MITSUBISHI ELECTRIC
Changes for the Better

FACTORY AUTOMATION

MELSEC iQ-F Series
iQ Platform-compatible PLC
FX5-OPC

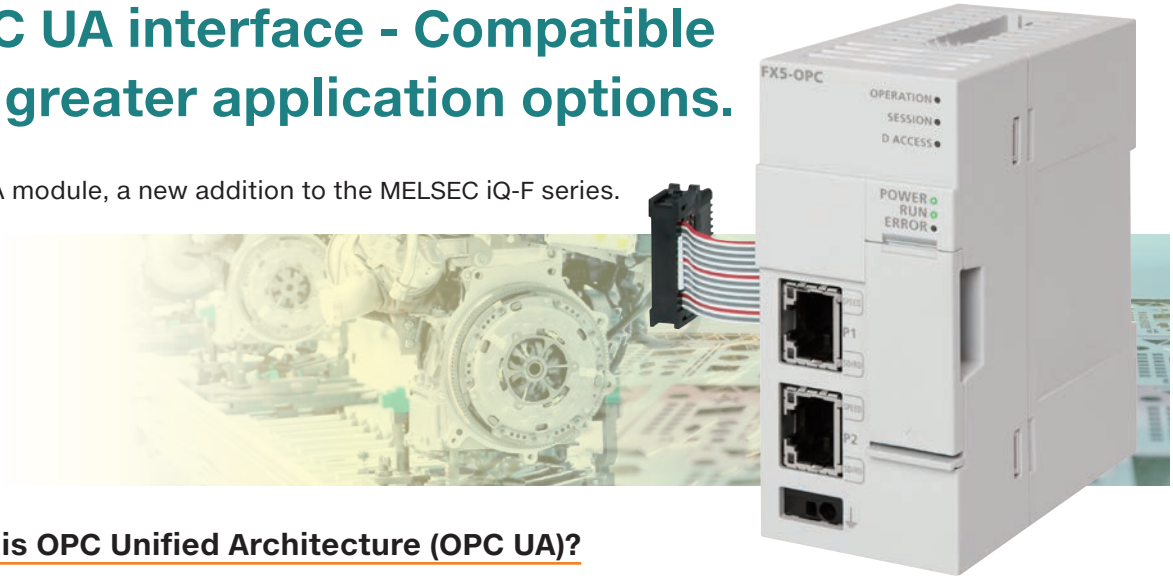
MELSEC iQ-F series

Bridges the worlds of manufacturing and IT

OPC UA module

OPC UA interface - Compatible for greater application options.

OPA UA module, a new addition to the MELSEC iQ-F series.



