

Part type designation	Part number
OPCUA-M100-S-DA-RT	000046605-00

OPC UA Server

Openness, productivity and connectivity – Unified Architecture

The OPC UA Server is a pure software solution that runs directly on the controller CPUs without requiring any additional hardware. Systems for visualization, data logging or cloud solutions can use OPC UA as a manufacturer independent interface.

The OPC UA Server provides full and transparent access to the controller's released process data. Variable values, time stamps, and quality information are updated automatically, while monitoring can be performed at configurable sampling rates.

Configuration is handled conveniently via the M100 web configurator, where users define which variables are exposed. This ensures that only relevant process values from the controller are made available through OPC UA. The selected variables remain subject to user-specific access control, ensuring full control at all times. Individual user roles can be flexibly assigned for each client connection.

OPC UA is one of the most secure communication standards in automation technology. Finely adjustable security policies combined with certificate-based protection ensure tamper-proof and eavesdropping-resistant data communication, even over public IT networks.

Server Data Access

- Maps selected variables from the M100 control application into the address space
- Takes into account the user-specific access rights to variables which are managed in the M100 system
- Supports state-of-the-art encryption methods
- Integrated configuration via web front end

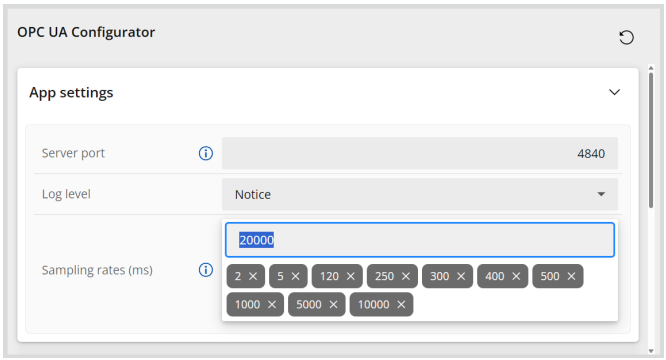
Features

- Pure software solution, runs directly on the M100 CPU
- Vendor-independent interface for visualization, data acquisition, and cloud connectivity
- Access to shared process data, including time stamps and quality information
- Configurable sampling rates for variable monitoring
- Flexible selection of variables exposed in the address space
- User- and role-based access control per client connection

Configuration

Configuration and commissioning of the OPC UA Server are carried out in the SolutionCenter or, alternatively, conveniently via any standard web browser. All parameters for addressing, security policies, and load limitation can be configured in a structured and user-friendly way using forms.

The OPC UA Server reliably maps all variables of the M100 controller; if required, only a defined subset of variables can be provided. This allows data provisioning to be flexibly adapted to the specific application and system environment.

