



for a greener tomorrow



## FACTORY AUTOMATION

### MELSEC iQ-F Series iQ Platform-compatible PLC FX5UC-32MT/DS(S)-TS, FX5-C32E□/D□-TS

# Compact & Smart!

Wiring  
will change!

## A spring clamp terminal type is newly released!

#### CPU module 32 points

FX5UC-32MT/DS-TS DC D2 T1  
FX5UC-32MT/DSS-TS DC D2 T2

#### I/O module\*1 32 points

Input module	Output module	I/O module
FX5-C32EX/DS-TS	FX5-C32EYT/D-TS	FX5-C32ET/DS-TS
		FX5-C32EYT/DSS-TS



48.1 mm  
20.1 mm

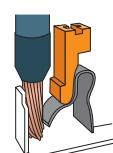
DC DC power supply T1 Transistor output (sink)  
D2 DC input (sink/source) T2 Transistor output (source)

\*1: When connecting to FX5U CPU module, FX5-CNVI-F is required.

#### What is a spring clamp terminal?

Spring clamp terminals hold wires in place by the force of internal springs. Constant force holds wires in place, preventing wires from falling out due to vibration.

(Internal construction)



Securely fixed by  
elastic force!

#### What are the advantages?

There is no need for crimp terminals or crimp tools!  
Wiring is possible without extra time or cost!



Attaching crimp  
terminals to cables one  
by one is tedious!

No need for crimp terminals  
or crimp tools! Just prepare  
the cables!

No external terminal is needed! Easily  
detachable & securely fixed by a lock lever!



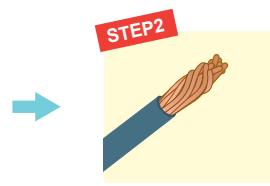
Lock lever

With detachable terminals, the change of  
wiring is not needed even when replacing  
the modules!

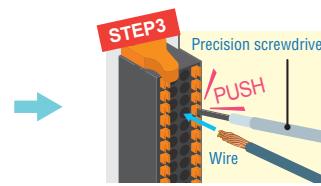
#### With spring clamp terminals, wiring is complete in 3 steps!



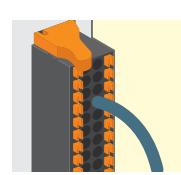
Strip wire



Twist wire



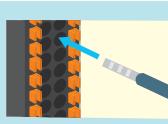
Insert wire



Wiring complete!

Additionally!

By using a ferrule terminal, wiring can be completed  
just by inserting with the push-in method.



Complete wiring smoothly,  
even in a confined panel.

For ferrule terminals, the following is introduced. (Reference product: PHOENIX CONTACT GmbH & Co. KG\*2)

Model	Type
CRIMPFOX 6	Crimp tool
AI 0.5-10 WH	Crimp terminal (Ferrule with insulation sleeve)
AI 0.75-10 GY	Wire size 0.5 mm <sup>2</sup>
A 1.0-10	Wire size 0.75 mm <sup>2</sup>
A 1.5-10	Wire size 1.0 mm <sup>2</sup>
	Wire size 1.5 mm <sup>2</sup>

\*2: If the product other than the reference product is used, the wire ferrule cannot be pulled out. Sufficiently confirm that the wire ferrule can be pulled out before use.

# Programmable Controller

## MELSEC iQ-F Series

### FX5UC CPU module

#### ■ Power supply specifications

Item	Specifications	
	FX5UC-32MT/DS-TS	FX5UC-32MT/DSS-TS
Power supply voltage	24 V DC	
Voltage fluctuation range	+20%, -15%	
Allowable instantaneous power failure time	Operation can be continued upon occurrence of instantaneous power failure for 5 ms or less.	
Power fuse	125 V, 3.15 A Time-lag fuse	
Rush current	35 A max. 0.5 ms or less/24 V DC	
Power consumption*	5 W/24 V DC [30 W/24 V DC +20%, -15%]	
24 V DC power supply capacity	500 mA	
5 V DC power supply capacity	720 mA	

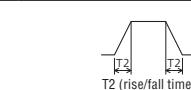
\*: This item shows value when only the CPU module is used. The value in [ ] is the value in the maximum configuration connectable to the CPU module. (The value does not include the external 24 V DC power supply of extension devices)

#### ■ Performance specifications

For the items other than the following, refer to the MELSEC iQ-F FX5UC User's Manual (Hardware).

