

FX3U

MELSEC PLC

**A new PLC concept with
more power and performance**



Increased I/O capacity for advanced network/system control



Up to 4.5 times faster for quicker program response



5 times more data storage to make program construction easier



8 times more memory for larger and more complex programs

FX3U - A new PLC concept

The new FX3U CPU brings a combination of greater flexibility and increased performance to the FX Family.



Introduction ///

New high speed bus

The FX3U design has increased the opportunity to configure the PLC directly for your needs. Following the standard FX Family configuration, the FX3U CPU can be expanded to the right hand side using a wide range of options. The FX3U has an enhanced communications bus that automatically switches into high speed mode for communication with new FX3U expansion modules. Full compatibility is still available with FX2N and FX0N expansion blocks, and when these are configured the FX3U automatically reduces the bus speed to suit.

However, the major benefit for the user is that the analog and positioning adapter units no longer require the use of the traditional To/From instructions to configure and operate.



The FX3U can use new FX3U blocks as well as standard FX2N and FX0N expansion blocks.



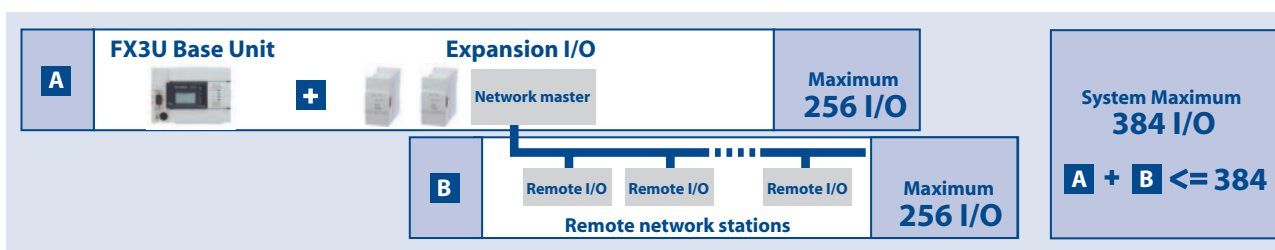
FX3U has a unique new system of directly programmable adapters.

Adapters add flexibility

A major design enhancement of FX3U is the new adapter expansion bus on the left hand side of the FX3U CPU. Through this bus users can add additional analog and temperature units as well as multiple communications and positioning blocks.

All control is through direct access data registers and setting bits. This means quicker set-up, easier use, and above all much higher processing speeds.

What's new ///



FX3U provides additional I/O and networking capacity.

Increased I/O capacity

With enhanced networking functions, the FX3U requires an increased input/output (I/O) range. FX3U can support systems with combined local I/O and networked I/O up to a total of 384 I/O points. For users, this means increased system control and added possibilities for advanced networks.

In addition FX3U also fully supports Profibus/DP as well as Ethernet using TCP and UDP protocols.

Up to 4.5 times faster

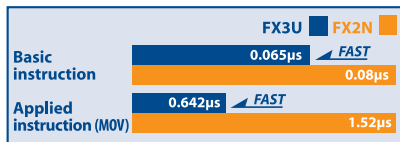
This means the PC MIX value has been greatly improved with basic instructions now being processed in 0.065µsec.

For users this means quicker program response and more accurate process performance as inputs, outputs and actions are processed and monitored more times per second.

8 times more memory

FX3U comes with a standard internal memory of 64k steps, which is 8 times more memory than FX2N.

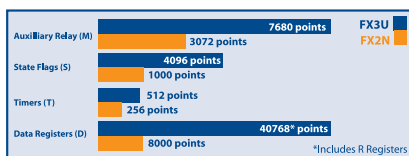
More memory means users can write larger and more complex programs, store more data in file registers, or take greater advantage of using IEC 61131-3 style programming tools.



FX3U provides increased performance in all areas.

