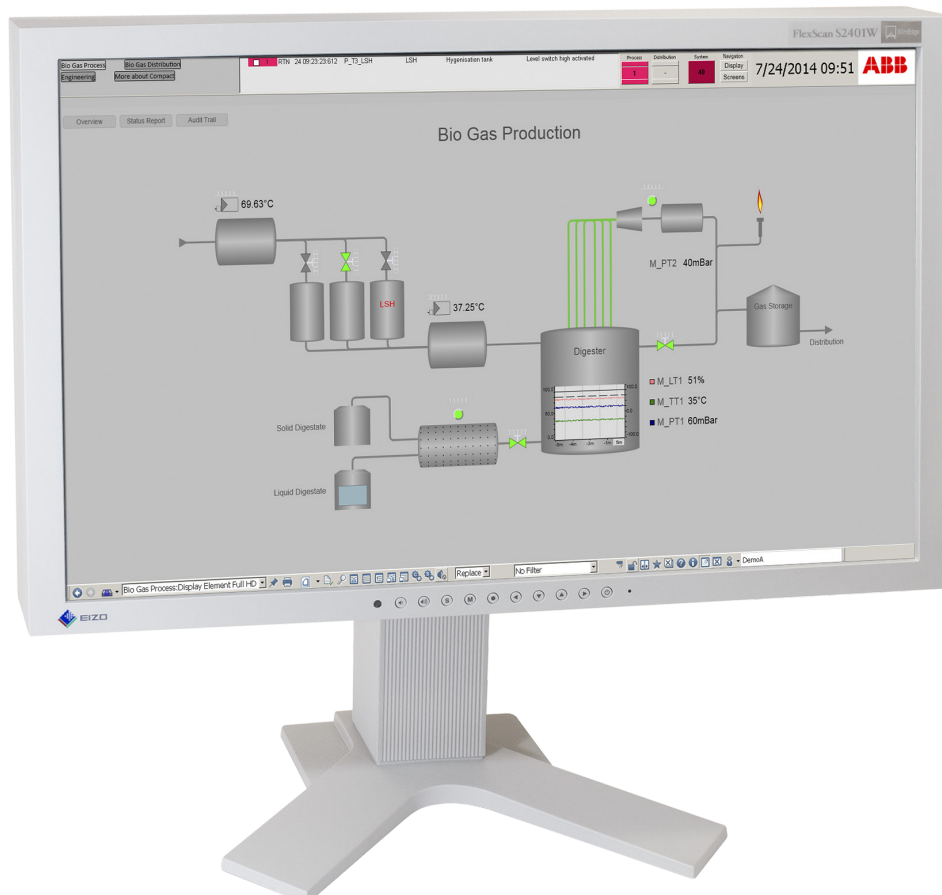


# Compact Product Suite

## Compact HMI 6.0 Overview



# Compact HMI

## A feature-rich human-machine interface



Compact HMI is an easy-to-use and fully equipped PC-based SCADA system for real-time operation of your plant. It offers the latest ergonomic design based on high performance graphics to take a full control of your process and data.

**Based on the premium technology of ABB's System 800xA DCS with its leading object oriented engineering platform, it can be used in a variety of diverse industries, ranging from a single operator workstation, 50 signals and scale up to applications with several thousand signals and workplaces.**

Designed with Microsoft Windows® standard of interaction, Compact HMI supports Windows 8.1, Windows 10 2016 LTSB, Windows Server 2012 R2 and Windows Server 2016. This provides exceptional ease of use, unmatched performance and cost savings.

Another feature is the high performance pre-fabricated, reusable graphics library that is based on the industry best practice principles to help quick creation and utilization of graphic displays.

Not only can Compact HMI directly interface to a large number of OPC-compliant controllers but also it comes with built in drivers to connect to major PLCs.