OPC UA module

FX5-OPC*

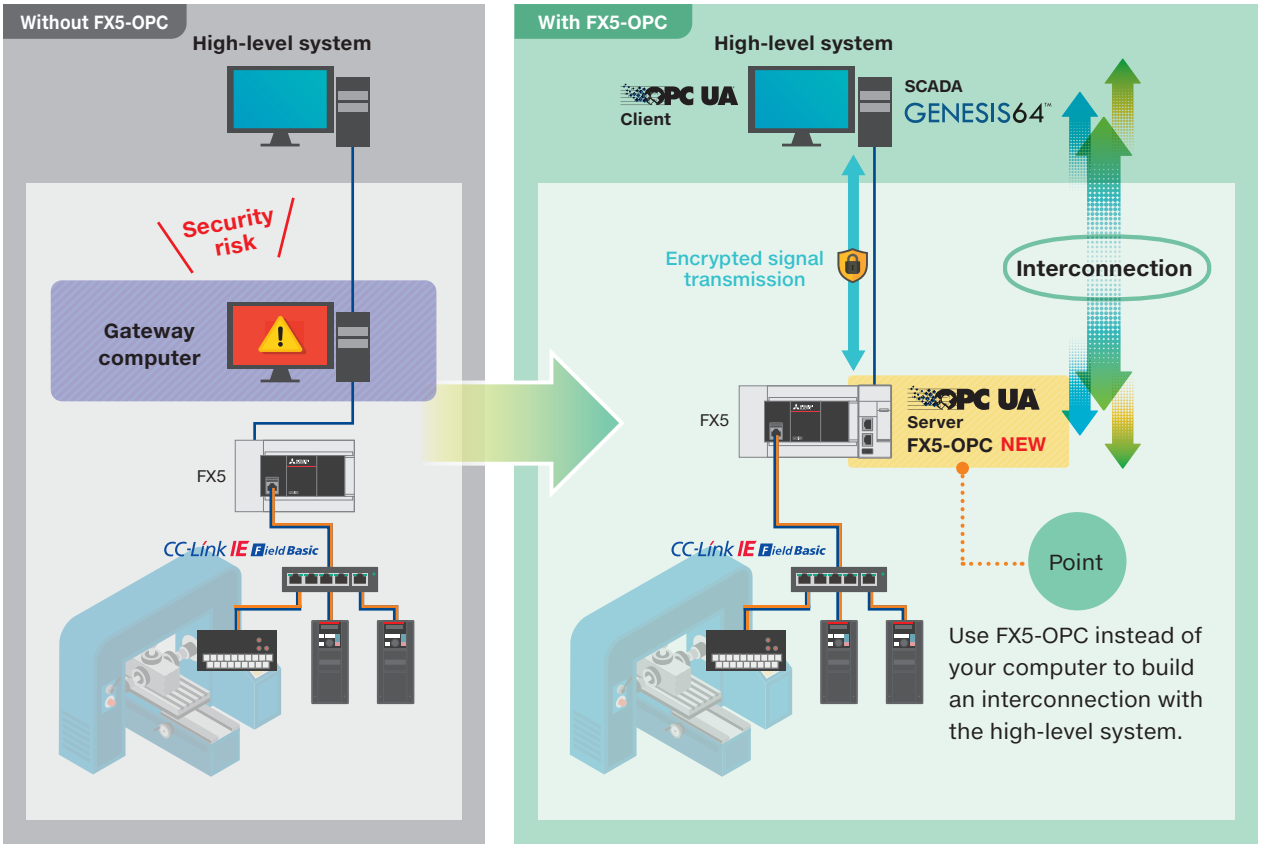
What is OPC Unified Architecture (OPC UA)?

OPC UA is a platform-independent communications standard developed by the OPC foundation, USA. It enables data exchange between vendor and OS neutral products, and offers secure and reliable data communications between manufacturing levels and higher-level IT systems.

Feature

Use the FX5-OPC as an OPC UA server to access the FX5 programmable controller data. FX5-OPC securely protects confidential information, such as machining information, from unauthorized access and eliminates the need for a gateway computer, reducing the security risk as well as the device cost.