5 times more data storage

With a larger program memory comes the need for more operational devices such as timers, state flags, auxiliary relays and data registers. The FX3U has increased capacity in all of these major areas making program construction easier. Data register capacity has increased by a factor of 5 reflecting the needs of users who have an increased requirement to log operation information against products or batches of products being manufactured.



FX3U provides increased performance in all areas.

75 new instructions

The FX3U has 75 new instructions in comparison with FX2N. This now makes available 209 instructions for program creation. All of the instructions follow the traditional FX Applied instruction concept designed to make the task of application building and program writing easier and quicker, with less chance for errors.

New instructions include greater control over data processing with a range of new comparison and string manipulation commands.

Simple high speed positioning

The FX3U has been designed with six high speed counters that can each count up to 100kHz simultaneously per channel. This, combined with three 100kHz pulse train outputs, means users can directly configure simple 3-axis positioning systems without the use of additional modules.

However, the new High Speed Counter ADP and Pulse train ADPs can provide the FX3U with maximum positioning performance. Each unit can process signal speeds of up to 200kHz.

FX3U at a glance

I/O range

16 – 384 (Discrete I/O, maximum 256)

Program memory

64k steps (standard)

Basic instruction processing

0.065µsec/logical instruction

Analog signal processing

Up to 80 analog inputs,
48 analog outputs

Analog resolution

8, 12 and 16 bits

Analog options

14 analog input, output and temperature blocks available for selection

Positioning

Internal:

6 high speed counters (100kHz)

2 high speed counters (10kHz)

3 pulse train outputs (100kHz),
transistor unit only

External:

High speed counter ADP module
(200kHz)

Pulse train ADP (200kHz)

Pulse train output block (1MHz)

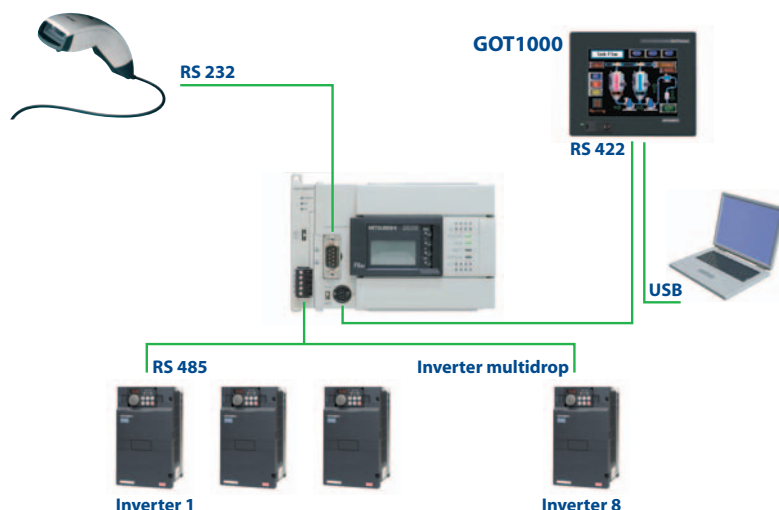
Improved communications ///

A great communicator

FX3U has strengthened the communications capability of the FX Family even further.

The new adapters allow up to three RS communication channels to be operated simultaneously allowing multiple HMIs to be connected to a single FX3U CPU or combinations of HMIs, third party devices and programming tools – the choice is yours.

The FX3U also supports a wide range of network options including AS-interface, Profibus/DP, CC-Link, DeviceNet, CANopen as well as Ethernet.



FX3U has a range of flexible communication options.

