

Product specifications

CPU module specification

Generic Specifications

Item	Specifications				
	FX5U			FX5UC	
Operating ambient temperature*1	0 to 55°C (32 to 131°F)*2				
Storage ambient temperature	-25 to 75°C (-13 to 167°F)				
Operating ambient humidity	5 to 95%RH, non-condensation				
Storage ambient humidity	5 to 95%RH, non-condensation				
Vibration resistance*3*4		Frequency	Acceleration	Half amplitude	Sweep count
	Installed on DIN rail	5 to 8.4 Hz	—	1.75 mm	10 times each in X, Y, Z directions (80 min in each direction)
		8.4 to 150 Hz	4.9 m/s ²	—	
	Direct installing	5 to 8.4 Hz	—	3.5 mm	
8.4 to 150 Hz		9.8 m/s ²	—		
Shock resistance*5	147 m/s ² , Action time: 11 ms, 3 times by half-sine pulse in each direction X, Y, and Z				
Grounding	Class D grounding (grounding resistance: 100 Ω or less) <Common grounding with a heavy electrical system is not allowed.>*5				
Working atmosphere	Free from corrosive or flammable gas and excessive conductive dust				
Operating altitude*6	0 to 2000 m				
Installation location	Inside a control panel				
Overvoltage category*7	II or less				
Pollution degree*8	2 or less				
Equipment class	Class 2				

* 1: The simultaneous ON ratio of available PLC inputs or outputs changes with respect to the ambient temperature, refer to manuals of each product.

* 2: For details on Intelligent function modules, refer to manuals of each product.

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

* 4: When the system has equipment which specification values are lower than above mentioned vibration resistance specification values, the vibration resistance specification of the whole system is corresponding to the lower specification.

* 5: For grounding, refer to manuals of each product.

* 6: The PLC cannot be used at a pressure higher than the atmospheric pressure to avoid damage.

* 7: This indicates the section of the power supply to which the equipment is assumed to be connected between the public electrical power distribution network and the machinery within premises. Category II applies to equipment for which electrical power is supplied from fixed facilities. The surge voltage withstand level for up to the rated voltage of 300 V is 2500 V.

* 8: This index indicates the degree to which conductive material is generated in the environment in which the equipment is used. Pollution level 2 is when only non-conductive pollution occurs. Temporary conductivity caused by condensation must be expected occasionally.

Power Supply Specifications

Item	Specifications			
	FX5U-32M[]	FX5U-64M[]	FX5U-80M[]	FX5UC-32MT/[]
Rated voltage	100 to 240 V AC			24 V DC
Allowable supply voltage range	85 to 264 V AC			20.4 to 28.8 V DC
Frequency rating	50/60 Hz			—
Allowable instantaneous power failure time	Operation can be continued upon occurrence of instantaneous power failure for 10 ms or less.			Operation can be continued upon occurrence of instantaneous power failure for 5 ms or less.
Power fuse	250 V, 3.15 A Time-lag fuse	250 V, 5 A Time-lag fuse		125 V, 3.15 A Time-lag fuse
Rush current	25 A max. 5 ms or less/100 V AC 50 A max. 5 ms or less/200 V AC	30 A max. 5 ms or less/100 V AC 60 A max. 5 ms or less/200 V AC		30 A max. 0.5 ms or less/24 V DC
Power consumption*1	30 W	40 W	45 W	8 W
5 V DC power supply capacity*3	900 mA	1100 mA	1100 mA	720 mA
24 V DC power supply capacity*2*3	Supply capacity when service power supply is used for input circuit of the CPU module	400 mA	600 mA	500 mA
	Supply capacity when external power supply is used for input circuit of the CPU module	480 mA	740 mA	

* 1: This item shows value when all 24 V DC service power supplies are used in the maximum configuration connectable to the CPU module. (The current of the input circuit is included.)

* 2: When I/O modules are connected, they consume current from the 24 V DC service power. For details on the service power supply, refer to manuals of each product.

* 3: Internal power supply in case of FX3UC-32MT/[]

Performance Specifications

Item	Specifications	
	FX5U/FX5UC	
Control system	Stored-program repetitive operation	
Input/output control system	Refresh system (Direct access input/output allowed by specification of direct access input/output [DX, DY])	
Programming specifications	Programming language	Ladder diagram (LD), structured text (ST), function block diagram/ladder diagram (FBD/LD)
	Programming extension function	Function block (FB), structured ladder, label programming (local/global)
	Constant scan	0.2 to 2000 ms (can be set in 0.1 ms increments)
	Fixed cycle interrupt	1 to 60000 ms (can be set in 1 ms increments)
	Timer performance specifications	100 ms, 10 ms, 1 ms
	No. of program executions	32
Operation specifications	No. of FB files	16 (Up to 15 for user)
	Execution type	Standby type, initial execution type, scan execution type, event execution type
	Interrupt type	Internal timer interrupt, input interruption, high-speed comparison match interrupt
Command processing time	LD X0	34 ns
	MOV D0 D1	34 ns
Memory capacity	Program capacity	64 k steps (128 kbytes, flash memory)
	SD memory card	Memory card capacity (SD/SDHC memory card: Max. 4 GB)
	Device/label memory	120 kbytes
	Data memory/standard ROM	5 Mbytes
Flash memory (Flash ROM) write count	Max. 20000 times	
File storage capacity	Device/label memory	1
	Data memory	P: 32, FB: 16
	P: No. of program files/FB: No. of FB files	2 GB: 511*1 4 GB: 65534*1
Clock function	Display data	Year, month, day, hour, minute, second, day of week (leap year automatic detection)
	Precision	-2.96 to +3.74 (TYP.+1.42) s/d (Ambient temperature: 0°C (32°F)) -3.18 to +3.74 (TYP.+1.50) s/d (Ambient temperature: 25°C (77°F)) -13.20 to +2.12 (TYP.-3.54) s/d (Ambient temperature: 55°C (131°F))
No. of input/output points	(1) No. of input/output points	256 points or less
	(2) No. of remote I/O points	384 points or less
	Total No. of points of (1) and (2)	512 points or less
Power failure retention*2	Retention method	Large-capacity capacitor
	Retention time	10 days (Ambient temperature: 25°C (77°F))
	Data retained	Clock data

* 1: The value listed above indicates the number of files stored in the root folder.

* 2: Clock data is retained using the power accumulated in a large-capacity capacitor incorporated into the PLC. When voltage of the large-capacity capacitor drops, clock data is no longer accurately retained. The retention period of a fully charged capacitor (electricity is conducted across the PLC for at least 30 minutes) is 10 days (ambient temperature: 25°C (77°F)). How long the capacitor can hold the data depends on the operating ambient temperature. When the operating ambient temperature is high, the holding period is short.

Refer to the manual for details on each device.

