

Programmable
Logic
Controllers

**MELSEC
FX1S
FX1N**



**The New FX1S/FX1N -
Full Power for 10 I/Os and Up**





A variety of output technologies are available for the FX1S and FX1N, with a choice of transistor or relay outputs for different power supplies.

In addition to support for interface modules, both the FX1S and the FX1N can be fitted with a display module as a plug-in option, with the following functions:

- Monitor for bit and word operands
- Ability to change operand values
- Internal real-time clock display

This PLC generation of the future comes with the following standard integrated hardware:

- ① Serial RS-422 programming port
- ② Two analog potentiometers
- ③ RUN/STOP rocker switch



MELSEC FX1S and FX1N - The PLC Generation of the Future

PLC systems have undergone radical miniaturisation over the last few years. They haven't just got smaller, they have also become considerably more powerful at the same time.

Mitsubishi Electric now presents the PLC generation of the future, the new FX1S and FX1N.

- Deployed as a stand-alone solution, the **FX1S** has 10-30 I/Os, memory for 2 K program steps and a service-free EEPROM.

- The **FX1N** can be expanded with FX0N and FX2N special function modules. It has 14-128 I/Os, memory for 8 K program steps and a service-free EEPROM.

These innovative controllers deliver significantly more functionality, much better performance, larger memory capacity and more universal networking capabilities than their predecessors.

- Fast program execution of just 0.55µs per logical instruction
- Higher Speed counter inputs and output signals
- Simple program changes with memory cassettes

- New compare and positioning instructions
- Six interrupt inputs for fast, event-based responses

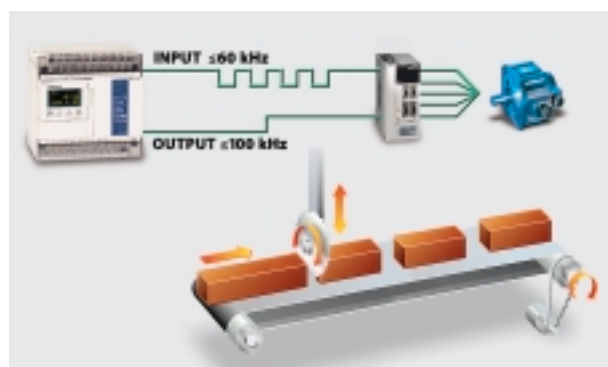
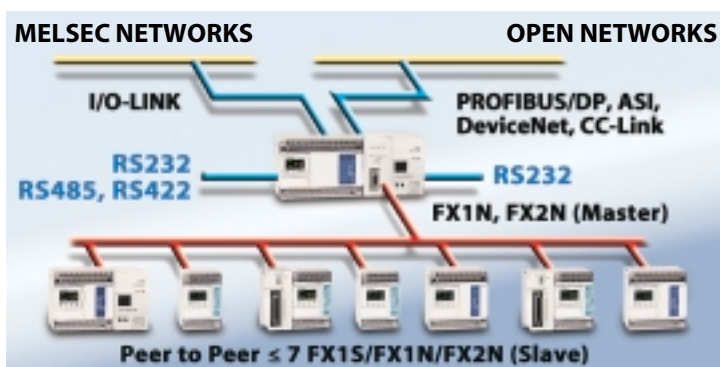
Enhanced flexibility with plug-in options

To cater to the varying needs of even more applications you can complement the



integrated RS-422 programming port with a wide range of different interfaces and network options. These functions are realised with plug-in option modules:

- On-site diagnostics with the optional FX1N-5DM-E display module
- RS-232 port, for example for a (GSM) modem, printer or barcode reader
- Additional RS-422 port for connection to HMI systems
- RS-485 port for deployment of a multidrop network or a peer-to-peer network with up to 8 stations
- A module with eight analog setpoint potentiometers is also available.



Communications modules are available for connection of the FX1N to MELSEC networks, I/O-Link systems and open fieldbus systems like Profibus/DP, DeviceNet, ASI and CC-Link.

The FX1N for all-round functionality and outstanding performance

Support for the digital expansion and special function modules of the FX0N and FX2N controllers, enables flexible configuration of the FX1N for your precise requirements, and the controller's ability to operate on power supplies from 12-24V DC means that the FX1N can also be used in such as motor vehicles applications.

Compatibility cuts costs

Existing FX0S/FX0N applications are terminal- and program-compatible to the FX1S/FX1N, making upgrades easy. Support for remote programming and debugging by modems makes it possible to perform on-site application program changes whenever necessary, using powerful programming software conforming to either the industrial IEC 1131 standard or MELSEC specifications. The new integrated DIN rail adapter with 2-point locking mechanism makes manual installation and removal literally a snap. Network communications are now transparently supported across the entire controller range, from the smallest FX1S to the largest FX2N, meaning that isolated "island solutions" are a thing of the past.

Positioning has a great future

The new FX1S and FX1N can handle both control and drive tasks, in one application if necessary. New positioning instructions, integrated high-speed counter inputs up to 60kHz, pulse-width modulated digital signal outputs with up to 100kHz, and the ability to set acceleration and deceleration ramps now make it possible to control up to two stepping or servo motors independently. These controllers can also handle simple positioning tasks with up to two independent axes without any additional special function modules or positioning units.

The outstanding features of the FX1S and FX1N models make them ideal for the following types of applications:

- Woodworking
- Packaging and wrapping
- Custom-built machines
- Handling systems
- Motor vehicle applications
- Environmental systems



The FX1S/FX1N: Small but mighty, and fully compatible with the FX0S and FX0N



The new FX1S and FX1N are fully hardware-compatible with the FX0S and FX0N.

The following expansion modules are available for both the FX1S and FX1N:

- **FX0N-232ADP and FX0N-485ADP communications modules**

The following modules are available for the FX1N only:

- **All the expansion modules and devices of the FX0N and FX2N controllers**

Series/model	FX1S	FX1N
Base units	10/14/20/30 I/Os	14/24/40/60 I/Os
Power supply	24 V DC or 240 V AC	12 V - 24 V DC or 240 V AC
Ambient temperature	0 - 55 °C	0 - 55 °C
Output technology	Relay/transistor outputs	Relay/transistor outputs
Program memory	2,000 steps	8,000 steps
Prog. cycle period	0.55µs/log. instruction	0.55µs/log. instruction
Max. I/Os	30	128
Instruction set	114 instructions	114 instructions
Data registers	256	8,000
Relay registers	512	1,536
Timers	64	256
Counters	32	235
Analog inputs	-	up to 32, 12 or 16 bits resolution
Analog outputs	-	up to 32, 12 bits resolution
Display	FX1N-5DM-E (option)	FX1N-5DM-E (option)
Programming	IEC 1131.3 and MELSEC software	IEC 1131.3 and MELSEC software
Network support	Computer link, peer-to-peer, parallel link	Computer link, peer-to-peer, parallel link, open fieldbus (Profibus/DP, ASI, DeviceNet, CC-Link), I/O-Link
Dimensions/mm (WxHxD)	60/60/75/100 x 90 x 75	90/90/130/175 x 90 x 75

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