		
	Real time clock	Retained up to 10 days with capacitor (Ambient temperature 25°C)		
	Service power supply (24 V DC)	400 mA		
Expansion board slots		1 slot		
Adaptor	Communication expandability	2		
	Analog expandability	4		

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