□ Number of device points

Item		Base	Max. number of points		
No. of user device points	Input relay (X)	8	1024 points	The total number of X and Y assigned to input/output points is up to 256 points.	
	Output relay (Y)	8	1024 points		
	Internal relay (M)	10	32768 points (can be changed with parameter)*1		
	Latch relay (L)	10	32768 points (can be changed with parameter)*1		
	Link relay (B)	16	32768 points (can be changed with parameter)*1		
	Annunciator (F)	10	32768 points (can be changed with parameter)*1		
	Link special relay (SB)	16	32768 points (can be changed with parameter)*1		
	Step relay (S)	10	4096 points (fixed)		
	Timer system	Timer (T)	10		1024 points (can be changed with parameter)*1
	Accumulation timer system	Accumulation timer (ST)	10		1024 points (can be changed with parameter)*1
	Counter system	Counter (C)	10		1024 points (can be changed with parameter)*1
		Long counter (LC)	10		1024 points (can be changed with parameter)*1
	Data register (D)	10	8000 points (can be changed with parameter)*1		
	Link register (W)	16	32768 points (can be changed with parameter)*1		
Link special register (SW)	16	32768 points (can be changed with parameter)*1			
No. of system device points	Special relay (SM)	10	10000 points (fixed)		
	Special register (SD)	10	12000 points (fixed)		
Module access device	Intelligent function module device	10	65536 points (designated by U[I]G[I])		
No. of index register points	Index register (Z)*2	10	24 points		
	Long index register (LZ)*2	10	12 points		
No. of file register points	File register (R)	10	32768 points (can be changed with parameter)*1		
No. of nesting points	Nesting (N)	10	15 points (fixed)		
No. of pointer points	Pointer (P)	10	4096 points		
	Interrupt pointer (I)	10	178 points (fixed)		
Others	Decimal constant (K)	Signed	16 bits: -32768 to +32767, 32 bits: -2147483648 to +2147483647		
		Unsigned	16 bits: 0 to 65535, 32 bits: 0 to 4294967295		
	Hexadecimal constant (H)	16 bits: 0 to FFFF, 32 bits: 0 to FFFFFFFF			
	Real constant (E)	Single precision	E-3.40282347+38 to E-1.17549435-38, 0, E1.17549435-38 to E3.40282347+38		
	Character string		Shift-JIS code max. 255 single-byte characters (256 including NULL)		

* 1 : Can be changed with parameters within the capacity range of the CPU built-in memory.

* 2 : Total of the index register (Z) and long index register (LZ) is maximum 24 words.

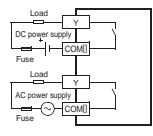
□ Input Specifications

24 V DC Input (sink/source)

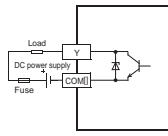
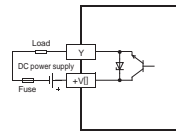
Item	Specifications				
	FX5U-32M[]	FX5U-64M[]	FX5U-80M[]	FX5UC-32MT/D	FX5UC-32MT/DSS
No. of input points	16 points	32 points	40 points	16 points	
Connection type	Removable terminal block (M3 screws)			Connector	
Input type	Sink/source			Sink	Sink/source
Input signal voltage	24 V DC ±20 %, -15%				
Input signal current	X000 to X017	5.3 mA/24 V DC			5.3 mA/24 V DC
	X020 and subsequent	4.0 mA/24 V DC			—
Input impedance	X000 to X017	4.3 kΩ			4.3 kΩ
	X020 and subsequent	5.6 kΩ			—
ON input sensitivity current	X000 to X017	3.5 mA or more			3.5 mA or more
	X020 and subsequent	3.0 mA or more			—
OFF input sensitivity current	1.5 mA or less				
Input response frequency	X000 to X005	200 kHz			200 kHz
	X006 to X007	10 kHz			10 kHz
	X010 to X017	—			10 kHz
Pulse waveform	Waveform				
	X000 to X005	T1: 2.5 μs or more, T2: 1.25 μs or less		T1: 2.5 μs or more, T2: 1.25 μs or less	
	X006 to X007	T1: 50 μs or more, T2: 25 μs or less		T1: 50 μs or more, T2: 25 μs or less	
	X010 to X017	—		—	
Input response time (H/W filter delay)	X000 to X005	ON: 2.5 μs or less, OFF: 2.5 μs or less		ON: 2.5 μs or less, OFF: 2.5 μs or less	
	X006 to X007	ON: 30 μs or less, OFF: 50 μs or less		ON: 30 μs or less, OFF: 50 μs or less	
	X010 to X017	—		—	
Input response time (Digital filter setting value)	None, 10 μs, 50 μs, 0.1 ms, 0.2 ms, 0.4 ms, 0.6 ms, 1 ms, 5 ms, 10 ms (initial values), 20 ms, 70 ms When using this product in an environment with much noise, set the digital filter.				
Input signal format	No-voltage contact input Sink: NPN open collector transistor Source: PNP open collector transistor			No-voltage contact input NPN open collector transistor	No-voltage contact input Sink: NPN open collector transistor Source: PNP open collector transistor
Input circuit insulation	Photo-coupler insulation				
Indication of input operation	LED is lit when input is on			LED is lit when input is on (DISP switch: IN)	
Input circuit configuration	When using service power supply		Sink input wiring		Sink input wiring
	When using external power supply		Sink input wiring		Sink input wiring
		Source input wiring		Source input wiring	

Output Specifications

Relay output

Item	Specifications		
	FX5U-32MR/[]	FX5U-64MR/[]	FX5U-80MR/[]
No. of output points	16 points	32 points	40 points
Connection type	Removable terminal block (M3 screws)		
Output type	Relay		
External power supply	30 V DC or less 240 V AC or less ("250 V AC or less" if not a CE, UL, cUL compliant item)		
Max. load	2 A/point The total load current per common terminal should be the following value. • 4 output points/common terminal: 8 A or less • 8 output points/common terminal: 8 A or less		
Min. load	5 V DC, 2 mA (reference values)		
Open circuit leakage current	—		
Response time	OFF→ON	Approx. 10 ms	
	ON→OFF	Approx. 10 ms	
Insulation of circuit	Mechanical insulation		
Indication of output operation	LED is lit when output is on		
Output circuit configuration	 <p>A number is entered in the [] of [COM[]].</p>		

Transistor output

Item	Specifications				
	FX5U-32MT/[]	FX5U-64MT/[]	FX5U-80MT/[]	FX5UC-32MT/D	FX5UC-32MT/DSS
No. of output points	16 points	32 points	40 points	16 points	
Connection type	Removable terminal block (M3 screws)			Connector	
Output type	Transistor/sink output (FX5U-[]MT/ES) Transistor/source output (FX5U-[]MT/ESS)			Transistor/sink output	Transistor/source output
External power supply	5 to 30 V DC				
Max. load	0.5 A/point The total load current per common terminal should be the following value. • 4 output points/common terminal: 0.8 A or less • 8 output points/common terminal: 1.6 A or less			Y000 to Y003: 0.3 A/point Y004 and subsequent: 0.1 A/point The total load current per common terminal should be the following value. • 8 output points/common terminal: 0.8 A or less*	
Open circuit leakage current	0.1 mA or less/30 V DC				
Voltage drop when ON	Y000 to Y003	1.0 V or less			
	Y004 and subsequent	1.5 V or less			
Response time	Y000 to Y003	2.5 μs or less/10 mA or more (5 to 24 V DC)			
	Y004 and subsequent	0.2 ms or less/200 mA or more (24 V DC)			0.2 ms or less/100 mA (24 V DC)
Insulation of circuit	Photo-coupler insulation				
Indication of output operation	LED is lit when output is on				
Output circuit configuration	<p>Sink output wiring</p>  <p>Source output wiring</p>  <p>A number is entered in the [] of [COM []]. A number is entered in the [] of [+V []].</p>				

* : When 2 common terminals are connected outside the CPU module, resistance load is 1.6 A or less.

