

FX3 series lineup complete!

With the launch of FX3s, Mitsubishi's FX3 series line of microcontrollers is finally completed. Whatever your requirements may be, you will be sure to find just the right PLC you need. Push the limits of control with FX3 series PLCs.

Functionality



High-end

FX3U FX3UC

Superior speed, power, and flexibility. Realize high speed control, network support, data logging, and more.

Standard

FX3G FX3GE FX3GC

From automation to network, to more advanced control. Supports features required for basic control and a variety of applications.

Entry level

FX3s

Simple and cost effective. Basic model that supports analog and communication expansion. Perfect for simple automation tasks. A 2ch analog input version is also available for the 30-point AC power type.

Control size

FX3 series overview

	FX3s <small>NEW</small>	FX3G	FX3GE <small>NEW</small>	FX3U
Main unit I/O	10/14/20/30 I/O Max. 30	14/24/40/60 I/O Max. 128	24/40 I/O Max. 128	16/32/48/64/80/128 I/O Max. 256
Control size	(Max. 34 with I/O Board)	(Max. 256 with CC-Link)	(Max. 256 with CC-Link)	(Max. 384 with CC-Link)
Terminal	Screw	Screw	Screw	Screw
Power supply	AC/DC	AC/DC	AC/DC	AC/DC
24V DC input	Sink/Source	Sink/Source	Sink/Source	Sink/Source
Output	Relay/Transistor	Relay/Transistor	Relay/Transistor	Relay/Transistor
Shipping approvals	—	✓	—	✓
Internal memory	16k steps EEPROM program memory : 4k steps	32k steps EEPROM	32k steps EEPROM	64k steps RAM
RTC	Built-in	Built-in	Built-in	Built-in
Battery	—	Option	Option	Built-in
Communication ports	USB, RS-422	USB, RS-422	USB, RS-422, Ethernet	RS-422 (USB option)
High speed counters	1 phase 60kHz : 2 10kHz : 4	1 phase 60kHz : 4 10kHz : 2	1 phase 60kHz : 4 10kHz : 2	1 phase 100kHz : 6 10kHz : 2
Positioning	2 axes 100kHz	14/24 I/O : 2 axes 40/60 I/O : 3 axes 100kHz	24 I/O : 2 axes 40 I/O : 3 axes 100kHz	3 axes 100kHz
Analog I/O	Only analog type : input 2	—	Input : 2 Output : 1	—
Analog volume	2*	2	2	—
Expansion boards	1	14/24 I/O : 1 40/60 I/O : 2	1	1
Special adapters	2	14/24 I/O : 2 40/60 I/O : 4	2	10
Memory cassette	✓	✓	✓	✓
Display module	—	✓	✓	✓
CC-Link V2	—	✓	✓	✓
MODBUS*	✓	✓	✓	✓
Ethernet	✓	✓	—	✓
SSCNET III	—	—	—	✓

PROGRAMMABLE CONTROLLERS

General Specifications

Item	Specifications																									
Ambient temperature	0 to 55°C (32 to 131°F) when operating and -25 to 75°C (-13 to 167°F) when stored																									
Ambient humidity	5 to 95%RH (no condensation) when operating																									
Vibration resistance*1	<table border="1"> <thead> <tr> <th></th> <th>Frequency (Hz)</th> <th>Acceleration (m/s²)</th> <th>Half Amplitude (mm)</th> <th>Sweep Count for X, Y, Z: 10 times (80 min in each direction)</th> </tr> </thead> <tbody> <tr> <td>When installed on DIN rail</td> <td>10 to 57</td> <td>—</td> <td>0.035</td> <td></td> </tr> <tr> <td>When installed directly</td> <td>57 to 150</td> <td>4.9</td> <td>—</td> <td></td> </tr> <tr> <td></td> <td>10 to 57</td> <td>—</td> <td>0.075</td> <td></td> </tr> <tr> <td></td> <td>57 to 150</td> <td>9.8</td> <td>—</td> <td></td> </tr> </tbody> </table>		Frequency (Hz)	Acceleration (m/s ²)	Half Amplitude (mm)	Sweep Count for X, Y, Z: 10 times (80 min in each direction)	When installed on DIN rail	10 to 57	—	0.035		When installed directly	57 to 150	4.9	—			10 to 57	—	0.075			57 to 150	9.8	—	
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Shock resistance*1	147m/s ² Acceleration, Action time : 11ms, 3 times by half-sine pulse in each direction X, Y, and Z																									
Noise durability	By noise simulator at noise voltage of 1,000Vp-p, noise width of 1ms, rise time of 1ns and period of 30 to 100Hz																									
Dielectric withstand voltage*2	1.5kV AC for one minute, 500VAC for one minute																									
Insulation resistance*2	5MΩ or more by 500V DC megger																									
Grounding	Class D : Grounding resistance 100Ω or less																									
Working atmosphere	Free from corrosive or flammable gas and excessive conductive dusts																									
Working altitude	<2000m																									

*1 : The criterion is shown in IEC61131-2.

