



Part type designation	Part number
atvise® connect X small Modbus/Siemens	-
atvise® connect X standard Modbus	00046307-00
atvise® connect X standard Modbus/Siemens	00046308-00
atvise® connect X large Modbus/Siemens	00046309-00
atvise® connect X xlarge Modbus/Siemens	00046310-00

atvise® connect X

atvise® connect X is a standalone OPC UA server that acts as an interface between atvise® hmi/scada and peripheral devices from various manufacturers, enabling bidirectional data exchange. Peripheral devices are connected via native communication protocols. Supported protocols include access to Siemens S7 controllers with symbolic addressing, online browsing, and optimized data block access, as well as Modbus-TCP. Controller data is mapped in the OPC UA address space of atvise® connect X and can be accessed by atvise® via the OPC UA interface. atvise® connect X can be installed as a stand-alone application, either locally or on any server within the network, and is compatible with atvise® hmi/scada bundled with other applications.

Seamless control integration and flexible addressing

atvise® connect X enables access to machine data from a wide variety of controllers, such as Siemens SIMATIC S7 and Modbus-TCP PLCs. The solution expands existing systems through seamless IIoT integration, protecting existing investments and allowing for easy retrofitting without requiring modifications to existing configurations. Control variables can be quickly configured via the integrated browse function or dynamically reloaded at runtime using the API – ideal for flexible online engineering and mass engineering. The integrated OPC UA server ensures open, platform-independent, and market-proven communication, enabling smooth connectivity to higher-level systems like atvise® scada.

Flexible and scalable container solution with state-of-the-art security

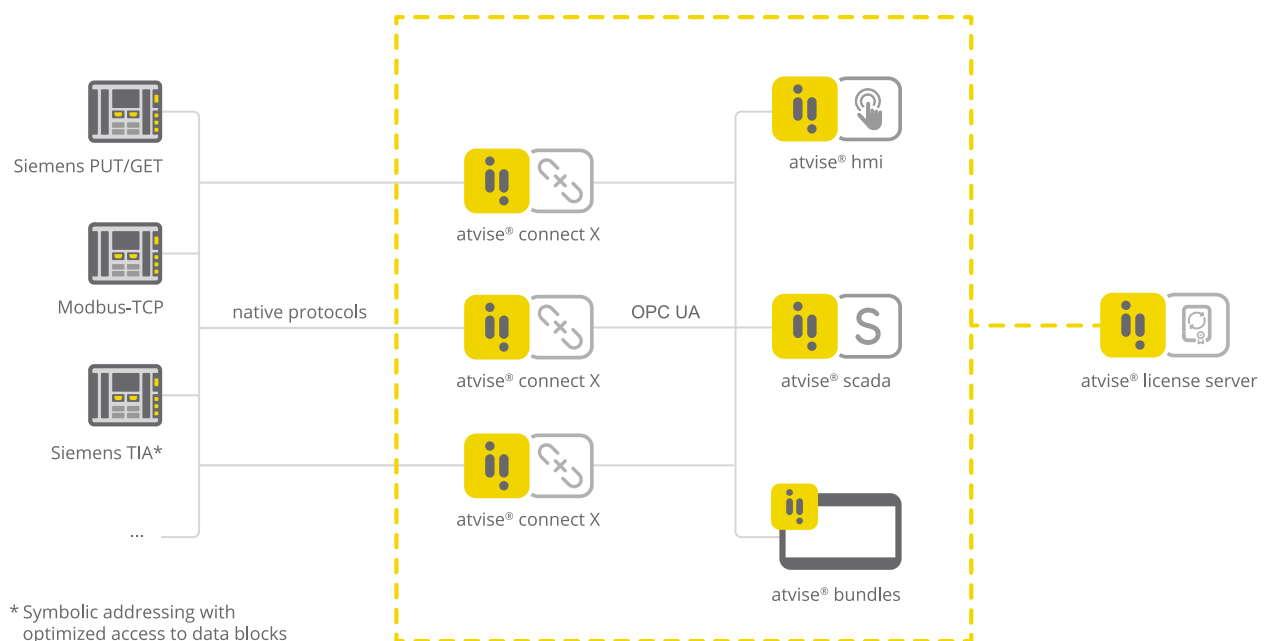
Whether as a stand-alone solution, distributed across multiple runtime instances, or in container-based environments, the lightweight architecture of atvise® connect X offers enormous scalability for applications ranging from small to very large, with a multitude of data points. Support for distributed systems and remote operating options enables precise adaptation to complex networks and customer requirements. The atvise® license server can be optionally integrated to ensure consistent usability and reliable support. Secure communication complies with relevant OPC UA standards. atvise® connect X is therefore ideally suited for modern, secure Industry 4.0/5.0 environments and meets the requirements of the Cyber Resilience Act (CRA).