Built-in Analog input

Item	Specifications	
	FX5U	
Analog input points	2 points (2 channels)	
Analog input	Voltage	0 to 10 V DC (input resistance 115.7 kΩ)
Digital output	Unsigned 12-bit binary	
I/O characteristics, Maximum resolution	Digital output value	0 to 4000
	Maximum resolution	2.5 mV
Accuracy (Accuracy in respect to maximum digital output value)	Ambient temperature 25 ±5°C (77±41°F)	Within ±0.5% (±20 digit*)
	Ambient temperature 0 to 55°C (32±131°F)	Within ±0.1% (±40 digit*)
Conversion speed	30 μs/channels (data refreshed every operation cycle)	
Absolute maximum input	-0.5 V, +15 V	
Isolation	No isolation between analog input circuit and PLC circuit. No isolation between input terminals (channels).	
Occupied points	0 points (does not pertain to the max. No. of input/output points of the PLC.)	
Terminal block used	European-type terminal block	

* : "Digit" refers to digital values.

Built-in Analog output

Item	Specifications	
	FX5U	
Analog output points	1 points (1 channels)	
Digital input	Unsigned 12-bit binary	
Analog output	Voltage	0 to 10 V DC (external load resistance 2 k to 1 MΩ)
I/O characteristics, Maximum resolution	Digital input value	0 to 4000
	Maximum resolution	2.5 mV
Accuracy (Accuracy in respect to maximum analog output value)	Ambient temperature 25 ±5°C (77±41°F)	Within ±0.5% (±20 digit*)
	Ambient temperature 0 to 55°C (32±131°F)	Within ±0.1% (±40 digit*)
Conversion speed	30 μs (data refreshed every operation cycle)	
Isolation	No isolation between analog output circuit and PLC circuit.	
Occupied points	0 points (does not pertain to the max. No. of input/output points of the PLC.)	
Terminal block used	European-type terminal block	

* : "Digit" refers to digital values.

Built-in RS-485 communication

Item	Specifications	
	FX5U/FX5UC	
Transmission standards	Conforms to RS-485/RS-422 specifications	
Data transmission speed	Max. 115.2 kbps	
Communication method	Full-duplex (FDX) / Half-duplex (HDX)	
Maximum total extension distance	50 m (164' 0")	
Protocol type	MELSOFT connection	
	MELSEC Communication protocol (3C/4C frames)	
	Non-protocol communication	
	MODBUS RTU	
	Inverter communication	
	N:N network	
Insulation method	Not insulated	
Terminal resistors	Built-in (OPEN/110 Ω/330 Ω)	
Terminal block used	European-type terminal block	

Built-in Ethernet communication

Item	Specifications	
	FX5U/FX5UC	
Data transmission speed	100/10 Mbps	
Communication mode	Full-duplex (FDX) / Half-duplex (HDX)	
Interface	RJ45 connector	
Transmission method	Base band	
Maximum segment length (The distance between hub and node)	100 m (328' 1")	
Cascade connection	100BASE-TX	Cascade connection max. 2 stages*1
	10BASE-T	Cascade connection max. 4 stages*1
Protocol type	MELSOFT connection	
	SLMP (3E frame)	
	Socket communication	
	Predefined protocol support	
Number of simultaneously open connections allowed	Total of 8 for socket communication, MELSOFT connection, SLMP, and Predefined protocol support (Up to 8 external devices can access one CPU module at the same time.)	
Insulation method	Pulse transformer insulation	
Cable used*2	For 100BASE-TX connection	Ethernet standard-compatible cable, category 5 or higher (STP cable)
	For 10BASE-T connection	Ethernet standard-compatible cable, category 3 or higher (STP cable)

* 1: Number of stages that can be connected when a repeater hub is used. When a switching hub is used, check the specifications of the switching hub used.
 * 2: A straight cable can be used. If a personal computer or GOT and CPU module are directly connected a cross cable can be used.

Built-in positioning function

Item	Specifications	
	FX5U/FX5UC	
Number of control axes	Independent 4 axes* (Simple linear interpolation by 2-axis simultaneous start)	
Maximum frequency	2147483647 (200 Kpps in pulses)	
Positioning program	Sequence program, Table operation	
Supported CPU units	Transistor output type	
Pulse output	1 instruction (PLSY)	
Positioning	8 instructions (DSZR, DVIT, TBL, PLSV, DRVI, DRVA, DRV TBL, DRVMUL) pulse output	

*: The number of control axes is 2 when the pulse output mode is CW/CCW mode.

Built-in high speed counter function

Item	Specifications	
	FX5U/FX5UC	
Types of high-speed counters	Input specifications	Maximum frequency
	1 phase, 1 input counter (S/W)	200 KHz
	1 phase, 1 input counter (H/W)	200 KHz
	1 phase, 2 input counter	200 KHz
	2 phase, 2 input counter [1 edge count]	200 KHz
	2 phase, 2 input counter [2 edge count]	100 KHz
	2 phase, 2 input counter [4 edge count]	50 KHz
Input allocation	Parameter setup*	
High-speed counter instruction	[High-speed processing instruction] • Setting 32-bit data comparison • Reset 32-bit data comparison • Comparison of 32-bit data band • Start/stop of the 16-bit data high-speed I/O function • Start/stop of the 32-bit data high-speed I/O function [High-speed current value transfer instruction] • High-speed current value transfer of 16-bit data • High-speed current value transfer of 32-bit data	

*: Refer to manuals of each product.

Refer to the manual for details on each device.

Expansion Device Specifications

I/O Modules

Powered input/output modules

Model	Total No. of points	No. of input/output points & Input/output type			Connection type
		Input		Output	
FX5-32ER/ES	32 points	16 points	24 V DC (Sink/source)	16 points	Terminal block
FX5-32ET/ES				Relay	
FX5-32ET/ESS				Transistor (sink) Transistor (source)	

Input modules

Model	Total No. of points	No. of input/output points & Input/output type			Connection type
		Input		Output	
FX5-8EX/ES	8 points	8 points	24 V DC (Sink/source)	—	Terminal block
FX5-16EX/ES	16 points	16 points	—	—	
FX5-C32EX/D	32 points	32 points	24 V DC (sink)	—	Connector
FX5-C32EX/DS			24 V DC (Sink/source)	—	

Output modules

Model	Total No. of points	No. of input/output points & Input/output type			Connection type
		Input		Output	
FX5-8EYR/ES	8 points	—	—	8 points	Terminal block
FX5-8EYT/ES				Relay	
FX5-8EYT/ESS				Transistor (sink) Transistor (source)	
FX5-16EYR/ES	16 points	—	—	16 points	Terminal block
FX5-16EYT/ES				Relay	
FX5-16EYT/ESS				Transistor (sink) Transistor (source)	
FX5-C32EYT/D	32 points	—	—	32 points	Connector
FX5-C32EYT/DSS				Transistor (sink) Transistor (source)	

Input/output modules

Model	Total No. of points	No. of input/output points & Input/output type			Connection type
		Input		Output	
FX5-C32ET/D	32 points	16 points	24 V DC (sink)	16 points	Connector
FX5-C32ET/DSS			24 V DC (source)	Transistor (sink) Transistor (source)	

