



Simplified Solutions for IIoT

A variety of ways to share data for IIoT applications



- Easy to set up within Sysmac Studio
- Simple to integrate into a variety of applications
- Multiple options to suit application needs



Easy to set up with Sysmac Studio No need to become an IT expert



The Sysmac Platform

The Omron Sysmac platform makes it easy to share quality machine data for use in IIoT applications.

There are 3 key methods for sharing data from Sysmac Controllers:

- 1. Embedded SQL Client
- 2. OPC UA Server
- 3. MQTT Function Blocks

Database connectivity - Symsac SQL

SQL (Structured Query Language) is the ANSI standard language for relational database management systems. Sysmac controllers with an embedded SQL Client option let users connect directly to a SQL database from the controller without the need for middleware or PCs on the plant floor. Built in function blocks make it easy to send and receive data from the controller. Realtime data access to time series data provides a strong foundation for analytics and traceability applications. Reliability is ensured with data spooling within the CPU.



Simple to integrate into a variety of applications Multiple options to suit application needs



MQTT Function Blocks

OPC UA: Reliable, secure and easy

OPC UA is an open industrial communication protocol that enables secure and reliable data exchange between machines as well as to other platforms such as Windows, Linux, or Android. Omron PLC's with embedded OPC UA servers eliminate the need for a gateway and let you connect directly to the host systems and select the variables you want to share.

MQTT (Message Queuing Telemetry Transport) is a simple and lightweight messaging protocol that uses a publish/subscribe model and has become an IIoT standard for machine-to-machine communications. The protocol is lightweight and designed for low-bandwidth, high-latency and unreliable networks. Devices use MQTT to publish data that other devices can subscribe to. If communications drop out, the service continues once communications are restored without resulting in errors or lost data. MQTT servers can be in the cloud or used with local servers.

We've made it easy for you to take advantage of MQTT technology using simple function blocks to publish and subscribe to data to an existing MQTT broker.

Omron simplifies MQTT connectivity

By writing a simple line of code, Omron makes it easy to connect to an MQTT broker directly from the PLC.¹



Write a line of code for your Omron PLC as part of the MQTT System



Directly connect to the MQTT Broker from the PLC. No need for additional equipment or software.

Part Numbers

Family	Part Number	Program Capacity	Motion Axes	OPC UA	SQL	MQTT [†]
NX1P2	NX1P2-9024DT	1.5 MB	4 PTP, 0 Coordinated			†
	NX1P2-9024DT1	1.5 MB	4 PTP, 0 Coordinated			+
	NX1P2-1040DT	1.5 MB	4 PTP, 2 Coordinated			+
	NX1P2-1040DT1	1.5 MB	4 PTP, 2 Coordinated			+
	NX1P2-1140DT	1.5 MB	4 PTP, 4 Coordinated			+
	NX1P2-1140DT1	1.5 MB	4 PTP, 4 Coordinated			+
NX102	NX102-9000	5 MB	4 PTP, 0 Coordinated	\checkmark		+
	NX102-9020	5 MB	4 PTP, 0 Coordinated	\checkmark	\checkmark	+
	NX102-1000	5 MB	4 PTP, 2 Coordinated	\checkmark		+
	NX102-1020	5 MB	4 PTP, 2 Coordinated	\checkmark	\checkmark	+
	NX102-1100	5 MB	4 PTP, 4 Coordinated	\checkmark		+
	NX102-1120	5 MB	4 PTP, 4 Coordinated	\checkmark	\checkmark	+
	NX102-1200	5 MB	4 PTP, 8 Coordinated	\checkmark		+
	NX102-1220	5 MB	4 PTP, 8 Coordinated	\checkmark	\checkmark	+
NX7	NX701-1600	80 MB	128 Coordinated	\checkmark		\checkmark
	NX701-1620	80 MB	128 Coordinated	\checkmark	\checkmark	\checkmark
	NX701-1700	80 MB	256 Coordinated	\checkmark		\checkmark
	NX701-1720	80 MB	256 Coordinated	\checkmark	\checkmark	\checkmark
NJ1	NJ101-9000	3 MB	0			\checkmark
	NJ101-9020	3 MB	0		✓	✓
	NJ101-1000	3 MB	2 Coordinated			\checkmark
	NJ101-1020	3 MB	2 Coordinated		\checkmark	\checkmark
NJ5	NJ501-1300	20 MB	16 Coordinated	✓		✓
	NJ501-1320	20 MB	16 Coordinated		√	\checkmark
	NJ501-1400	20 MB	32 Coordinated	~		✓
	NJ501-1420	20 MB	32 Coordinated		√	\checkmark
	NJ501-1500	20 MB	64 Coordinated	\checkmark		\checkmark
	NJ501-1520	20 MB	64 Coordinated		\checkmark	\checkmark
	NJ501-4320	20 MB	16 Coordinated		✓	\checkmark

t. Denotes TLS functionality for MQTTs with secure sockets

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