### Easy and integrated engineering

- Simplified "One-button" installation routine
- Ready to use templates and libraries for efficient engineering
- Bulk Data tool for configuring data with minimal engineering
- Instant access to process information in one environment

### Open yet secure platform

- Connectivity through OPC (DA, HDA, AE)
- OLEDB to connect to databases
- Direct link to Comli, SattBus, Modbus Serial and Modbus TCP
- Option to connect Smart Client desktops for office environment
- Enhanced security based on MS security system

### Object oriented

- Based on System 800xA Aspect Object technology
- Object-based Engineering for best re-usability

### State-of-the-art graphics

- User friendly and intuitive engineering tool
- High-performance graphics library for situation awareness
- Embedded CAD Viewer for object centric CAD drawings

### Flexible alarm management

- Alarm shelving and alarm analysis for convenient alarm monitor and analysis
- Tab navigation for alarm status for increased usability

# One click to information

**Compact HMI is designed to the Windows standard of interaction, supplemented with an information-centric object structure, to reflect the information in a plant.**

The system shows all equipment in the plant, together with associated information such as operational status, technical specifications, drawings, alarm lists, trends, faceplates, tag data sheets, reports, and more. All the information related to an object is instantly displayed by an intuitive point-and-click style. We call this feature “One Click To Information.”

Familiar Web browser functions such as Favorites, History Lists, Previous Page, Next Page, Shortcuts, Hot Buttons and Search make it easy to find just the right information in every situation.

#### **Smart Client™ enables Collaboration**

ABBs Smart Client solution gives users who lack direct access to Compact HMI a wealth of real-time process and production information directly in their office computer, including system graphics and customized KPIs.

That’s an enormous benefit for a great many people. Our Smart Client technology also ensures the highest system integrity for all data in your process.

#### **Connecting to PLCs**

PLCs are normally connected to Compact HMI through its built-in OPC client. Since the HMI system has a built-in OPC browser, finding and connecting the PLC tags and properties is a simple and fast process.

For larger configurations, the built-in Excel®-based Bulk Data Manager is recommended. This tool facilitates configuration and tuning of large amounts of data with minimal engineering effort. Compact HMI supports all standard in the market, which means any encapsulated PLC driver with an OPC interface can be connected.

In addition, Compact HMI offers serial communication by Modbus, Comli and SattBus for non-OPC-compliant controllers.



# Enhanced management and control

## Graphics

To a large extent, the operator environment consists of graphics showing live data from the PLCs. These graphics are the real-time representation of the production process. Compact HMI graphics consist of reusable elements and faceplates that are incorporated into entire display. The tool, called the Graphics Builder, included in the software facilitates easy graphics creation as well as the option of developing one's own reusable, interaction routines. A set of new high-performance HMI elements based on the best-practice principles in human-machine interfaces has been added to the graphics library in the latest version. It opens the possibility to produce high-performance graphic displays that make operators more situation-aware of the process than ever before.

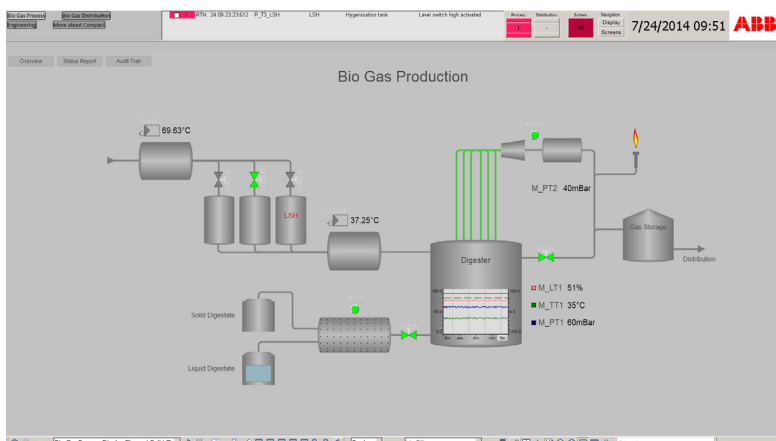
## Alarms and Events

An effective alarm system helps operators focus on important events in all situations. The new Group Alarms enable the display of a single 'grouped alarm' that represents multiple alarms reported from different sources related to a common cause in the plant. This helps the operator to focus on key issues rather than getting lost in an alarm burst.

## Integrated alarm system

To ensure that events are handled with maximum precision, pre-defined runtime filters, alarm status presentation are provided along with enhanced alarm list color configuration. The operators have the option to silence audible alarms, acknowledge all visible alarms and add alarm comments that

Live graphics, trend and alarm lists windows are essential tools for the monitoring of any industrial production process.



are stored in the event list. Alarm management is an integral part of Compact HMI for faster reaction, alarm analysis and handling, in order to lower production downtimes to a minimum and improve plant productivity and efficiency.