*2 : Dielectric withstand voltage and insulation resistance are shown in the following table.

Product Specifications

Item	FX3GE-24M[]	FX3GE-40M[]
I/O points	256 total (combined local and CC-Link remote I/O)	256 total (combined local and CC-Link remote I/O)
Address range	Max. 128 direct addressing and Max. 128 remote I/O	Max. 128 direct addressing and Max. 128 remote I/O
Program memory	32,000 steps EEPROM (internal), exchangeable EEPROM memory cassette	32,000 steps EEPROM (internal), exchangeable EEPROM memory cassette
Instruction time	0.21μs or 0.42μs/contact instruction	0.21μs or 0.42μs/contact instruction
Number of instructions	29 sequence instructions, 2 step ladder instructions, 124 applied instructions	29 sequence instructions, 2 step ladder instructions, 124 applied instructions
Programming language	Step ladder, instruction list, SFC step ladder	Step ladder, instruction list, SFC step ladder
Program execution	Cyclical execution, refresh mode processing	Cyclical execution, refresh mode processing
Program protection	2 different keywords, Max password length 16 characters	2 different keywords, Max password length 16 characters
Inputs	Number of input points : 14 Input signal voltage/form : 24V DC +10%, -10%, Sink/Source Input signal current/impedance : X000 to X007 : 7mA/24V DC, 3.3kΩ/ X010 or more : 5mA/24V DC, 4.3kΩ	Number of input points : 24 Input signal voltage/form : 24V DC +10%, -10%, Sink/Source Input signal current/impedance : X000 to X007 : 7mA/24V DC, 3.3kΩ/ X010 or more : 5mA/24V DC, 4.3kΩ
Outputs	Number of output points : 10 points (16 points)*1 Output type : Relay/Transistor External power supply : Relay : 30V DC or less, 240V AC or less*2 Transistor : 5 to 30V DC Max. resistance load : Relay : 2A (1 point common), 8A (4 points common) Transistor : 0.5A (1 point common), 0.8A (4 points common)	Number of output points : 16 Output type : Relay/Transistor External power supply : Relay : 30V DC or less, 240V AC or less*2 Transistor : 5 to 30V DC Max. resistance load : Relay : 2A (1 point common), 8A (4 points common) Transistor : 0.5A (1 point common), 0.8A (4 points common)
Analog inputs	Input range : Voltage input : 0V to 10V DC, 198.7kΩ (Max. -0.5V, +15V) Current input : 4mA to 20mA DC, 250Ω (Max. -2mA, +30mA) Resolution : Voltage input : 2.5mV (10V/4000), Current input : 5μA (16mA/3200)	Input range : Voltage input : 0V to 10V DC (External load : 2k to 1MΩ) Current input : 4mA to 20mA DC (External load : 500Ω or less) Resolution : Voltage input : 2.5mV (10V/4000), Current input : 4μA (16mA/4000)
Analog outputs	Output range : Voltage output : 0V to 10V DC (External load : 2k to 1MΩ) Current output : 4mA to 20mA DC (External load : 500Ω or less) Resolution : Voltage output : 2.5mV (10V/4000), Current output : 4μA (16mA/4000)	Output range : Voltage output : 0V to 10V DC (External load : 2k to 1MΩ) Current output : 4mA to 20mA DC (External load : 500Ω or less) Resolution : Voltage output : 2.5mV (10V/4000), Current output : 4μA (16mA/4000)
Ethernet	Data transmission speed : 100Mbps/10Mbps Communication method : Full-duplex/Half-duplex Transmission method : Base band Maximum segment length : 100m (328'")	Data transmission speed : 100Mbps/10Mbps Communication method : Full-duplex/Half-duplex Transmission method : Base band Maximum segment length : 100m (328'")

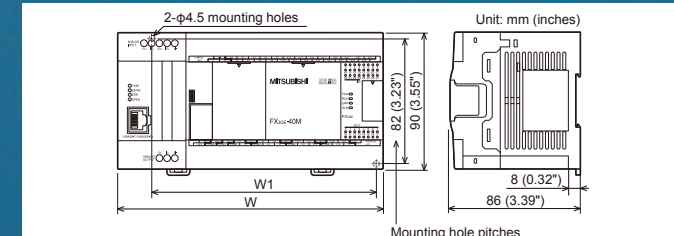
*1: Each value inside () indicates the number of occupied points.