Expansion adapters

FX5-232ADP

Item	Specifications
Transmission standard/ Maximum transmission distance/ Insulation	Conforming to RS-232C/15 m (49' 2")/Photo-coupler isolation (Between communication line and CPU module)
Connection method	9-pin D-sub, male
Communication method	Half-duplex/Full-duplex
Baud rate	300/600/1200/2400/4800/9600/19200/38400/57600/115200 (bps)
Number of occupied I/O points	0 point (no points occupied)
Applicable CPU module	FX5U, FX5UC PLC
Control power (supplied from CPU module)	5 V DC, 30 mA / 24 V DC, 30 mA

FX5-485ADP

Item	Specifications
Transmission standard/ Maximum transmission distance/ Insulation	Conforming to RS-485, RS-422/1200 m (3937' 0")/Photo-coupler isolation (Between communication line and CPU module)
Connection method	European terminal block
Communication method	Half-duplex/Full-duplex
Baud rate	300/600/1200/2400/4800/9600/19200/38400/57600/115200 (bps)
Terminal resistor	Built-in (OPEN/110 Ω/330 Ω)
Number of occupied I/O points	0 point (no points occupied)
Applicable CPU module	FX5U, FX5UC PLC
Control power (supplied from CPU module)	5 V DC, 20 mA / 24 V DC, 30 mA

FX5-4AD-ADP

Item	Specifications			
Number of analog input points	4 points (4 channels)			
Analog input voltage	-10 to +10 V DC (input resistance 1 MΩ)			
Analog input current	-20 to +20 mA DC (input resistance 250 Ω)			
Digital output value	14-bit binary value			
Input characteristics, resolution*	Analog input range	Digital output value	Resolution	
	Voltage	0 to 10 V	0 to 16000	625 μV
		0 to 5 V	0 to 16000	312.5 μV
		1 to 5 V	0 to 12800	312.5 μV
	Current	-10 to +10V	-8000 to +8000	1250 μV
		0 to 20 mA	0 to 16000	1.25 μA
4 to 20 mA		0 to 12800	1.25 μA	
Accuracy (accuracy for the full scale digital output value)	Ambient temperature 25±5°C: within ±0.1% (±16 digit) Ambient temperature 0 to 55°C: within ±1.0% (±32 digit)			
Absolute maximum input	Voltage: ±15 V, Current: ±30 mA			
Isolation method	Between input terminal and PLC: Photocoupler Between input channels: Non-isolation			
Number of occupied I/O points	0 point (no points occupied)			
Applicable CPU module	FX5U,FX5UC PLC			

*: For the input conversion characteristic, refer to manuals of each product.

FX5-4DA-ADP

Item	Specifications			
Number of analog output points	4 points (4 channels)			
Analog output voltage	-10 to +10 V DC (external load resistance value 1 k to 1 MΩ)			
Analog output current	0 to 20 mA DC (external load resistance value 0 to 500 Ω)			
Digital input	14-bit binary value			
Output characteristics, resolution*	Analog output range	Digital value	Resolution	
	Voltage	0 to 10 V	0 to 16000	625 μV
		0 to 5 V	0 to 16000	312.5 μV
		1 to 5 V	0 to 16000	250 μV
	Current	-10 to +10V	-8000 to +8000	1250 μV
		0 to 20 mA	0 to 16000	1.25 μA
4 to 20 mA		0 to 16000	1 μA	
Accuracy (accuracy for the full scale of the analog output value)	Ambient temperature 25±5°C: ±0.1% (Voltage ±20 mV, Current ±40 μA) Ambient temperature 0 to 55°C: ±0.2% (Voltage ±30 mV, Current ±60 μA)			
Isolation method	Between output terminal and PLC: Photocoupler Between output channels: Non-isolation			
Number of occupied I/O points	0 point (no points occupied)			
Applicable CPU module	FX5U, FX5UC PLC			

*: For the output conversion characteristic, refer to manuals of each product.

Expansion boards

Item	Specifications		
	FX5-232-BD	FX5-485-BD	FX5-422-BD-GOT
Transmission standard	Conforming to RS-232C	Conforming to RS-485, RS-422	Conforming to RS-422
Maximum transmission distance	15 m (49' 2")	50 m (164' 0")	According to the specification of the GOT
Connection method	9-pin D-sub, male	European terminal block	8-pin MINI-DIN, female
Insulation	Not insulated (Between communication line and CPU module)		
Communication method	Half-duplex/Full-duplex	Half-duplex/Full-duplex*	Half-duplex
Baud rate	300/600/1200/2400/4800/9600/19200/38400/57600/115200 (bps)*	300/600/1200/2400/4800/9600/19200/38400/57600/115200 (bps)*	9600/19200/38400/57600/115200 (bps)
Terminal resistor	—	Built-in (OPEN/110 Ω/330 Ω)	—

*: The communication method and baud rate vary depending on the type of communication.

Extension power supply module

FX5-1PSU-5V

Item	Specifications	
Rated Supply voltage	100 to 240 V AC	
All owable supply voltage range	85 to 264 V AC	
Rated frequency	50/60 Hz	
Accuracy (accuracy for the full scale digital output value)	Operation can be continued upon occurrence of instantaneous power failure for 10 ms or less.	
Power fuse	250 V 3.15 A Time-lag Fuse	
In-rush current	25 A Max. 5 ms or less/ 100 V AC 50 A Max. 5 ms or less/ 200 V AC	
Power consumption	20 W Max.	
Output current*	24 V DC	0.3 A (Maximum output current depends on the ambient temperature.)
	5 V DC	1.2 A (Maximum output current depends on the ambient temperature.)

*: For the current conversion characteristic, refer to manuals of each product.

Bus conversion modules

FX5-CNV-BUS (FX5 (terminal block) → FX3 (terminal block) extension)

Item	Specifications
Number of occupied I/O points	8 point
Applicable CPU module	FX5U, FX5UC PLC
Control power (supplied from CPU module)	5 V DC, 150 mA

FX5-CNV-BUSC (FX5 (connector) → FX3 (terminal block) extension)

Item	Specifications
Number of occupied I/O points	8 point
Applicable CPU module	FX5UC PLC
Control power (supplied from CPU module)	5 V DC, 150 mA

Connector conversion module

FX5-CNV-IFC (FX5 (connector) → FX5 (terminal block) extension)

Item	Specifications
Number of occupied I/O points	0 point (does not occupy any I/O points)
Applicable CPU module	FX5U, FX5UC PLC
Control power (supplied from CPU module)	0 mA (no power consumed)