Future-proof technology and optimized diagnostics

atvise® connect X represents the new generation of driver connectivity in the atvise® portfolio, focusing not only on performance but also on diagnostics. Comprehensive status and diagnostic data ensure consistent connection quality and support operators through early fault detection and more efficient troubleshooting. Vertical and horizontal scaling options round out the product by adapting to a wide range of system complexities.

Use Case: Efficient modernization of wind and hybrid energy plants

atvise® connect X and atvise® scada integrate heterogeneous controllers into a modern cloud and edge architecture. Data is exchanged securely and efficiently between edge devices and cloud infrastructures via the high-performance OPC UA interface, fully complying with the requirements of the Cyber Resilience Act (CRA). The integrated diagnostic function of atvise® connect X enables precise fault identification, thus supporting rapid commissioning and stable system operation. This ensures maximum transparency, security, and efficiency in distributed automation networks.



Features

- Driver connectivity with support for Siemens S7 controllers (including symbolic addressing with optimized data blocks and online browsing) as well as Modbus-TCP clients
- Proprietary product as a complement to the atvise® product family and integration into atvise® – also with atvise® bundles
- Quick configuration of control variables via integrated browse function
- Alternatively, create control variables completely at run-time (API)
- Add or modify control variables during operation (online engineering)
- Compatibility with existing atvise® connect addressing
- Diagnostics and statistics to support commissioning and troubleshooting
- Operating modes: stand-alone, distributed across multiple runtime instances, and remotely on different computers – native, virtual, and in containers
- Enormous scalability from very small to very large applications
- Optional connection to the atvise® license server via atvise® hmi/scada license

atvise® connect X

Process connection	
Protocols	• OPC UA Data Access (server) • Siemens S7 via absolute (PUTGET) and symbolic addressing • Modbus-TCP
Physical interface	Ethernet – physical characteristics depend on the target device
Parallel operation	Yes, multiple protocols and multiple data sources
Data types	OPC UA-compliant standard data types
Data mapping	Integrated – digital, analog and character strings
Data model transfer	Yes, either manual or automatic
Data designation	Freely selectable – transfer from data source possible
Source timestamping	Yes, OPC UA compliant
Quality labelling	Yes, OPC UA compliant
Transmission mode	Depending on the protocol, event-driven or cyclic
Update rate	• Project- and configuration-dependent from 100 ms • Adjustable depending on protocol and connection
Update suppression	Yes, old/new comparison
Connection monitoring	Yes
Access security / Security	Yes, OPC UA compliant, optionally with encryption, onboard certificate management
Data structure detection	Hierarchical interface for browsing, configuration, and runtime operation (protocol-dependent)
Simulation mode	No
Logging	Yes
Siemens S7 Interface	
Connection path	Ethernet TCP/IP (ISO-on-TCP)
Controller compatibility	• S7-300 • S7-400 • S7-1200 • S7-1500 Symbolic access is possible to S7 controllers of the 1200 and 1500 series
Access methods	• PUTGET access (absolutely addressed) • Symbolic TLS access (from TIA Portal V17) • Symbolic legacy access (up to TIA Portal V16) For PUTGET access to S7-1200/1500, access must be enabled in the CPU; databases must not be optimized. Firmware and project requirements apply to symbolic access (see section "Compatibility")
Access types	Reading and writing databases, inputs, outputs, flags, timers and counters
Data types	Extensive data type support including time/date, strings, BCD, and raw; arrays and structs with symbolic access (read; write element by element)
Optimization options	Old/new comparison configurable per connection PUTGET: Bundling of requests and reduced round trips Symbolic: Bundling inside/outside of objects
PUTGET compatibility	• Areas: I/O, markers, timers, counters, non-optimized databases • S7-1200/1500: PUTGET is disabled by default and must be enabled in the CPU under "Protection & Security" / "Users & Roles" • Database access: Disable "optimized block access"

