
ABB MEASUREMENT & ANALYTICS | PRODUCT DATA SHEET

eXLent® #HMI

Custody transfer automation software



State-of-the-art automation software

Pure web

- HTML5
- JavaScript
- CSS3
- SVG

Secure

- OPC UA and HTTPS
- Secure data storage
- Role-based access control
- ABB cybersecurity compliance

Reliable

- ABB product life cycle policy
- 15 year track record

Efficient

- Object-oriented engineering
- OPC UA Information Models
- Git-based version control

Cost-effective

- License based on actual displayed data only
- No limits on data points (tags) and functionality

Custody transfer features

- Secure communication with Flow-X flow computers
- Flow computer OPC UA information model
- API MPMS 21.1 and 21.2 compliant
- Long-term data storage
- Flexible reporting
- Email subscriptions

Application templates

- Metering Supervisory Control
- Lease Automatic Custody Transfer (LACT) management

Overview

eXLent #HMI is SCADA/HMI software especially made for the custody transfer of liquids and gases based on flow computers. Typical applications are gas and liquid flow metering systems and liquid loading and unloading systems.

State-of-the-art software with field-proven reliability

eXLent #HMI is based on Atvise software, the first professional SCADA/HMI software based on open web standards and OPC UA, the connectivity standard for industrial automation. Atvise is used in numerous industrial automation installations, from small-scale machine HMI's to large-scale SCADA systems with millions of data points.

Pure web technology

Cumbersome client installations and updates are no longer necessary. eXLent #HMI is based on established standards such as HTML5, CSS3, SVG Vector Graphics, JavaScript and Ethernet, making the user interface accessible from all popular Web browsers without the need for any plug-ins.

Web browsers are available device independent and available anywhere. System operation can be from any end-device, a local operator screen, a tablet nearby, a remote computer etc.

Powerful engineering tool

Configuration is done with the complementary engineering tool over Ethernet. Changes can be implemented online without during ongoing operation of the plant, e.g. the creation of data objects, the configuration of alarms or the drawing of process images.

A variety of preconfigured standard objects and panel layouts are available. Their graphics have been created with the onboard editor and therefore are completely customizable by the user. The user can also create own objects and apply the preconfigured animations to these elements.

The designed user interfaces are immediately and without any modification applicable on all target systems - regardless of screen resolution, operating system or Web browser. Refresh rates and response surpass all previous experience with Web applications and even conventional supervisory control systems.

Unique licensing model

Licensing is based on "Concurrent Connected Data Points" (CCD): this is the total number of accessed and viewed data points within all concurrent visualized displays in web browsers, that are connected to one Runtime licensed server. For example, 250 CCDs equal five concurrent users each viewing 50 data points in the opened display in the web browser.



Process interface

Protocols	<ul style="list-style-type: none"> OPC Unified Architecture (UA) Data Access, Server and Client OPC Unified Architecture (UA) Historical Access, Server and Client OPC Unified Architecture (UA) Alarms and Conditions, Server and Client OPC Unified Architecture (UA) Methods, Server and Client OPC Data Access V2.05, V3.0 Client WebMI Data Interface SNMP v1.0, 2.0c ODBC database connectivity Web services via HTTP/HTTPS
Flow-X OPC UA driver	<ul style="list-style-type: none"> OPC UA connectivity for Flow-X flow computers Based on a secure HTTPS connection with Flow-X web server Access to all Flow-X real-time data Flow-X historical data archive acquisition and long-term storage
Physical interface	Ethernet (physical type dependent on target system)
Parallel operation	Yes - Multiple protocols, multiple data sources
Number of data sources	100 (recommended maximum)
Data types	All OPC UA compliant elementary types, arrays and structures
Data mapping	Integrated - Digital, analog and character strings
Data model mapping	Yes - Either manual or automatic
Data naming	Arbitrary names - Usage of source names is possible
Source time stamping	Yes - From external OPC Server
Quality tagging	Yes - From external OPC Server
Transmission mode	Depending on protocol, Event-driven or cyclic
Refresh rate	<ul style="list-style-type: none"> Project and configuration-dependent from 100 ms Adjustable depending on protocol
Refresh suppression	Time and threshold-dependent
Connection monitoring	Yes
Access control / security	Yes - OPC UA compliant, optionally with SSL encryption
Namespace browsing	Hierarchical browsing interface at design and runtime
Simulation mode	Yes
Logging	Yes