Specifications ///

Specifications	FX3U
I/O points (addresses)	Max. total 384 (with remote I/O) Address range Max. 256 direct addressing and max. 256 network I/O
Program memory	64,000 steps RAM (internal), exchangeable FL-ROM for easy program exchange
Cycle period	0.065 µs /basic instruction
Number of instructions	27 sequence instructions, 2 step ladder instructions, 209 applied instructions
Programming language	Step ladder, instruction list, SFC and IEC61131-3 languages using GX IEC Developer
Program execution	Cyclical execution, refreshmode processing
Internal relays	7680
Special relays	512
State relays	4096
Timer	512
Counter	235
High-speed counter	8 points 1 phase (6 points max. 100kHz, 2 points max. 10 kHz); 2 points 2 phase max. 50kHz
Real-time clock	Year, month, day, hour, minute, second, weekday
Data register	8000
File register	32768
Index register	16
Special register	512
Pointer	4096
Nestings	8
Interrupt inputs	6
Communication options	Ethernet (TCP/UDP), Profibus-DP, CC-Link, DeviceNet, CANopen, AS-interface, RS 485, RS 232, USB

EUROPEAN BRANCHES

MITSUBISHI ELECTRIC EUROPE B.V.
25, Boulevard des Bouvets
F-92741 Nanterre Cedex
Phone: +33 1 55 68 55 68

FRANCE

MITSUBISHI ELECTRIC EUROPE B.V.
Gothaer Straße 8
D-40880 Ratingen
Phone: +49 (0) 2102 / 486-0

GERMANY

MITSUBISHI ELECTRIC EUROPE B.V.
Westgate Business Park, Ballymount
IRL-Dublin 24
Phone: +353 (0) 1 / 419 88 00

IRELAND

MITSUBISHI ELECTRIC EUROPE B.V.
Via Paracelso 12
I-20041 Agrate Brianza (MI)
Phone: +39 039 6053 1

ITALY

MITSUBISHI ELECTRIC EUROPE B.V.
Carretera de Rubí 76-80
E-08190 Sant Cugat del Valles
Phone: +34 9 3 / 565 3131

SPAIN

MITSUBISHI ELECTRIC EUROPE B.V.
Travellers Lane
GB-Hatfield Herts. AL10 8 XB
Phone: +44 (0) 1707 / 27 61 00

UK

EUROPEAN REPRESENTATIVES

GEVA GmbH
Wiener Straße 89
AT-2500 Baden
Phone: +43 (0) 2252 / 85 55 20

AUSTRIA

TEHNIKON
Oktyabrskaya 16/5, Ap 704
BY-220030 Minsk
Phone: +375 (0)17 / 210 4626

BELARUS

Koning & Hartman B.V.
Researchpark Zellik, Pontbeeklaan 43
BE-1731 Brussels
Phone: +32 (0)2 / 467 17 44

BELGIUM

TELECON CO.
Andrej Ljapchev Lvd. Pk 21 4
BG-1756 Sofia
Phone: +359 (0) 2 / 97 44 05 8

BULGARIA

AutoCont
Nemocični 12
CZ-702 00 Ostrava 2
Phone: +420 59 / 6152 111

CZECH REPUBLIC

Louis poulsen
Geminievej 32
DK-2670 Greve
Phone: +45 (0) 70 / 10 15 35

DENMARK

UTU Elektrotehnika AS
Palmu mnt.160
EE-11317 Tallinn
Phone: +372 (0) 6 / 51 72 80

ESTONIA

Beijer Electronics OY
Anastie 6a
FIN-01740 Vantaa
Phone: +358 (0) 9 / 886 77 500

FINLAND

UTECO A.B.E.E.
S. Mavrogenous Str.
GR-18542 Piraeus
Phone: +302 (0) 10 / 42 10 050

GREECE

Meltrade Ltd.
Fertő Utca 14.
HU-1107 Budapest
Phone: +36 (0)1 / 431-9726

HUNGARY

Ilan & Gavish Ltd.
24 Shenkar St., Kiryat Arze
IL-49001 Petah-Tiqva
Phone: +972 (0) 3 / 922 18 24