Simple Motion module specification

FX5-40SSC-S

□ Control specification

Item		Specifications
Number of control axes		Up to 4 axes
Operation cycle		1.777 ms
Interpolation function		Linear interpolation (Up to 4 axes), Circular interpolation (2 axes)
Control modes		PTP (Point To Point) control, Trajectory control (both linear and arc), Speed control, Speed-position switching control, Position-speed switching control, Speed-torque control
Acceleration/deceleration process		Trapezoidal acceleration/deceleration, S-curve acceleration/deceleration
Compensation function		Backlash compensation, Electronic gear, Near pass function
Synchronous control	Input axis	Servo input axis, Synchronous encoder axis
	Output axis	Cam axis (Up to 4 axes)
Cam control	Number of registration	Up to 64 (depending on memory capacity, cam resolution and number of coordinates)
	Cam data type	Stroke ratio data type, Coordinate data type
	Cam auto-generation	Cam auto-generation for rotary cutter
Control unit		mm, inch, degree, pulse
Number of positioning data		600 data (positioning data No. 1 to 600)/axis (Can be set with MELSOFT GX Works3 or a sequence program.)
Backup		Parameters, positioning data, and block start data can be saved on flash ROM (battery-less backup)
Home position return	Home position return method	Proximity dog method, Count method 1, Count method 2, Data set method, Scale home position signal detection method
	Fast home position return control	Provided
	Sub functions	Home position return retry, Home position shift
Positioning control	Linear control	1-axis linear control, 2-axis linear interpolation control, 3-axis linear interpolation control, 4-axis linear interpolation control*1 (Composite speed, Reference axis speed)
	Fixed-pitch feed control	1-axis fixed-pitch feed, 2-axis fixed-pitch feed, 3-axis fixed-pitch feed, 4-axis fixed-pitch feed*1
	2-axis circular interpolation	Sub point designation, center point designation
	Speed control	1-axis speed control, 2-axis speed control*1, 3-axis speed control*1, 4-axis speed control*1
	Speed-position switching control	INC mode, ABS mode
	Position-speed switching control	INC mode
	Current value change	Positioning data, Start No. for a current value changing
	NOP instruction	Provided
	JUMP instruction	Unconditional JUMP, Conditional JUMP
	LOOP, LEND	Provided
Manual control	High-level positioning control	Block start, Condition start, Wait start, Simultaneous start, Repeated start
	JOG operation	Provided
	Inching operation	Provided
Expansion control	Manual pulse generator	Possible to connect 1 module (Incremental), Unit magnification (1 to 10000 times)
	Speed-torque control	Speed control without positioning loops, Torque control, Tightening & press-fit control
Absolute position system		Made compatible by setting a battery to servo amplifier
Synchronous encoder interface		Up to 4 channels (Total of the internal interface, via PLC CPU interface, and servo amplifier interface)
Functions that limit control	Internal interface	1 channel (Incremental)
	Speed limit function	Speed limit value, JOG speed limit value
	Torque limit function	Torque limit value, same setting, torque limit value, individual setting
	Forced stop	Valid/Invalid setting
	Software stroke limit function	Movable range check with current feed value, movable range check with machine feed value
Functions that change control details	Hardware stroke limit function	Provided
	Speed change function	Provided
	Override function	1 to 300 [%]
	Acceleration/deceleration time change function	Provided
Other functions	Torque change function	Provided
	Target position change function	Target position address and speed are changeable
	M-code output function	Provided
	Step function	Deceleration unit step, Data No. unit step
Parameter initialization function		Provided
External input signal setting function		Via internal interface, CPU, servo amplifier
Amplifier-less operation function		Provided
Mark detection function		Regular mode, Specified Number of Detections mode, Ring Buffer mode
Mark detection signal	Mark detection signal	Up to 4 points
	Mark detection setting	16 settings
Optional data monitor function		4 points/axis
Driver communication function		Provided
SSCNET connect/disconnect function		Provided
Digital oscilloscope function*2	Bit data	16 ch
	Word data	16 ch

*1: Only reference axis speed can be specified as the interpolation speed designation method.
*2: 8 ch word data and 8 ch bit data can be displayed in real time.

□ Module specification

Item		Specifications	
Servo amplifier connection method		SSCNET III/H	
Maximum overall cable distance [m(ft.)]		400 (1312.32)	
Maximum distance between stations [m(ft.)]		100 (328.08)	
Peripheral I/F		Via CPU module (Ethernet)	
Manual pulse generator operation function		Possible to connect 1 module	
Synchronous encoder operation function		Possible to connect 4 modules (Total of the internal interface, via PLC CPU interface, and servo amplifier interface)	
Input signals (DI)	Number of input points	4 points	
	Input method	Positive common/Negative common shared (Photocoupler isolation)	
	Rated input voltage/current	24 V DC/ Approx. 5 mA	
	Operating voltage range	19.2 to 26.4 V DC (24 V DC +10%/-20%, ripple ratio 5% or less)	
	ON voltage/current	17.5 V DC or more/ 3.5 mA or more	
	OFF voltage/current	7 V DC or less/ 1.0 mA or less	
	Input resistance	Approx. 6.8 kΩ	
	Response time	1 ms or less (OFF→ON, ON→OFF)	
	Recommended wire size	AWG24 - 30 (0.2 - 0.05 mm ²) * AWG24 (0.2 mm ²) recommended	
	Forced stop input signal (EMI)	Number of input points	1 point
Input method		Positive common/Negative common shared (Photocoupler isolation)	
Rated input voltage/current		24 V DC/ Approx. 5 mA	
Operating voltage range		19.2 to 26.4 V DC (24 V DC +10%/-20%, ripple ratio 5% or less)	
ON voltage/current		17.5 V DC or more/ 3.5 mA or more	
OFF voltage/current		7 V DC or less/ 1.0 mA or less	
Input resistance		Approx. 6.8 kΩ	
Response time	4 ms or less (OFF→ON, ON→OFF)		
Recommended wire size	AWG24 - 30 (0.2 - 0.05 mm ²) * AWG24 (0.2 mm ²) recommended		
Signal input form		Phase A/Phase B (magnification by 4/magnification by 2/magnification by 1), PULSE/SIGN	
Manual pulse generator/ Incremental synchronous encoder signal	Differential output type (26LS31 or equivalent)	Input pulse frequency	Up to 1 Mpulse/s (After magnification by 4, up to 4 Mpulse/s)
		Pulse width	1 μs or more
		Leading edge/trailing edge time	0.25 μs or less
		Phase difference	0.25 μs or more
		Rated input voltage	5.5 V DC or less
		High voltage	2.0 to 5.25 V DC
		Low voltage	0 to 0.8 V DC
	Differential voltage	±0.2 V	
	Cable length	Up to 30 m (98.43 ft.)	
	Voltage output Open-collector type (5 V DC)	Input pulse frequency	Up to 200 kpulse/s (After magnification by 4, up to 800 kpulse/s)
		Pulse width	5 μs or more
		Leading edge/trailing edge time	1.2 μs or less
		Phase difference	1.2 μs or more
		Rated input voltage	5.5 V DC or less
High voltage		3.0 to 5.25 V DC	
Low voltage		0 to 1.0 V DC	
Cable length	Up to 10m (32.81 ft.)		
Number of occupied I/O points		8 points	
24 V DC internal current consumption		0.25 A	

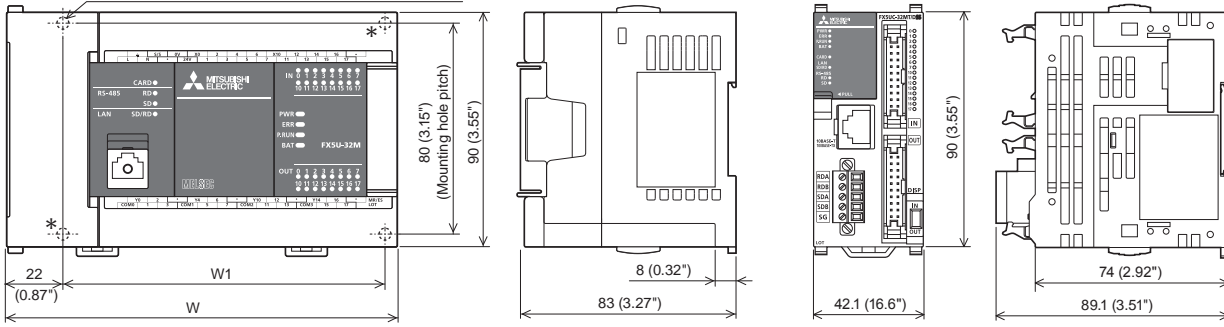
Refer to the manual for details on each device.

