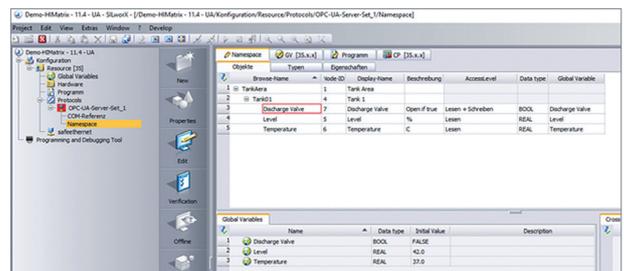**SIL**worX®

# Prepared for Industry 4.0 with HIMA and OPC UA

From system release V12 onwards, HIMA safety controllers have a fully integrated OPC UA server that can be configured with SILworX. This enables you to network all your devices and machines with one another and integrate them into automation environments, regardless of the platform. As an open, established standard, Open Platform Communications United Architecture (OPC UA) offers optimal conditions for data exchange in industrial communication. The OPC UA server runs directly on all safety controllers' COM modules of the HIMA Smart Safety Platform. As a result, you do not need any new hardware, nor are complex implementations required. You can easily retrofit the software in existing platforms.

Highlights

- **Integrated:** No additional PC is required thanks to the embedded OPC UA server profile.
- **Simple:** OPC UA runs on the COM modules of HIMA systems, as is the case with other protocols (Modbus TCP, for example).
- **Uniform:** The server supports all systems of the HIMA Smart Safety Platform.
- **Configurable:** In addition to pure PLC data, meta information can be modeled directly in SILworX.
- **Forward thinking:** OPC UA is the leading protocol for Industry 4.0, Module Type Package (MTP), IIoT, and NAMUR Open Architecture (NOA) applications.
- **Standardized:** OPC UA is already the standard protocol in many fields. In the future, "companion specifications" will provide ready-made information models for specific processes and device types.
- **Flexible:** The information model can be adapted to new technologies. It is therefore future proof without the need to alter the SPS hardware.

Read out metadata directly in SILWorX
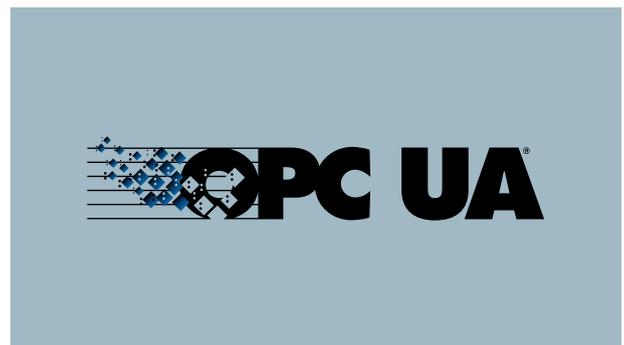
You can not only transfer pure machine data with OPC UA, but also describe it semantically using meta information. As a result, you avoid misinterpretations and can connect to various devices and systems. Moreover, this unlocks the value potential of Industry 4.0. Additional information also simplifies data analysis.

Benefits

- **Platform independent:** Systems from different manufacturers can be networked independently of the operating system.
- **Secure:** Integrated security functions including encryption and security certificates guarantee protected communication in accordance with the standards of the German Federal Office for Information Security (BSI).
- **Redundant and scalable:** Networked devices can be scaled as required and customized redundancy concepts can also be implemented. Additionally, expansion into the cloud is possible without compromising security.

Requirements

- **Hardware:** HIMA controllers need to be equipped with one or more COM modules.
- **Software:** A license key is required to activate the OPC UA server.

Smart Safety Platform

SILworX is the programming tool for HIMax, HIQuad X, and HIMatrix systems as well as the HIJunctionBox. Combined with the SafeEthernet protocol, they form the core of the HIMA Smart Safety Platform.

Technical Information

- OPC TCP acts as transport protocol with binary coding
- Data access
- Base eventing with time stamps
- Reload
- Sign and encrypt for encryption
- Information modeler with support for CSV import and export
- User-defined object types
- Local discovery server
- Application redundancy is possible

Performance

- **Clients:** 1 COM module supports 1 OPC UA server with a maximum of 4 sessions/ clients and up to 10 subscriptions.
- **Eventing:** Up to 5,000 events are recorded per system.
- **HIMax:** Maximum of 4 COM modules with activated eventing.
- **Performance:** Clients receive all variables with an update interval of 1.3 seconds, which is four times faster than conventional OPC. (Specifications are based on the following configuration: HIMax 1 X-CPU 01, 1 X-COM 01, CPU Cycle 100ms, OPC UA with 10,000 variables / 40,00 bytes and activated security; sampling interval 1s (publishing interval 10ms), all variables were changed in each cycle).