Server

Core processes technology	C++ platform-neutral
Module interface	C++ API
Multi-thread processing	Yes
Client-side interface	Integrated web server. Either HTTP or HTTPS (recommended)
Number of process variables	1,000,000 (recommended maximum)
Number of value changes	100,000 per minute (recommended maximum)
Higher-level system interface	<ul style="list-style-type: none"> OPC UA Data Access, Historical Access, Alarms and Conditions, Methods Web services via HTTP/HTTPS
Configuration persistence	Yes - Stored in the embedded database
Process data model	<ul style="list-style-type: none"> Fully structured or object oriented Support of hierarchy and derived types OPC UA Information Model

Server

Server timestamp	Yes - In addition to source time stamp
Alarm system	OPC UA Alarms & Conditions compliant
Data persistence	Yes - Embedded database (SQL Lite, not externally accessible)
Historization	<ul style="list-style-type: none"> Process data archives Aggregate data archives Alarm log (alarm history) Event log (audit trail) Debug log (for troubleshooting)
Archiving capability	Recommended maximum: <ul style="list-style-type: none"> 50,000 historized values per minute in total 500,000 historized values per archive 10 different archives 25 partitioned files per archive
Trending	<ul style="list-style-type: none"> Real-time trending for all data (without archiving) Historical trending for data configured for historization
Trending Configuration	Fixed historization configuration at design time User configurable trend group and pen selections at runtime (persistent)
Reporting	<ul style="list-style-type: none"> Automatic and on-demand report generation Flexible configuration based on XLSX file format Report files stored in PDF and/or XLSX file format
Scripting language	JavaScript
Scripting capability	10,000 script calls per minute (recommended maximum)
User Administration	Yes - Role-based access control (privileges/rights, groups, users)
Virtualization	Standalone possible, redundancy on request

Client

Client technology	Any up-to-date and standards compliant web browser (refer to system requirements)
Number of clients	100 (recommended maximum)
Process images technology	HTML, CSS, SVG, JavaScript
Number of clients	Project, hardware and license dependent.
Vector graphics	Yes - Lossless scaling and zooming
Alarm display	Yes
History display	Yes - Accommodates a large amount of (e.g. one million) records
Recipe management display	Yes
Archive management display	Yes
Trend / Multi-trend displays	Yes - Combined real-time/historical trending, multi-axis, multi-charts
Operator Input Protocol	Yes
Operation	<ul style="list-style-type: none"> Mouse or other pointer devices Keyboard (hotkeys configurable) Touchscreen, Multitouch (support depends on specific device functionality, operating system and web browser)
Multi Language	Yes - Online language change
Character Sets	Any - Inclusive Asian sign languages, Cyrillic, etc.
Parallel Content	Yes - Anything running in a web browser: HTML, Video, Audio, Chat,...

Configuration / Engineering

Online engineering	Yes - No server restart required
Remote engineering	Yes
Multiuser engineering	Yes
Object-oriented engineering	Yes - Type (Class) / instantiated objects, inheritance of properties, graphical objects (face plates) may be a property of a data object
Version control	Yes - Import/export to Git-based version control
Transferable applications	Yes - Entire project is stored in a single database file
Undockable views	Yes
Global parameters	Yes
Data point views	Yes
Global search	Yes
Online help function	Yes
Data model editor	Yes
Process image editor	Yes
Programming editor	Yes - integrated JavaScript editor
HTML page editor	Yes - integrated HTML source editor, not required for engineering
Graphical Objects	Primitives: line, polygon, shape (any), rectangle, ellipse, etc. Widgets: label, text field, table, trend etc.
Graphic Format Support	SVG (and others compliant to W3C)
Animations	<ul style="list-style-type: none"> Changing of text content, changing of colours, switching of visibility Scaling, shifting, rotation, flashing
Configuration Storage	In embedded database
Alarm system	OPC UA Alarms & Conditions compliant (arbitrary alarm categories)
Client Interface	HTTP / HTTPS (integrated web server), Long Polling, Web sockets
Graphics adaptability	<ul style="list-style-type: none"> Shape and size adjustment, roundings, colours and colour gradients Transparency, semi-transparency, rotation, mirroring
Server Interface	OPC UA (Ethernet / TCPIP)
Import/Export	XML and CSV

Diagnosis

Process data monitor	Yes
Process data statistics	Yes
System log	Yes
Server/Client debug function	Yes

Installation

Clients	No installation required (pure web technology)
Process data statistics	Windows: Installation via executable
Engineering	Windows: Installation via executable
Configured installation	Yes - Project specific adjustments via XML
Licensing	Based on CCD (Concurrent Connected Data Points), which are simultaneously displayed data items on all connected clients

Installation

License Protection	<ul style="list-style-type: none"> Hardware dependent software key (server-side) USB dongle (server-side)
--------------------	---