Siemens S7 Interface	
Symbolic TLS access compatibility (from TIA Portal V17)	• CPUs: S7-1200, S7-1200 G2, S7-1500, PLCSim • Authentication: Password or user name/password • Prerequisite: Project/hardware configuration at least TIA V17, then recompile and transfer
Symbolic legacy access compatibility (up to TIA Portal V16)	• CPUs: S7-1200, S7-1500 • Authentication: Password (PLCSim without password) <i>Depending on the firmware, legacy mode may need to be explicitly enabled in the controller.</i>
Diagnostics	Read device/diagnostic information (part number, firmware number, CPU mode)
Logging	Individual, filterable log entries per connection
Modbus connectivity	
Connection path	Ethernet TCP/IP
Controller compatibility	Connection of Modbus devices or Modbus gateways by specifying the server ID via TCP
Supported function codes	1, 2, 3, 4, 5, 6, 15, 16, 22
Data types	Extensive data type support including time/date, strings, BCD and raw, as well as support for arrays and byte swapping
Optimization options	• Old/new comparison configurable per connection • Optimization level for read/write batching and request grouping (none, low, medium, high) configurable per connection • Pipelining: send multiple requests without waiting for responses
Security	Configurable TLS/SSL security level for encrypted connections to validate the server certificate
Diagnostics	Depending on the register definition of the remote station
Logging	Individual, filterable log entries per connection
Server	
Core processes technology	.NET platform-neutral
Module interface	.NET API
Processing in multiple threads	Yes
Interface to higher-level systems	OPC UA Data Access
Supported OPC specifications	OPC Unified Architecture V1.04
OPC UA roles	OPC UA server
OPC UA profiles	Data Access
OPC UA security methods	Basic256Sha256
OPC UA authentication	User name and password
Configuration persistence	Yes, configuration is stored in files
Process data model	• Optionally fully structured or object-oriented • Support of hierarchies and derived types
Server timestamping	Yes, independent of the source timestamp
User management	Yes, administrator; protected via user name and password
Alarm system / Historical data collection / Aggregation / Reporting / Scripting	Only in combination with atvise® hmi/scada
Reliability	Cold standby via network redundancy
Virtualization	Yes
Quantity structures	Project- and hardware-dependent ¹⁾
¹⁾ Contact us for detailed information on quantity structures. An overview of possible project configurations and hardware setups can be accessed at ➔ www.atvise.com in the "System Requirements" area.	

Client	
Client technology	OPC UA Data Access
Number of clients	Project- and hardware-dependent ¹⁾
¹⁾ Contact us for detailed information on quantity structures. An overview of possible project configurations and hardware setups can be accessed at ➔ www.atvise.com in the "System Requirements" area.	
Configuration/engineering	
Server interfaces	Configuration files, OPC UA
Online engineering	Yes
Remote engineering	Yes
Multisession engineering	Yes
Multiuser engineering	No
Automated engineering	Yes
Diagnostics	
Process data statistics	Yes
Systemlog	Yes
Online diagnostics	Yes
Online connection statistics	Yes
Status codes	OPC UA compliant
Logbook messages	Amount and type of messages can be selected by debug levels
State variables	Yes
Communication statistics	Yes
Subscribed items	Yes
Installation	
Clients	See atvise® hmi/scada
Server	- Windows: Installation via executable file - Linux: Installation via package
Licensing	Licensing based on protocols, maximum number of connections, and maximum number of variables across all licensed protocols
License protection	Server-side verification using a hardware-dependent software key together with atvise® hmi/scada
System requirements for server	
Device	- Generally project-dependent - Minimum scope: - x86 or ARM®-based CPU with at least 1 core and 500 MHz pulsing - At least 500 MB RAM - At least 128 MB free memory - At least one network card
Operating system ¹⁾	- Windows 11 (64 bit) - Windows Server 2022/2025 (64 bit) - Ubuntu 20.04/22.04 LTS (64 bit) - Oracle 9 (64 bit) - Debian 11/13 (64 bit) - Debian 11/13 (ARM® 64 bit) - Debian 11/13 (ARM® 32 bit (arm7hf))
Supported architectures	AMD64, ARM64, ARM32
Container support	Yes
Virtual machine	Yes
¹⁾ Detailed information on supported operating systems and web browsers can be found at ➔ www.atvise.com and accessed in the "System Requirements" area.	

Versions	
atvise® connect X small Modbus/Siemens	License for the operation of an atvise® connect X server with 3 data sources and 10 000 communicable variables. Enables communication with Siemens S7 and Modbus-TCP.
atvise® connect X standard Modbus	License for the operation of an atvise® connect X server with 20 data sources and 20 000 communicable variables. Enables communication via Modbus-TCP.
atvise® connect X standard Modbus/Siemens	License for the operation of an atvise® connect X server with 20 data sources and 20 000 communicable variables. Enables communication with Siemens S7 and Modbus-TCP.
atvise® connect X large Modbus/Siemens	License for the operation of an atvise® connect X server with 50 data sources and 50 000 communicable variables. Enables communication with Siemens S7 and Modbus-TCP.
atvise® connect X xlarge Modbus/Siemens	License for the operation of an atvise® connect X server with 200 data sources and 1 000 000 communicable variables. Enables communication with Siemens S7 and Modbus-TCP.
atvise® connect X xlarge Modbus/Siemens	License for the operation of an atvise® connect X server with > 200 data sources and > 1 000 000 communicable variables. Enables communication with Siemens S7 and Modbus-TCP.