

Your trusted partner in automation

OMRON

Simplified Solutions for IIoT

A variety of ways to share data for IIoT applications

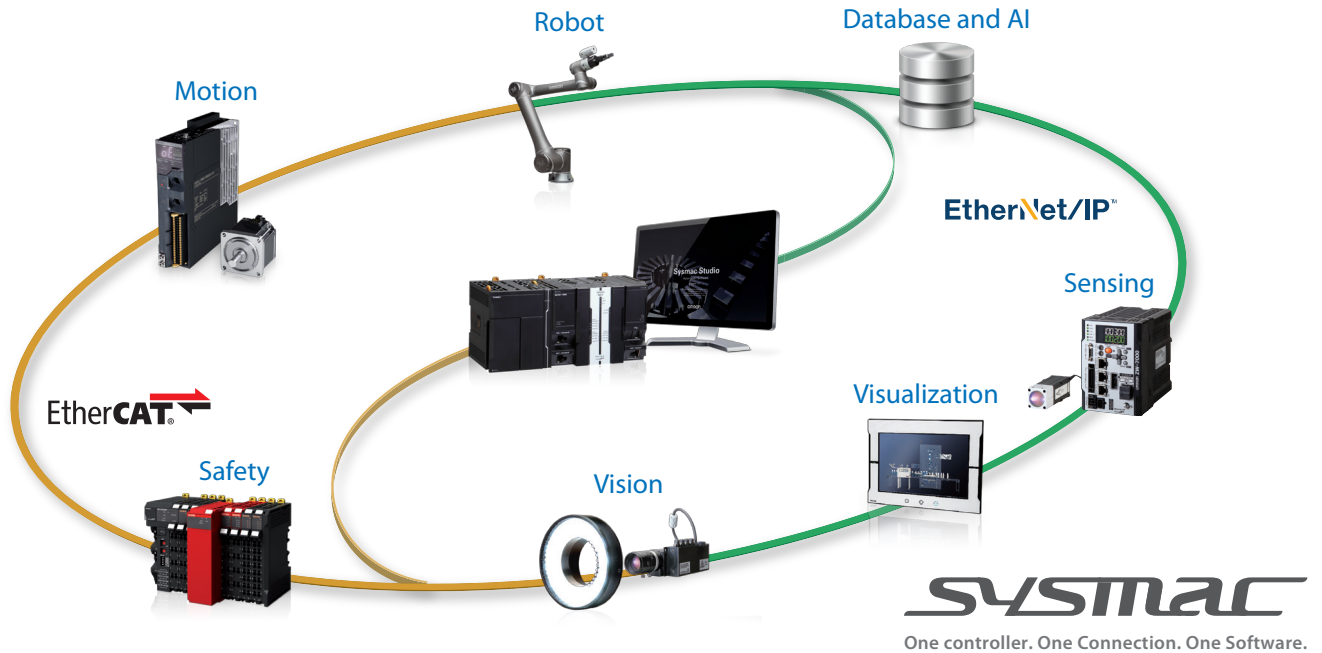


- Easy to set up within Sysmac Studio
- Simple to integrate into a variety of applications
- Multiple options to suit application needs

SYSMAC
always in control

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.

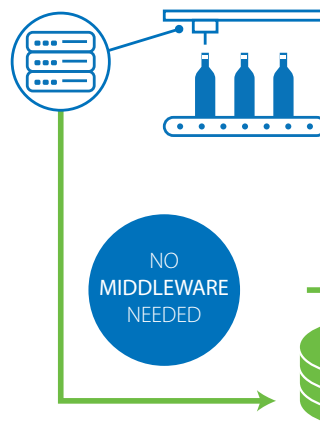
There are 3 key methods for sharing data from Sysmac Controllers:

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

Database connectivity - Sysmac 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. Real-time data access to time series data provides a strong foundation for analytics and traceability applications. Reliability is ensured with data spooling within the CPU.

EMBEDDED MACHINE CLIENT



SQL Client embedded directly into machine PLC.

SQL DATABASE



Directly connect to the SQL database without additional equipment.

Simple to integrate into a variety of applications

Multiple options to suit application needs



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 Function Blocks

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

STEP 01
WRITE CODE



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



STEP 02
CONNECT



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

¹: Server can be local or remote (i.e. cloud service)

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	✓		†
	NX102-9020	5 MB	4 PTP, 0 Coordinated	✓	✓	†
	NX102-1000	5 MB	4 PTP, 2 Coordinated	✓		†
	NX102-1020	5 MB	4 PTP, 2 Coordinated	✓	✓	†
	NX102-1100	5 MB	4 PTP, 4 Coordinated	✓		†
	NX102-1120	5 MB	4 PTP, 4 Coordinated	✓	✓	†
	NX102-1200	5 MB	4 PTP, 8 Coordinated	✓		†
NX7 	NX701-1600	80 MB	128 Coordinated	✓		✓
	NX701-1620	80 MB	128 Coordinated	✓	✓	✓
	NX701-1700	80 MB	256 Coordinated	✓		✓
	NX701-1720	80 MB	256 Coordinated	✓	✓	✓
NJ1 	NJ101-9000	3 MB	0			✓
	NJ101-9020	3 MB	0		✓	✓
	NJ101-1000	3 MB	2 Coordinated			✓
	NJ101-1020	3 MB	2 Coordinated		✓	✓
NJ5 	NJ501-1300	20 MB	16 Coordinated	✓		✓
	NJ501-1320	20 MB	16 Coordinated		✓	✓
	NJ501-1400	20 MB	32 Coordinated	✓		✓
	NJ501-1420	20 MB	32 Coordinated		✓	✓
	NJ501-1500	20 MB	64 Coordinated	✓		✓
	NJ501-1520	20 MB	64 Coordinated		✓	✓
	NJ501-4320	20 MB	16 Coordinated		✓	✓

†. Denotes TLS functionality for MQTTs with secure sockets

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