*2: Between 250V and 240V CE are not compliant.

Power Supply Specifications

Item	Specifications	DC power type
Supply voltage	100 to 240V AC	24V DC
Allowable instantaneous power failure time	10ms or less.	5ms or less.
Power fuse	FX3GE-24M[] : 250V 1A FX3GE-40M[] : 250V 3.15A	125V 2.5A 125V 3.15A
Rush current	30A max. 5ms or less/100V AC 50A max. 5ms or less/200V AC	30A max. 1ms or less/24V DC
Power consumption	FX3GE-24M[] : 32W FX3GE-40M[] : 37W	21W 25W
24V DC service power supply	400mA	—

External Dimensions



Model name	W : mm(inches)	W1 : mm(inches) Direct mounting hole pitches	MASS(Weight) : kg(lbs)
FX3GE-24M[]	130(5.12")	105(4.13")	0.60(1.32)
FX3GE-40M[]	175(6.89")	150(5.90")	0.80(1.76)

* 35-mm-wide DIN rail or Direct (screw) mounting (M4)

Item	Specifications
Auxiliary relays	7,680 total, with 384 general (M0 - M383), 1152 EEPROM latched (M384 - M1535), and 6,144 general/optional latched (M1536 - M7679)
Special auxiliary relays	512 (M8000 - M8511)
State relays	4,096 total, with 1,000 EEPROM latched (S0 - S999) and 3,096 general/optional latched (S1000 - S4095)
Timers	320 total, with 206 100ms (T0 - T199 and T250 - T255), 46 10ms (T200 - T245), and 68 1ms (T246 - T249 and T256 - T319)
External setpoint entry via potentiometer	2
Counters	235 total (16 bit and 32 bit), with 36 general (C0 - C15 and C200 - C219) and 199 EEPROM latched (C16 - C199 and C220 - C234)
High-speed counters	21 total, with 16 1-phase (C235 - C250) and 5 2-phase (C251 - C255)
High-speed counter speed	1-phase, 6points max : 60kHz/4points, 10kHz/2points 2-phase, 3points max : 30kHz/2points, 5kHz/1point
Real-time clock	Year, month, day, hour, minute, second, day of the week
Data registers	8,000 total, with 128 general (D0 - D127), 972 EEPROM latched (D128 - D1099), and 6,900 general/optional latched (D1100 - D7999)
Extension registers	24,000 (R0 - R23999)
Extension file registers	24,000 (ER0 - R23999) internal/optional memory
Index registers	16
Special data registers	512 (D8000 - D8511)
Pointers	2,048
Nestings	8
Interrupt inputs	6
Constants	16bit : K : -32,768 to +32,767; H : 0 to FFFF; 32bit : K : -2,147,483,648 to +2,147,483,647; H : 0 to FFFF FFFF

Safety Warning

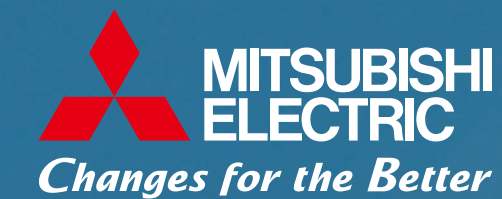
To ensure proper use of the products in this document, please be sure to read the instruction manual prior to use.

Registration

- Ethernet is a trademark of Xerox Corporation in the United States.
- MODBUS is a registered trademark of Schneider Electric SA.
- All other company names and product names used in this document are trademarks or registered trademarks of their respective companies.

MITSUBISHI ELECTRIC CORPORATION

HEAD OFFICE: TOKYO BLDG., 2-7-3, MARUNOUCHI, CHIYODA-KU, TOKYO 100-8310, JAPAN
<http://Global.MitsubishiElectric.com>



for a greener tomorrow



PROGRAMMABLE CONTROLLERS

All-in-one standard including analog and network features

MELSEC-F

FX3GE Debut!



Empowering Industries

All-in-one standard! FX3GE

including analog and network features



What's in the New FX3GE PLC!

FX3GE adds built-in analog input/output and Ethernet connectivity on top of FX3G performance. A great fit for many applications.