ISRAEL

TEXEL Electronics Ltd.
Box 6272
IL-42160 Netanya
Phone: +972 (0) 9 / 863 08 91

ISRAEL

SIA POWEL
Lienes iela 28
LV-1009 Riga
Phone: +371 784 / 22 80

LATVIA

UAB UTU POWEL
Savanoriu pr. 187
LT-2053 Vilnius
Phone: +370 (0) 52323-101

LITHUANIA

INTEHIS SRL
Cuza-Voda 36/1-81
MD-2061 Chisinau
Phone: +373 (0)2 / 562 263

MOLDOVA

Koning & Hartman B.V.
Haarlerbergweg 21-23
NL-1101 AK Amsterdam
Phone: +31 (0)20 / 587 76 00

NETHERLANDS

Beijer Electronics A/S
Teglværksveien 1
N-3002 Drammen
Phone: +47 (0) 32 / 24 30 00

NORWAY

MPL Technology Sp. z o.o.
ul. Sliczna 36
PL-31 444 Kraków
Phone: +48 (0) 12 / 632 28 85

POLAND

Sirius Trading & Services srl
Str. Biharia No. 67-77
RO-013981 Bucuresti 1
Phone: +40 (0) 21 / 201 1146

ROMANIA

INEA SR d.o.o. SERBIA AND MONTENEGRO
Karadjordjeva 12/260
SCG-113000 Smederevo
Phone: +381 (0)26/ 617 - 163

SERBIA AND MONTENEGRO

AutoCont Control s.r.o.
Radlinského 47
SK-02601 Dolný Kubín
Phone: +421 435868 210

SLOVAKIA

INEA d.o.o.
Stegne 11
SI-1000 Ljubljana
Phone: +386 (0) 1-513 8100

SLOVENIA

Beijer Electronics AB
Box 426
S-20124 Malmö
Phone: +46 (0) 40 / 35 86 00

SWEDEN

ECONOTEC AG
Postfach 282
CH-8309 Nürensdorf
Phone: +41 (0) 1 / 838 48 11

SWITZERLAND

GTS
Danilovce Cad. No. 43 Kat. 2
TR-00270 Ökmejdani-Istanbul
Phone: +90 (0) 212 / 320 1640

ROMANIA

CSC Automation Ltd.
15, M. Raskova St., Fl. 10, Office 1010
UA-02002 Kiev
Phone: +380 (0) 44 / 494 3355

UKRAINE

Kazpromautomatiks Ltd.
2, Scladskaya Str.
KAZ-470046 Karaganda
Phone: +7 3212 50 11 50

KAZAKHSTAN

Automatika Sever Ltd.
Lva Tolstogo Str. 7, Off. 311
RU-197376 St Petersburg
Phone: +7 812 1183 238

RUSSIA

Consys
Przemyslnenaya St. 42
RU-198099 St Petersburg
Phone: +7 812 325 3653

RUSSIA

Electrotechnical
Shetlinkina St. 33, Office 116
RU-630088 Novosibirsk
Phone: +7 3832 / 119598

RUSSIA

Elektrostyle
Poslanikov Per., 9, Str.1
RU-107005 Moscow
Phone: +7 095 542 4323

RUSSIA

Elektrostyle
Krasny Prospekt 220-1, Office No. 312
RU-630049 Novosibirsk
Phone: +7 3832 / 106618

RUSSIA

KOS
Byazanskij Prospekt, 8A, Off. 100
RU-109428 Moscow
Phone: +7 095 232 0207

RUSSIA

NPP Uralelectra
Sverdlova 11A
RU-620027 Ekaterinburg
Phone: +7 34 32 / 532745

RUSSIA

STC Drive Technique
Poslanikov Per., 9, Str.1
RU-107005 Moscow
Phone: +7 095 790 7210

RUSSIA

CBI Ltd.
Private Bag 2016
ZA-1600 Isando
Phone: +27 (0) 11/ 928 2000

SOUTH AFRICA



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 486112 /// info@mitsubishi-automation.com /// www.mitsubishi-automation.com

Specifications subject to change without notice /// Art-Nr. 166508-A /// 10.2005