System Requirements for Server

Device	<p>Generally project-dependent. At a minimum:</p> <ul style="list-style-type: none"> x86-64 CPU (Jan 2020 or later) with at least 4 cores at 2.2 GHz each 8 GB RAM 500 GB free space One network interface
Operating System	<ul style="list-style-type: none"> Windows 10 Pro (64-bit) Windows 11 Pro (64-bit) Windows Server 2022 (64-bit)

System Requirements for Engineering

Device	<p>At a minimum:</p> <ul style="list-style-type: none"> x86 or ARM-based CPU with at least 2 cores and 1.0 GHz clock speed 2 GB RAM 512 MB free space Graphic resolution at least 1280x1024 pixels
Operating System	<ul style="list-style-type: none"> Windows 10 Pro (32-bit/64-bit) Windows 10 IoT Enterprise (32-bit/64-bit) Windows 11 (64-bit) Windows Server 2022 (64-bit)
Input Devices	<ul style="list-style-type: none"> Keyboard 2-button mouse

System Requirements for Client

Device	<p>Generally project-dependent. At a minimum:</p> <ul style="list-style-type: none"> (Refer to the requirements of the web browser in-use) At least one network card Graphic resolution at least 800x480 pixels
Web browser	<ul style="list-style-type: none"> Chrome, Chromium, Firefox ESR, Firefox, Microsoft Edge, Safari Mobile
Input Devices	<ul style="list-style-type: none"> Keyboard 2-button mouse Touchscreen

Cybersecurity

Secure communication	Yes - OPC UA and HTTPS
Authentication	<ul style="list-style-type: none"> Password expiry and lockout. Server side logout after inactivity. Client certificate based on authentication. Password complexity requirements.
Secure client connectivity	Yes - HTTPS
Secure access control	Yes - RBAC (Role Based Access Control). Also used for engineering.
Secure data storage	Yes
Disc encryption	Yes
Traceability	<ul style="list-style-type: none"> Logging of all security-relevant events Log rotation

Application templates

	Metering Supervisory Control	Lease Automatic Custody Transfer (LACT)
Alarm management display	Yes	Yes
Alarm suppressing, shelving and disabling	Yes	Yes
Trend display	Yes	Yes
Real-time trending	Yes	Yes
Historical trending	Yes	Yes
Configurable trend pen sets	Yes	Yes
Reporting engine	Yes	Yes
Historical report display	Yes	Yes
Alarm log display	Yes	Yes
Event log display	Yes	Yes
Value log display	Yes	Yes
Debug log display	Yes	Yes
Legend display	Yes	Yes
System display	Yes	Yes
Archive management display	Yes	Yes
Application generation wizard	Yes	Yes
Report overview display	Yes	Yes
Valve control	Yes	
Proving operation	Yes	
Sampler control	Yes	
Batch control	Yes	
Alarm pop-up display	Yes	
Table configuration display	Yes	
Gas station display	Yes	
Gas meter run display	Yes	
Liquid station display	Yes	
Liquid meter run display	Yes	
Ufm diagnostics display	Yes	
Gas properties display	Yes	
Master meter proving display	Yes	
Compact prover display	Yes	
Prover ball display	Yes	
Proving configuration display	Yes	
Meter factor control charts	Yes	

Application templates

	Metering Supervisory Control	Lease Automatic Custody Transfer (LACT)
Loading rack display		Yes
Loading rack configuration		Yes
Truck driver configuration		Yes
Sample pot configuration		Yes
Lease configuration		Yes
Transporter configuration		Yes
Designee configuration		Yes
Customer configuration		Yes
Measurement tickets display		Yes
Emailing functionality		Yes
Mail list configuration		Yes

ABB B.V.**Measurement & Analytics**

Achtseweg Zuid 151A / Strijp-TQ Entrance 5
5651GW Eindhoven
The Netherlands
Phone: +31 40 236 9445
Mail: nl-spiritit-sales@abb.com

ABB Malaysia Sdn Bhd.**Measurement & Analytics**

Lot 608, Jalan SS 13/1K
47500 Subang Jaya
Selangor Darul Ehsan, Malaysia
Phone: +60 3 5628 4888

abb.com/midstream

ABB Inc.**Measurement & Analytics**

7051 Industrial Boulevard
Bartlesville OK 74006
United States of America
Phone: +1 800 442 3097

ABB United Arab Emirates

10th Floor, Concord Tower,
Media City, Dubai, U.A.E.

We reserve the right to make technical changes or modify the contents of this document without prior notice. With regard to purchase orders, the agreed particulars shall prevail. ABB does not accept any responsibility whatsoever for potential errors or possible lack of information in this document.

We reserve all rights in this document and in the subject matter and illustrations contained therein. Any reproduction, disclosure to third parties or utilization of its contents – in whole or in parts – is forbidden without prior written consent of ABB.

Copyright 2025 ABB.
All rights reserved.