Built-in analog input

- 2ch built in
- Voltage input
0 to 0V DC (Resolution 2.5mV (10V/4000))
or
- Current input
4 to 20mA (Resolution 5μA (16mA/3200))



FX3GE-40M[]

Built-in analog output

- 1ch built in
- Voltage output
0 to 10V DC (Resolution 2.5mV (10V/4000))
or
- Current output
4 to 20mA (Resolution 4μA (16mA/4000))



FX3GE-24M[]

Built-in Ethernet port

Supports remote monitoring and maintenance on high speed 10BASE-T/100BASE-TX communication.



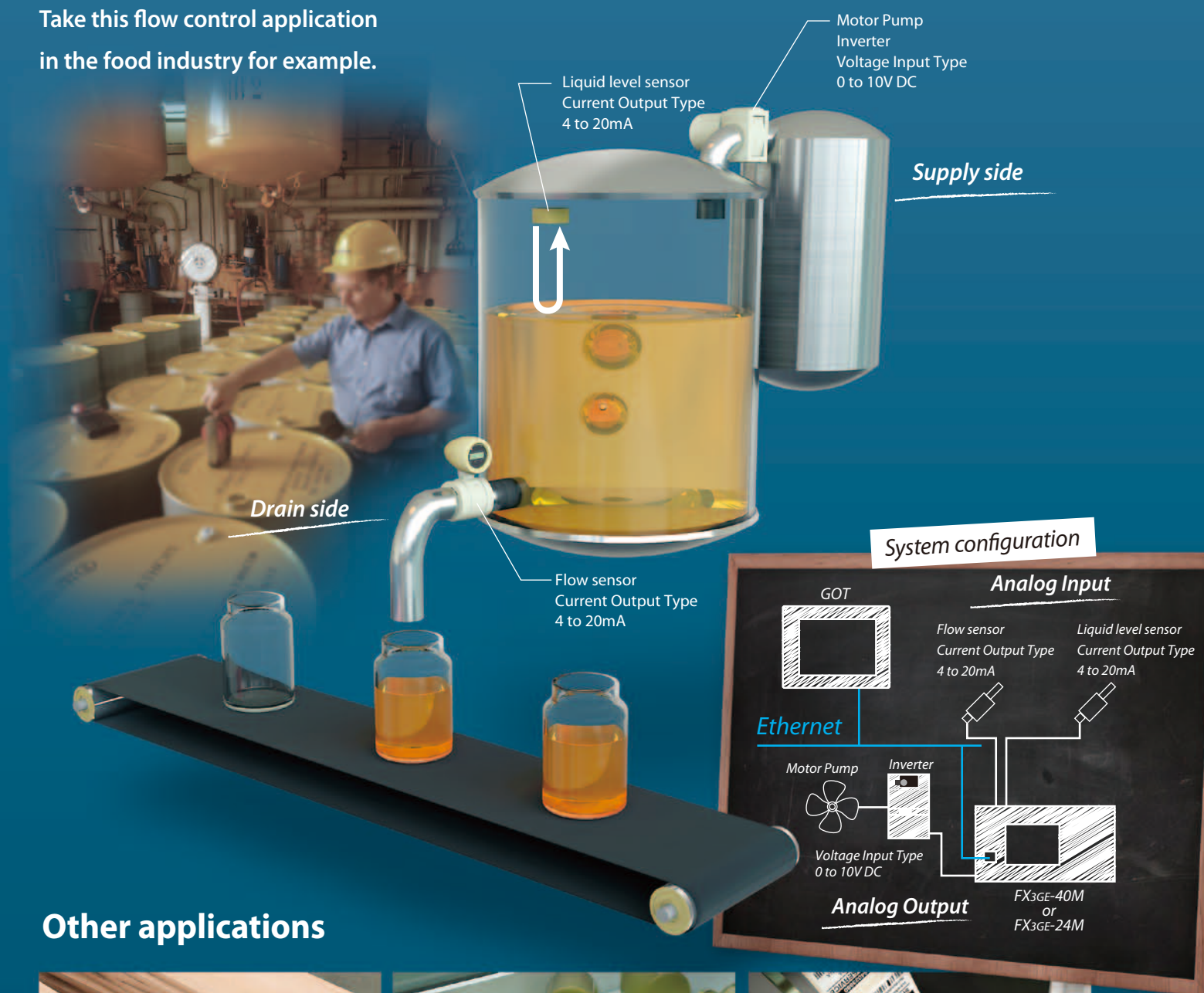
Web based Data Monitoring

Read PLC information from any networked device with a standard web browser. For security, optional PLC keyword protections prohibit unauthorized access.



Where can the new FX3GE PLC be used?

Take this flow control application in the food industry for example.