System configuration comparison with and without FX5-OPC

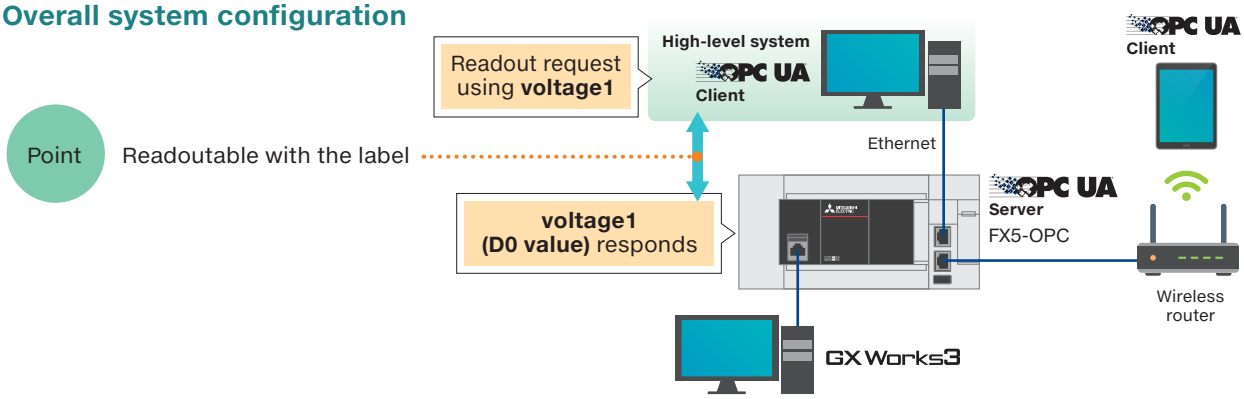


*: Compatible with FX5U/FX5UC CPU module firmware version 1.245 or later

Easy parameter setting

FX5-OPC (OPC UA server) responds to the readout request from the OPC UA client with the labels shown on the address space parameter setting window. Labels can be shown/hidden.

Overall system configuration



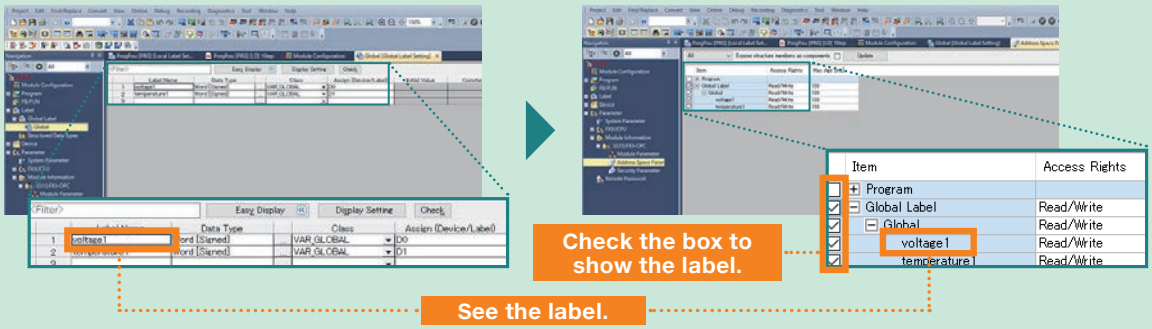
Setting the address space parameters

With GX Works3,*1 labels can easily be set to the FX5-OPC (OPC UA server) address space.

Example: To set the D0 device label name to voltage1

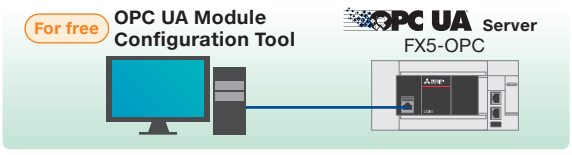
1. Set the label. (Example: voltage1)

2. Access the address space parameter settings, and select the labels to be shown.



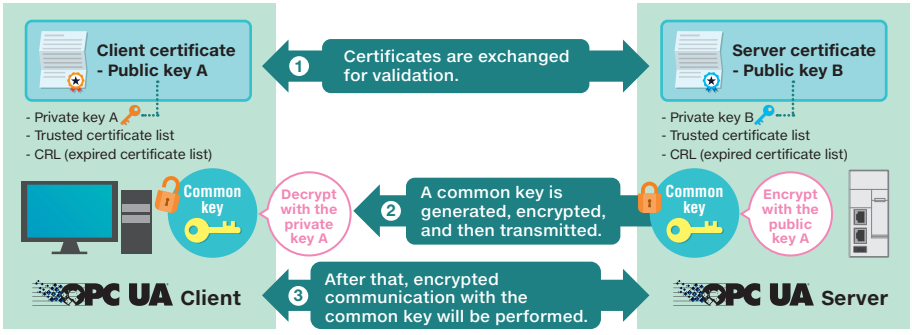
Enhanced security

The security of the FX5-OPC is established by using GX Works3*1 and OPC UA Module Configuration Tool.*2 Set the security policy and the certificate to define the security level and grant access right to specific clients.