External Dimensions

Unit: mm (inches)

CPU Modules

2-φ4.5-diam mounting holes (FX5U-32M)
 4-φ4.5-diam mounting holes (FX5U-64M, FX5U-80M)
 FX5U-32M does not have the (*)-marked mounting holes.

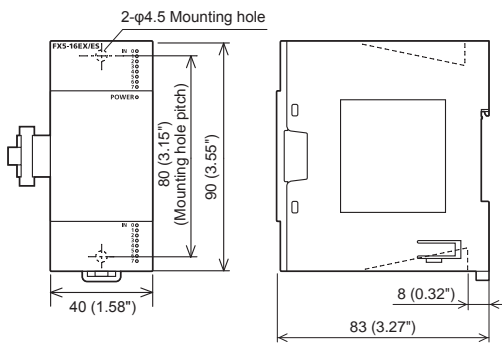


Model name	W: mm (inches)	W1: mm (inches) Mounting hole pitches	MASS (Weight): kg (lbs)
FX5U-32M[]	150 (5.91")	123 (4.85")	Approx. 0.65 (1.43")
FX5U-64M[]	220 (8.67")	193 (7.60")	Approx. 1.0 (2.20")
FX5U-80M[]	285 (11.23")	258 (10.16")	Approx. 1.2 (2.64")

Model name	MASS (Weight): kg (lbs)
FX5UC-32M[]	Approx. 0.2 (0.44")

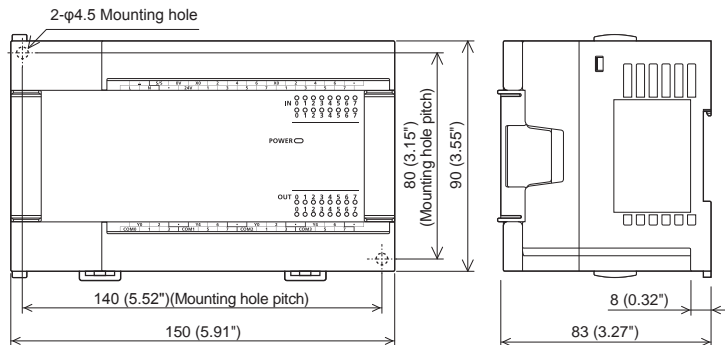
I/O Modules

FX5 input module/output module (terminal block type)



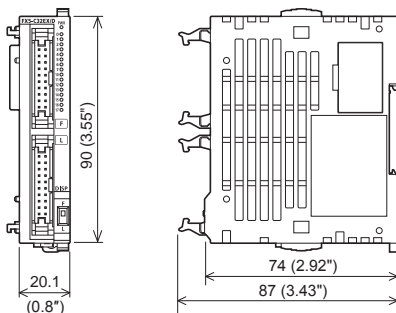
Model name	MASS (Weight): kg (lbs)
FX5-8EX/ES, FX5-8EYR/ES, FX5-8EYT/ES, FX5-8EYT/ESS	Approx. 0.2 (0.44")
FX5-16EX/ES, FX5-16EYR/ES, FX5-16EYT/ES, FX5-16EYT/ESS	Approx. 0.25 (0.55")

FX5 Powered I/O Modules



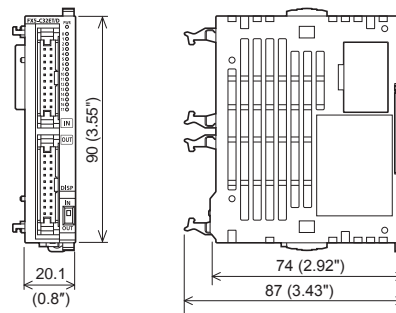
Model name	MASS (Weight): kg (lbs)
FX5-32ER/ES, FX5-32ET/ES, FX5-32ET/ESS	Approx. 0.65 (1.43")

FX5 input module/output module (connector type)



Model name	MASS (Weight): kg (lbs)
FX5-C32EX/D, FX5-C32EX/DS FX5-C32EYT/D, FX5-C32EYT/DSS	Approx. 0.15 (0.33")

FX5 I/O module (connector type)

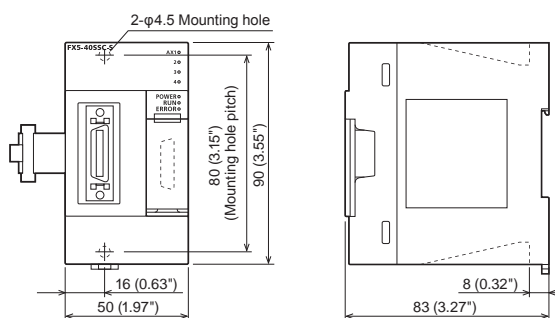


Model name	MASS (Weight): kg (lbs)
FX5-C32ET/D, FX5-C32ET/DSS	Approx. 0.15 (0.33")

Intelligent Function Module

FX5-40SSC-S

MASS (Weight): Approx. 0.3 kg (0.66 lbs)

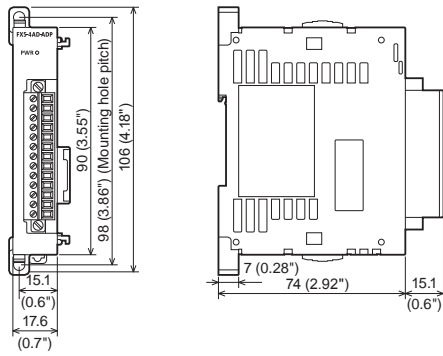


Unit: mm (inches)

Expansion adapters

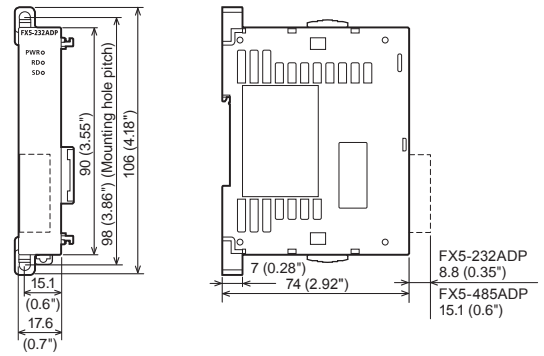
FX5-4AD-ADP / FX5-4DA-ADP

MASS (Weight): Approx. 0.1 kg (0.22 lbs)



FX5-232ADP / FX5-485ADP

MASS (Weight): Approx. 0.08 kg (0.18 lbs)

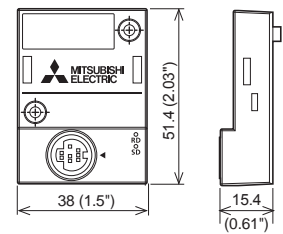
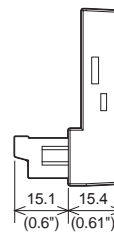
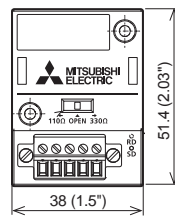
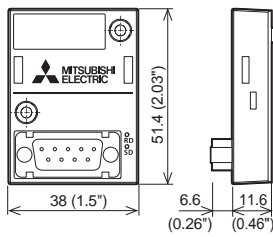


Expansion boards

FX5-232-BD MASS (Weight): Approx. 0.02 kg (0.05 lbs)

FX5-485-BD MASS (Weight): Approx. 0.02 kg (0.05 lbs)