Other applications



Smooth production control required for wood cutting machines



Analog data management for injection molding machines



Label printing machines with network functionality

Flexible Expandability

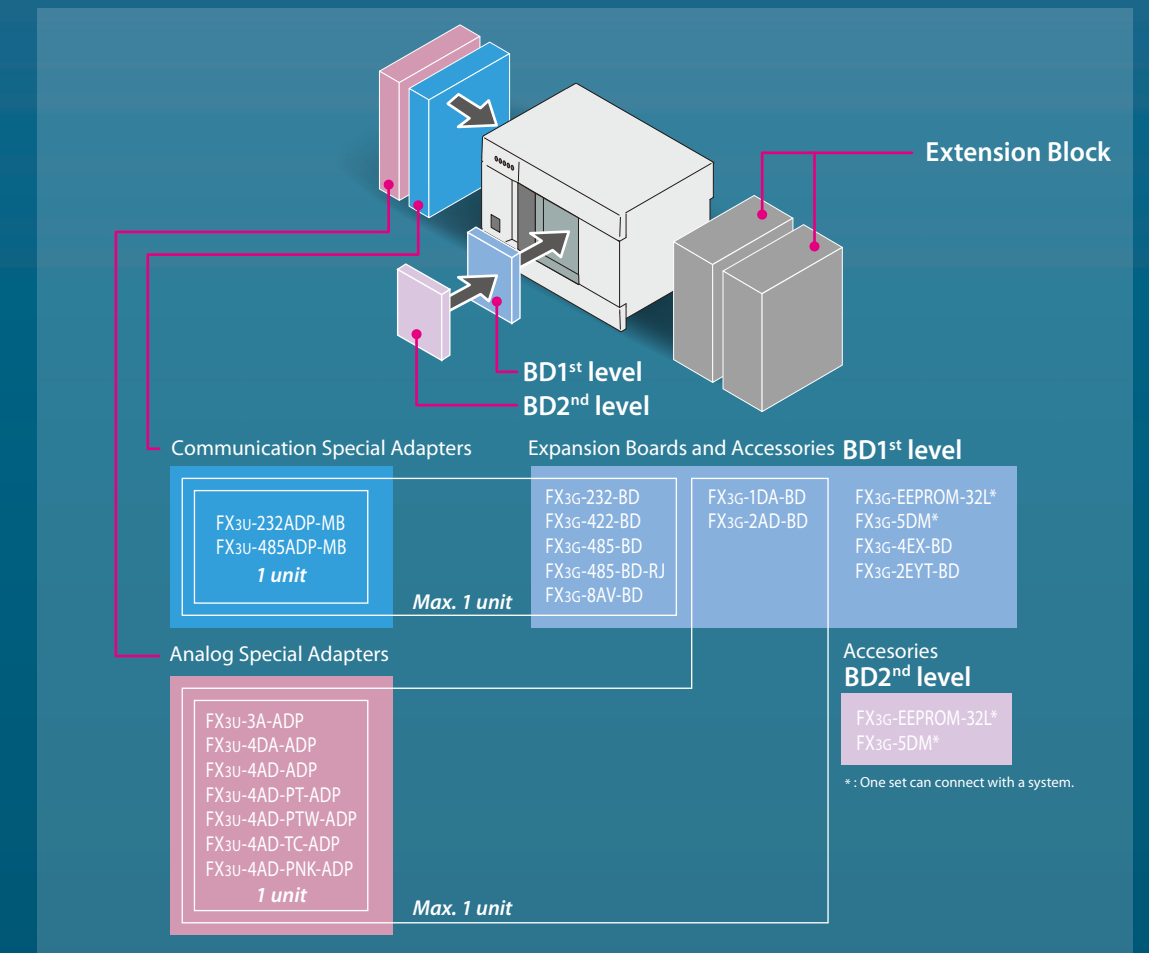
In addition to its built-in features, FX3GE also has a wealth of expansion options. Choose from the same options for FX3G/FX3U.

Expansion boards and Special adapters

- 1st level : expansion board
- 2nd level : memory cassette or display module

Communication and analog special adapters

One communication and one analog special adapter can be connected. However, special adapters and expansion boards cannot be used together.



FX3GE series Variety

- | | | | |
|--|---------------------------|--|---------------------------|
| | FX3GE-24MR/ES | | FX3GE-40MR/ES |
| | FX3GE-24MT/ES New | | FX3GE-40MT/ES New |
| | FX3GE-24MT/ESS New | | FX3GE-40MT/ESS New |
| | FX3GE-24MR/DS New | | FX3GE-40MR/DS New |
| | FX3GE-24MT/DS New | | FX3GE-40MT/DS New |
| | FX3GE-24MT/DSS New | | FX3GE-40MT/DSS New |