



Fast and flexible compact PLC

The next generation of compact controllers

The third technology generation of its successful range of compact PLCs – Mitsubishi Electric announces the worldwide launch of the FX3U series.

Harald Voigt

The new controllers have been completely redesigned for the international market. They feature a unique new second adapter bus system whilst maintaining full compatibility with the existing MELSEC FX series.

The FX3U compact controller is the new top-of-the-line model in Mitsubishi Electric's highly-successful family of compact PLCs, of which over six million units have been sold worldwide over the last 25 years.

With significantly improved specifications and a wide selection of expansion, special function and network modules the FX3U is a highly versatile and economical automation platform for industrial control applications, both in the mechanical engineering sector and as a universal solution in all other industries.



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Unique: The additional adapter bus

The functionally-designed and compact units feature state-of-the-art technology and a new, user-friendly system. In addition to the regular system bus for the standard modules of the FX series the latest controller generation from Mitsubishi Electric has a second bus: the adapter bus. Up to ten additional modules – four analog function adapters, two counters, two pulse output modules and two interface modules (RS232 or RS485) – can be connected to the left side of the controller.

Expandable: The base units

The base units in the new series are fitted with modern microprocessors and configured for international operation with 100-240V AC or 24V DC power supplies. They are available with 16, 32, 48, 64, 80 or 128 inputs and outputs (I/Os), and with digital relay and transistor output technologies. All the base units can be upgraded to up to 256 I/Os with expansion modules. This can be increased to 384 I/Os with suitable networks (CC-Link or AS-Interface).

Another new feature is the display module that can be installed directly on the front panel of the

unit or connected remotely via a cable. Important control data can be displayed and edited with four function keys and error messages can also be displayed as plain text.

Powerful: The specifications

The integrated, battery-powered non-volatile memory has capacity for up to 64K program steps. That is sufficient even for complex control programs and saves money for additional memory modules. With a program cycle time of just 0.065 microseconds per logical instruction the FX3U is one of the world's fastest compact controllers.

Over 70 new instructions make the programmer's task easier. There are now a total of 209 pre-programmed instructions, which make it possible to program complex control tasks quickly and easily.

Like all compact and modular controllers from Mitsubishi Electric the new FX3U is programmed with the modern European standard (IEC 61131-3) GX IEC Developer package or with the well-established GX Developer.

Integrated positioning controller

The new PLC can handle even more demanding positioning tasks

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without additional modules. Functions like high-speed counters and pulse signal outputs with frequencies of up to 100 KHz are integrated in all the base units, along with a wide range of positioning instructions, including some new ones. This makes it possible to control up to three independent positioning axes. Users who need more can add the new counter and pulse signal output adapters that support frequencies of up to 200 KHz and make it possible to control up to four independent stepping or servo motors.

Additional interfaces contribute to the FX3U's impressive communications capabilities. It can exchange data simultaneously with up to three different devices via serial interfaces. A serial programming interface (RS-422) is integrated in the front panel and is used to communicate with a computer or a HMI control panel. Other devices like barcode readers, printers, modems and other controllers can be connected via separate interface modules that can either be installed in the controller housing (RS-232, RS-422, RS-485 and USB) or connected via the adapter bus (RS-232, RS-485).