FX5-422-BD-GOT MASS (Weight): Approx. 0.02 kg (0.05 lbs)



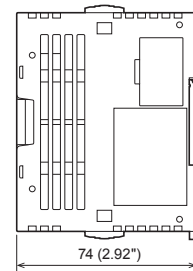
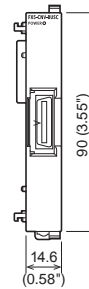
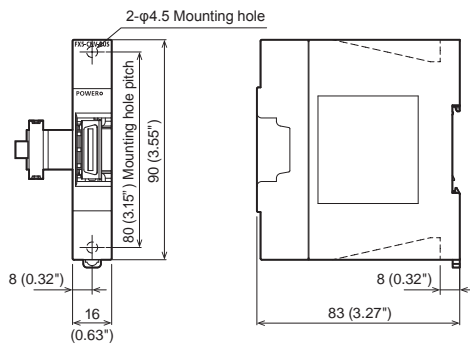
Bus conversion modules

FX5-CNV-BUS

MASS (Weight): Approx. 0.1 kg (0.22 lbs)

FX5-CNV-BUSC

MASS (Weight): Approx. 0.1 kg (0.22 lbs)



Connector conversion module

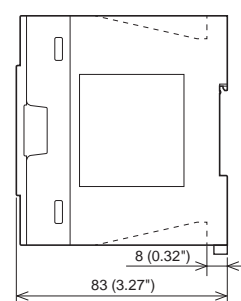
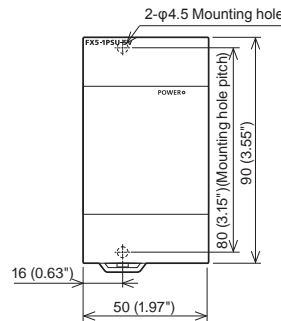
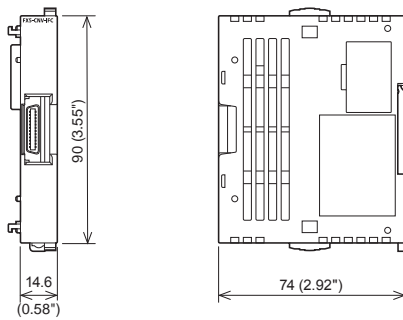
FX5-CNV-IFC

MASS (Weight): Approx. 0.06 kg (0.14 lbs)

Extension power supply module

FX5-1PSU-5V

MASS (Weight): Approx. 0.3 kg (0.66 lbs)



Standards

List of Compatible Products

Model Name	CE		UL	KC	Ship approvals							
	EMC	LVD			cUL	ABS	DNV	LR	GL	BV	RINA	NK
◆ FX5U CPU modules												
FX5U-32MR/ES	○	○	○	○	—	—	—	—	—	—	—	—
FX5U-32MT/ES	○	○	○	○	—	—	—	—	—	—	—	—
FX5U-32MT/ESS	○	○	○	○	—	—	—	—	—	—	—	—
FX5U-64MR/ES	○	○	○	○	—	—	—	—	—	—	—	—
FX5U-64MT/ES	○	○	○	○	—	—	—	—	—	—	—	—
FX5U-64MT/ESS	○	○	○	○	—	—	—	—	—	—	—	—
FX5U-80MR/ES	○	○	○	○	—	—	—	—	—	—	—	—
FX5U-80MT/ES	○	○	○	○	—	—	—	—	—	—	—	—
FX5U-80MT/ESS	○	○	○	○	—	—	—	—	—	—	—	—
◆ FX5UC CPU modules												
FX5UC-32MT/D	○	□	○	○	—	—	—	—	—	—	—	—
FX5UC-32MT/DSS	○	□	○	○	—	—	—	—	—	—	—	—
◆ FX5 I/O modules (terminal block type)												
FX5-8EX/ES	○	□	○	○	—	—	—	—	—	—	—	—
FX5-16EX/ES	○	□	○	○	—	—	—	—	—	—	—	—
FX5-8EYR/ES	○	○	○	○	—	—	—	—	—	—	—	—
FX5-8EYT/ES	○	□	○	○	—	—	—	—	—	—	—	—
FX5-8EYT/ESS	○	□	○	○	—	—	—	—	—	—	—	—
FX5-16EYR/ES	○	○	○	○	—	—	—	—	—	—	—	—
FX5-16EYT/ES	○	□	○	○	—	—	—	—	—	—	—	—
FX5-16EYT/ESS	○	□	○	○	—	—	—	—	—	—	—	—
FX5-32ER/ES	○	○	○	○	—	—	—	—	—	—	—	—
FX5-32ET/ES	○	○	○	○	—	—	—	—	—	—	—	—
FX5-32ET/ESS	○	○	○	○	—	—	—	—	—	—	—	—
◆ FX5 I/O modules (connector type)												
FX5-C32EX/D	○	□	○	○	—	—	—	—	—	—	—	—
FX5-C32EX/DS	○	□	○	○	—	—	—	—	—	—	—	—
FX5-C32EYT/D	○	□	○	○	—	—	—	—	—	—	—	—
FX5-C32EYT/DSS	○	□	○	○	—	—	—	—	—	—	—	—
FX5-C32ET/D	○	□	○	○	—	—	—	—	—	—	—	—
FX5-C32ET/DSS	○	□	○	○	—	—	—	—	—	—	—	—

Model Name	CE		UL	KC	Ship approvals							
	EMC	LVD			cUL	ABS	DNV	LR	GL	BV	RINA	NK
◆ FX5 Intelligent function module												
FX5-40SSC-S	○	□	○	○	—	—	—	—	—	—	—	—
◆ FX5 Extension power supply module												
FX5-1PSU-5V	○	○	○	○	—	—	—	—	—	—	—	—
◆ FX5 Bus conversion modules												
FX5-CNV-BUS	○	□	○	○	—	—	—	—	—	—	—	—
FX5-CNV-BUSC	○	□	○	○	—	—	—	—	—	—	—	—
◆ FX5 Connector conversion module												
FX5-CNV-IFC	○	□	○	○	—	—	—	—	—	—	—	—
◆ FX5 Expansion adapters												
FX5-4AD-ADP	○	□	○	○	—	—	—	—	—	—	—	—
FX5-4DA-ADP	○	□	*	○	—	—	—	—	—	—	—	—
FX5-232ADP	○	□	○	○	—	—	—	—	—	—	—	—
FX5-485ADP	○	□	○	○	—	—	—	—	—	—	—	—
◆ FX5U Expansion boards												
FX5-232-BD	○	□	—	○	—	—	—	—	—	—	—	—
FX5-485-BD	○	□	—	○	—	—	—	—	—	—	—	—
FX5-422-BD-GOT	○	□	—	○	—	—	—	—	—	—	—	—
◆ FX3 Intelligent function modules												
FX3U-4AD	○	□	○	○	—	—	—	—	—	—	—	—
FX3U-4DA	○	□	○	○	—	—	—	—	—	—	—	—
FX3U-4LC	○	□	○	○	—	—	—	—	—	—	—	—
FX3U-1PG	○	□	○	○	—	—	—	—	—	—	—	—
FX3U-2HC	○	□	○	○	—	—	—	—	—	—	—	—
FX3U-16CCL-M	○	□	○	○	—	—	—	—	—	—	—	—
FX3U-64CCL	○	□	○	○	—	—	—	—	—	—	—	—
◆ FX3 Extension power supply module												
FX3U-1PSU-5V	○	○	○	○	—	—	—	—	—	—	—	—

○: Compliant with standards or self-declaration □: No need to comply *: Support planned

■ EN Standards: Compliance with EC Directives/CE marking

EC Directives were issued by the European Council of Ministers to unify standards in the EU Community, and to ensure smooth distribution of products for which safety is ensured. Approximately 20 types of EC Directives for product safety have been issued. Attachment of a CE mark (CE marking) is mandatory on specific products before they may be distributed in the EU. The EMC Directive (Electromagnetic Compatibility Directive) and LVD Directive (Low Voltage Directive) apply to the programmable controller, which is labeled as an electrical part of a machine product under the EC Directives.