Item	Specifications
Applicable engineering tool	GX Works3: Ver. 1.035M or later

#### ■ Input specifications (Refer to the manual for input circuit configuration.)

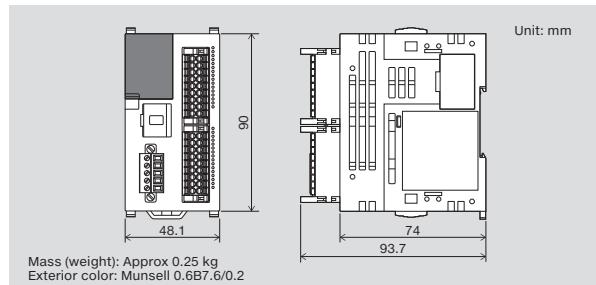
Item	Specifications	
	FX5UC-32MT/DS-TS	FX5UC-32MT/DSS-TS
No. of input points	16 points	
Connection type	Spring clamp terminal block	
Input type	Sink/source	
Input signal voltage	24 V DC +20%, -15%	
Input signal current	X0 to X17: 5.3 mA/24 V DC	
Input impedance	X0 to X17: 4.3 kΩ	
ON input sensitivity current	X0 to X17: 3.5 mA or more	
OFF input sensitivity current	1.5 mA or less	
Input response frequency	X0 to X5: 200 kHz, X6 to X17: 10 kHz	
Pulse waveform	Waveform 	
Input response time (H/W filter delay)	X0 to X5: 2.5 μs or less, X6 to X17: 50 μs or more X0 to X17: 30 μs or less	
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 value), 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: PNP 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	

#### ■ Output specifications (Refer to the manual for output circuit configuration.)

Item	Specifications	
	FX5UC-32MT/DS-TS	FX5UC-32MT/DSS-TS
No. of output points	16 points	
Connection type	Spring clamp terminal block	
Output type	Transistor/sink output	Transistor/source output
External power supply	5 to 30 V DC	
Max. load	Y0 to Y3: 0.3 A/point The total load current per common terminal should be the following value. * 8 output points/common terminal: 0.8 A or less*	Y4 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	Y0 to Y3: 1.0 V or less Y4 and subsequent: 1.5 V or less	
Response time	Y0 to Y3: 2.5 μs or less/10 mA or more (5 to 24 V DC) Y4 and subsequent: 0.2 ms or less/100 mA (24 V DC)	
Output circuit insulation	Photo-coupler insulation	
Indication of output operation	LED is lit when output is on	

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

#### ■ External dimensions



### I/O module

#### ■ Power supply specifications

Item	FX5-C32EX/DS-TS	FX5-C32EYT/D(SS)-TS	FX5-C32ET/DS-TS
Voltage rating	24 V DC (supplied from external power supply) 5 V DC (supplied from PLC)	24 V DC (supplied from external power supply) 5 V DC (supplied from PLC)	Input: 24 V DC (supplied from external power supply) 5 V DC (supplied from PLC)
Current consumption	5 V DC power supply: 120 mA 24 V DC power supply: — External 24 V DC power supply: 130 mA	120 mA 200 mA —	120 mA 100 mA 65 mA