Encrypted communication

FX5-OPC (OPC UA server) generates the common key, which is used to ensure secure communication with OPC UA client. The generated common key is encrypted and transmitted by using the public key included in the certificate and the corresponding private key.



*1: Supported by GX Works3 Ver. 1.077F or later.
*2: OPC UA Module Configuration Tool is a tool for setting the IP addresses and security parameters, managing server certificates, and checking/changing the server status of FX5-OPC. Please contact your local Mitsubishi Electric sales office or representative.

■ General specifications

Items	Specifications	
Ambient operating temperature	-20 to 55°C	
Ambient storage temperature	-25 to 75°C	
Dielectric withstand voltage	500 V AC for 1 minute	Between all terminals and ground terminal
Insulation resistance	10 MΩ or higher by 500 V DC insulation resistance tester	

■ Power supply specifications

Items		Specifications
Internal power supply	Power supply voltage	24 V DC
	Current consumption	110 mA

■ Performance specifications

Items				Specifications
OPC UA server	OPC UA version			1.03
	Profile			Micro Embedded Device Server Profile
	User authentication			User name and password
	Maximum number of parallel sessions			4
	Maximum number of subscriptions per session			2
	Maximum number of monitored items per subscription			500
	Minimum sampling interval of a monitored item			100 ms
	Maximum number of trusted certificates			10
	Network topology			Star topology
Ethernet	Transmission specification	Data transmission speed		100/10 Mbps
		Communication mode		Full-duplex/half-duples*1
		Transmission method		Base band
		Interface		RJ45 connector
		Maximum segment length		100 m*2
		Number of cascade connections	100BASE-TX	2 levels maximum*3
			10BASE-T	4 levels maximum*3
	Hub*1			Hubs with 100BASE-TX or 10BASE-T ports*4 can be used.
	Connection cable*5			100BASE-TX,10BASE-T
	Number of ports			2
Number of occupied I/O points				8 points
Number of connectable modules				1 module

∗1: IEEE802.3x flow control is not supported.
∗2: For maximum segment length (length between hubs), consult the manufacturer of the hub used.
∗3: This number applies when a repeater hub is used. For the number of levels that can be constructed when using a switching hub, consult the manufacturer of the switching hub used.
∗4: The ports must comply with the IEEE802.3 100BASE-TX or 10BASE-T standards.
∗5: A straight/cross cable can be used.

■ Applicable CPU module

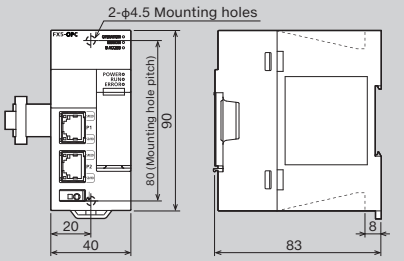
Model name	Applicability
FX5U CPU module	Version 1.245 or later
FX5UC CPU module*	Version 1.245 or later

∗: FX5-CNV-IFC or FX5-C1PS-5V is necessary to connect an FX5-OPC to an FX5UC CPU module.

■ Applicable software package

Software	Applicability
GX Works3	Version 1.077F or later
OPC UA Module Configuration Tool	Version 1.00A or later

■ External dimensions



Unit: mm

Mass (Weight):
Approx. 0.2 kg
Outer painting color:
Munsell 0.6B7.6/0.2

■ Security policy

Security policy	Message security mode
None	None
Basic128Rsa15	Sign
	SignAndEncrypt
Basic256	Sign
	SignAndEncrypt
Basic256Sha256	Sign
	SignAndEncrypt

■ Product list

Item	Specifications
FX5-OPC	FX5-OPC OPC UA module
FX5U-U-HW-E	MELSEC iQ-F FX5U User's Manual (Hardware) Model code: 09R536
FX5UC-U-HW-E	MELSEC iQ-F FX5UC User's Manual (Hardware) Model code: 09R558
FX5-U-OPC-E	MELSEC iQ-F FX5 User's Manual (OPC UA) Model code: 09R580

⚠ 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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