1) EMC Directive

The EMC Directive is a directive that requires products to have "Capacity to prevent output of obstructive noise that adversely affects external devices: Emission damage" and "Capacity to not malfunction due to obstructive noise from external source: Immunity".

2) LVD Directive (Low Voltage Directive)

The LVD Directive is enforced to distribute safe products that will not harm or damage people, objects or assets, etc. With the programmable controller, this means a product that does not pose a risk of electric shock, fire or injury, etc.



■ UL/cUL Standards

UL is the United State's main private safety testing and certification agency for ensuring public safety.

UL sets the safety standards for a variety of fields. Strict reviews and testing are performed following the standards set forth by UL. Only products which pass these tests are allowed to carry the UL Mark.

As opposed to the EN Standards, the UL Standards do not have a legally binding effect. However, they are broadly used as the U.S. safety standards, and are an essential condition for selling products into the U.S..

UL is recognized as a certifying and testing agency by the Canadian Standards Association (CSA). Products evaluated and certified by UL in accordance with Canadian standards are permitted to carry the cUL Mark.



Products list

CPU & I/O modules

Model	Specification				
	Power Supply	Input	Output		
CPU modules					
FX5U-32MR/ES	100 to 240 V AC 50/60 Hz	16 points	24 V DC Sink/source	Relay	
FX5U-32MT/ES				Transistor/sink	
FX5U-32MT/ESS				Transistor/source	
FX5U-64MR/ES		32 points		Relay	
FX5U-64MT/ES				Transistor/sink	
FX5U-64MT/ESS				Transistor/source	
FX5U-80MR/ES		40 points		Relay	
FX5U-80MT/ES	Transistor/sink				
FX5U-80MT/ESS	Transistor/source				
FX5UC-32MT/D	24 V DC	16 points	24 V DC Sink	16 points	
FX5UC-32MT/DSS		24 V DC Sink/source	Transistor/sink		
I/O modules					
FX5-8EX/ES	Power supply from CPU module	8 points	24 V DC Sink/source	—	
FX5-16EX/ES		16 points			
FX5-8EYR/ES		—	—	8 points	Relay
FX5-8EYT/ES					Transistor/sink
FX5-8EYT/ESS					Transistor/source
FX5-16EYR/ES		—	—	16 points	Relay
FX5-16EYT/ES					Transistor/sink
FX5-16EYT/ESS	Transistor/source				
FX5-32ER/ES	100 to 240 V AC 50/60 Hz	16 points	24 V DC Sink/source	Relay	
FX5-32ET/ES				Transistor/sink	
FX5-32ET/ESS				Transistor/source	
FX5-C32EX/D	Power supply from CPU module	32 points	24 V DC Sink	—	
FX5-C32EX/DS			24 V DC Sink/source	—	
FX5-C32EYT/D		—	—	32 points	Transistor/sink
FX5-C32EYT/DSS					Transistor/source
FX5-C32ET/D					16 points
FX5-C32ET/DSS		24 V DC Sink/source	Transistor/source		

Expansion Boards & Adapters

Model	Specification
FX5-232-BD	For RS-232C communication
FX5-485-BD	For RS-485 communication
FX5-422-BD-GOT	For GOT RS-422 communication
FX5-232ADP	For RS-232C communication
FX5-485ADP	For RS-485 communication
FX5-4AD-ADP	4 ch analog input adapter
FX5-4DA-ADP	4 ch analog output adapter

Intelligent function modules

Model	Specification
FX5-40SSC-S	Simple Motion 4-Axis module
FX3U-4AD	4 ch analog input
FX3U-4DA	4 ch analog output
FX3U-4LC	4 ch temperature control
FX3U-1PG	Positioning pulse output 200 kHz
FX3U-2HC	2 ch 200 kHz high-speed counter
FX3U-16CCL-M	Master for CC-Link (compatible with Ver. 2.00)
FX3U-64CCL	Interface for CC-Link (compatible with Ver. 2.00)

Power supply modules & Bus/Connector conversion modules

Model	Specification
FX5-1PSU-5V	Extension power supply module
FX5-CNV-BUS	Bus conversion FX5(terminal block)→FX3 (terminal block)
FX5-CNV-BUSC	Bus conversion FX5(connector)→FX3 (terminal block)
FX5-CNV-IFC	Connector conversion FX5(connector)→FX5 (terminal block)
FX3U-1PSU-5V	FX3U Extension power supply module

Software

Type	Model	Specification
MELSOFT iQ Works (DVD-ROM)	SW2DND-IQWK-E	FA engineering software*1
MELSOFT GX Works3 (DVD-ROM)	SW1DND-GXW3-E	PLC engineering software (includes GX Works2, GX Developer)

*1: Refer to the manual of the software for supported models.

User's manuals for the applicable modules

Manual name <manual number>	Description
MELSEC iQ-F FX5 User's Manual (Startup) <JY997D58201>	Describes the performance specifications, procedures before operation, and troubleshooting of the CPU module.
MELSEC iQ-F FX5UC User's Manual (Hardware) <JY997D61401>	Describes the details on the hardware of the FX5UC CPU module, including input/output specifications, wiring, installation and maintenance.
MELSEC iQ-F FX5U User's Manual (Hardware) <JY997D55301>	Describes the details on hardware of the FX5U series CPU module, including input/output specifications, wiring, installation, and maintenance.
MELSEC iQ-F FX5 User's Manual (Application) <JY997D55401>	Describes basic knowledge required for program design, functions of the CPU module, devices/labels, and parameters.
MELSEC iQ-F FX5 Programming Manual (Program Design) <JY997D55701>	Describes specifications of ladder, ST, and other programs and of labels.
MELSEC iQ-F FX5 Programming Manual (Instructions, Standard Functions/Function Blocks) <JY997D55801>	Describes specifications of instructions and functions that can be used in programs.
MELSEC iQ-F FX5 User's Manual (Serial Communication) <JY997D55901>	Describes inverter communication, and non-protocol communication.
MELSEC iQ-F FX5 User's Manual (SLMP) <JY997D56001>	Describes SLMP communication.
MELSEC iQ-F FX5 User's Manual (MELSEC Communication Protocol) <JY997D60801>	Describes MC protocol.
MELSEC iQ-F FX5 User's Manual (MODBUS Communication) <JY997D56101>	Describes MODBUS serial communication.
MELSEC iQ-F FX5 User's Manual (Ethernet Communication) <JY997D56201>	Describes the functions of the built-in Ethernet port communication function.
MELSEC iQ-F FX5 User's Manual (Positioning Control) <JY997D56301>	Describes the built-in positioning function.
MELSEC iQ-F FX5 User's Manual (Analog Control) <JY997D60501>	Describes the analog function.