#### ■ Input specifications (Refer to the manual for input circuit configuration.)

Item	FX5-C32EX/DS-TS	FX5-C32ET/DS-TS	FX5-C32ET/DSS-TS
No. of input points	32 points	16 points	
Connection type	Spring clamp terminal block		
Input type	Sink/source		
Input signal voltage	24 V DC/24 V DC, -15%		
Input signal current	4.0 mA/24 V DC		
Input impedance	5.6 kΩ		
Input sensitivity current	ON: 3.0 mA or more OFF: 1.5 mA or less		
Input response time	ON: 50 μs or less OFF: 150 μs or less		
Input signal format	No-voltage contact input		
Input circuit insulation	Sink: PNP open collector transistor	Source: PNP open collector transistor	
Indication of input operation	Photo-coupler insulation		

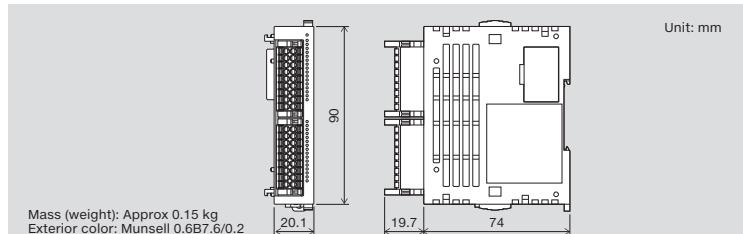
#### ■ Transistor/sink output specifications (Refer to the manual for output circuit configuration.)

Item	FX5-C32EYT/DS-TS	FX5-C32ET/DS-TS
No. of output points	32 points	16 points
Connection type	Spring clamp terminal block	
Output type	Transistor/sink output	
External power supply	5 to 30 V DC	
Max. load	0.1 A/point * 8 output points/common terminal: 0.8 A or less	The total load current per common terminal should be the following value.
Open circuit leakage current	0.1 mA/30 V DC	
Voltage drop when ON	1.5 V or less	
Response time	OFF—ON: 0.2 ms or less/100 mA (at 24 V DC) ON—OFF: 0.2 ms or less/100 mA (at 24 V DC)	
Output circuit insulation	Photo-coupler insulation	
Indication of output operation	LED is lit when output is on	

#### ■ Transistor/source output specifications (Refer to the manual for output circuit configuration.)

Item	FX5-C32EYT/DSS-TS	FX5-C32ET/DSS-TS
No. of output points	32 points	16 points
Connection type	Spring clamp terminal block	
Output type	Transistor/source output	
External power supply	5 to 30 V DC	
Max. load	0.1 A/point * 8 output points/common terminal: 0.8 A or less	The total load current per common terminal should be the following value.
Open circuit leakage current	0.1 mA/30 V DC	
Voltage drop when ON	1.5 V or less	
Response time	OFF—ON: 0.2 ms or less/100 mA (at 24 V DC) ON—OFF: 0.2 ms or less/100 mA (at 24 V DC)	
Output circuit insulation	Photo-coupler insulation	
Indication of output operation	LED is lit when output is on	

#### ■ External dimensions



#### ■ Product list

Model name		Input specifications		Output specifications	
		No. of input points	Input type	No. of input points	Output type
FX5UC-32MT/DS-TS	24 V DC	16 points	24 V DC sink/source	16 points	Transistor/sink
FX5UC-32MT/DSS-TS					
FX5-C32EX/DS-TS	Power is supplied from the CPU module	32 points	24 V DC sink/source	—	Transistor/sink
FX5-C32EYT/DS-TS		—	—	32 points	Transistor/source
FX5-C32EYT/D(SS)-TS	Power is supplied from the CPU module	—	—	—	Transistor/source
FX5-C32ET/DS-TS	Power is supplied from the CPU module	16 points	24 V DC sink/source	16 points	Transistor/sink
FX5-C32ET/DSS-TS					
FX5U-HW-E	MELSEC iQ-F FX5UC User's Manual (Hardware)	Model code: 09R536			
FX5UC-U-HW-E	MELSEC iQ-F FX5UC User's Manual (Hardware)	Model code: 09R558			

#### ■ Safety Warning

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

#### Registration

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