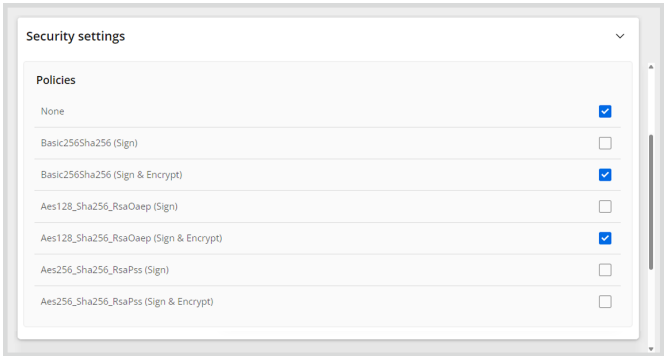


Configurable sampling rates in the M100 OPC UA Server

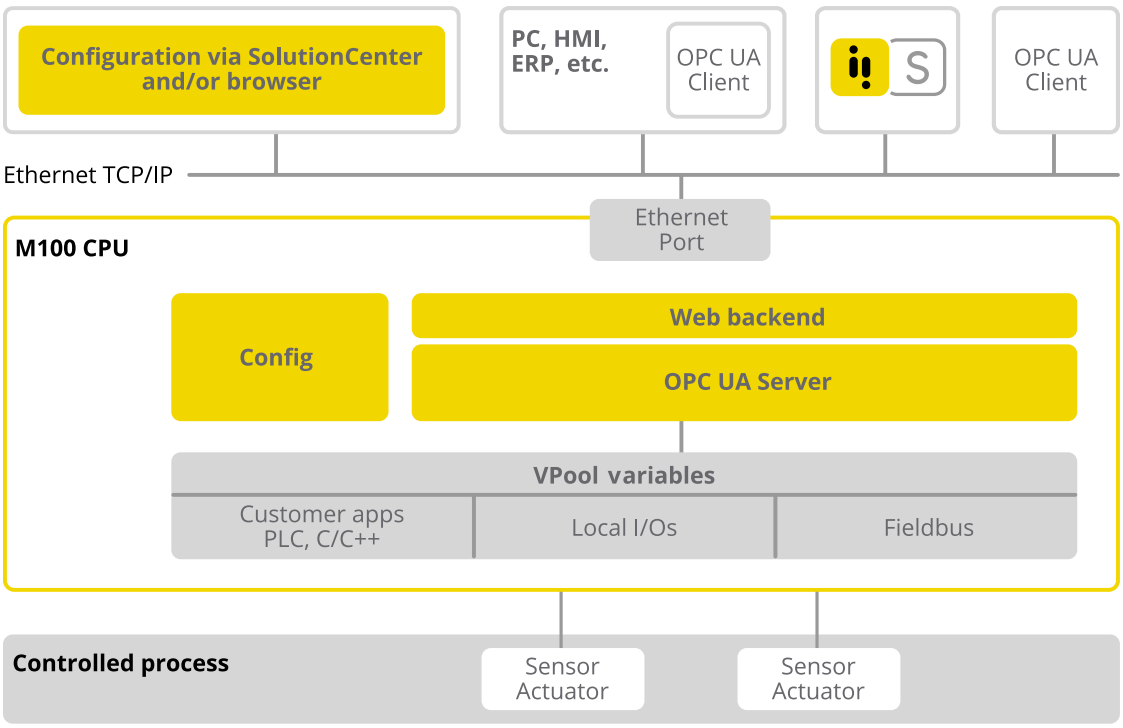
Security

Communication between client and server can be secured against eavesdropping and tampering in accordance with the latest state of the art. Various modern security mechanisms and key lengths are available, allowing the protection concept to be tailored precisely to the specific application.

The server operates based on a public key infrastructure (PKI) and manages the required certificate files within this folder structure – both for itself and for authorized clients. Depending on the use case, either self-signed or publicly trusted certificates can be used, enabling secure and scalable communication in networked automation systems.



Configuration of security policies



OPC UA Server on the M100 controller

M100 OPC UA Server

Supported OPC UA Profiles	
Information Model	Data Access (DA)
Server Profiles and Facets	Embedded 2025 UA Server Profile Data Access Server Facet Core 2022 Server Facet Base Server Behaviour Facet Standard DataChange Subscription 2022 Server Facet
Security Policies	Aes128_Sha256_RsaOaep (Sign) Aes128_Sha256_RsaOaep (Sign & Encrypt) Aes256_Sha256_RsaPss (Sign) Aes256_Sha256_RsaPss (Sign & Encrypt) Basic256Sha256 (Sign) Basic256Sha256 (Sign & Encrypt) None
Transport Profile	TCP Binary
Security features	
Encryption	See security policies
Protection against overload (DoS)	CPU load caused by clients can be limiting the relevant parameters.
Public key infrastructure	File-based on the controller
Logging	Connections and write operations are stored in the security log of the controller.
Restriction of visible variables	The address space can be configured in the SolutionCenter. If the security settings and access rights to the controller are used, visibility also depends on the login of the OPC UA client.
Diagnostics	
State variables	Number of active sessions Number of active subscriptions Number of items monitored by subscription
Show functions	List of sessions List of all software modules in the address space List of all items in subscriptions
Logbook messages	Amount and type of messages can be selected by debug levels
Supported OPC UA service sets	
Discovery Service Set	FindServers GetEndpoints
SecureChannel Service Set	OpenSecureChannel CloseSecureChannel
Session Service Set	CreateSession ActivateSession CloseSession Cancel
Attribute Service Set	Read Write
View Service Set	Browse BrowseNext TranslateBrowsePathToNodeIds RegisterNodes UnregisterNodes

Supported OPC UA service sets	
MonitoredItem Service Set	CreateMonitoredItems ModifyMonitoredItems SetMonitoringMode SetTriggering DeleteMonitoredItems MonitorEvents
Subscription Service Set	CreateSubscription ModifySubscription SetPublishingMode Publish DeleteSubscriptions Republish

General features

Installation	
Shipping	Separately installable product (M100 app); Delivery on DVD or as a download
Target platform	Installation as an app on the M100 controller
Installation tool	Bachmann SolutionCenter
Licensing	Requires a runtime license for each controller CPU (independent of number of remote stations and data points), different licenses for server and client
License protection	License file depending on hardware
System requirements	
CPU hardware	All M100 CPU series
Memory	Minimum 64 MB, recommended 128 MB
System software version	From M-Base V5.05 or higher

Order data

Part type designation	Part number	Description
Installer	Part of M-Base	Software, libraries, documentation, and examples for using the OPC UA Server on an M100 controller. Available features depend on RT-license. Without license, fully functional operation is possible in a 2 h demo mode.
OPCUA-M100-S-DA-RT	000046605-00	License to operate the OPC UA Server on one controller CPU. Provides communication according to the OPC UA standard Data Access.