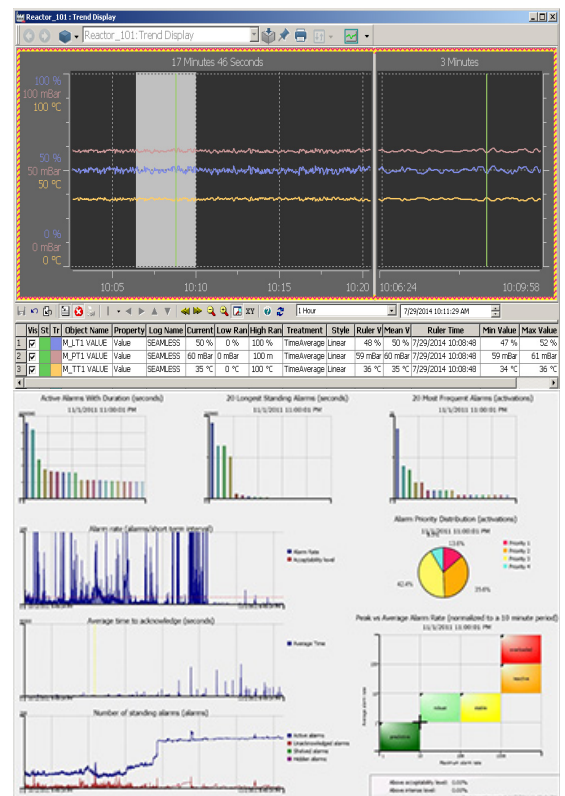
## Advanced Alarm Management

### Alarm Shelving – focus on the right things

Alarm shelving allows the operators to temporarily remove standing or nuisance alarms from the main alarm list and place it on a special shelved list for a specified time or occurrence. A shelved alarm does not appear on the main list until it is removed from the shelved list.

### Alarm Analysis – sharpen your Alarm strategy

Alarm Management provides an analysis function for operators to monitor the quality of the alarm system, helps avoiding nuisance and sharpens the alarm strategy. A set of ready-made KPI calculations is provided and displayed by the alarm analysis function graphics.



# Powerful information analysis



## **SMS and Email Messaging**

The ability of the system to generate email and SMS messages when a supervisor's or maintenance engineer's attention is required facilitates unattended operation with little or no loss of operational safety.

## **Trend and History**

The built-in historical data storage capabilities of Compact HMI make it easy to put into storage any information obtained from the controllers of the system or from elsewhere, for future analysis. Advanced capabilities such as zooming, panning, X/Y plotting and spreadsheet integration make it easy to identify time-based variations and intervariable dependencies.

## **Real-time Database**

A real-time database groups discrete controller signals into object data records, thereby refining raw data into meaningful information. By adding scaling, ranges, units of measure and alarm handling, among others, Compact HMI adds synergy to discrete and disparate PLC data.

All data items of a record are available for viewing/adjustment from a single screen form, thereby supporting the "One Click to Information" feature of the Compact HMI system.

## **Calculations**

When new values (eg, key performance indicators) need to be created on the basis of existing data, Compact HMI's calculation function comes into play. With it, an operator can create calculations by combining values from one or more PLCs with offline values and operator inputs.

## **Document Handling**

Compact HMI is perfect for storing all kinds of documentation on different plant components — from the smallest nuts and bolts, to entire processing sections. For instance, to call up a document on servicing instructions for an electric motor, one needs to only right-click on the object on the screen and the required document is displayed. Any number of documents can be attached to an object.

# Robust, Reliable and Scalable

## Audit Trails

Audit trails of operator actions are often required in regulated markets to ensure compliance and verification of product properties. To support this, Compact HMI tags each action with date, time, description, and user identity.

## User Log-over

This function allows log-over from one user to another on the fly without having to log in/ out of Windows. Consequently, an incoming shift operator can take over from an outgoing with a corresponding change-over of security and audit-trail settings.

## Scheduled Backup

Compact HMI comes with built-in functionality for scheduled backup onto external media. All the user needs to do is decide on interval time.

## Scalability

Compact HMI encourages starting small, such as a single PC for both engineering and operation. By adding clients, the system can be expanded to nine operator workplace clients and one server workplace, with both operator and engineering functionality. Additional workplaces can be obtained

by installing additional Compact HMI systems. Configuration data can easily be moved from one system to another.

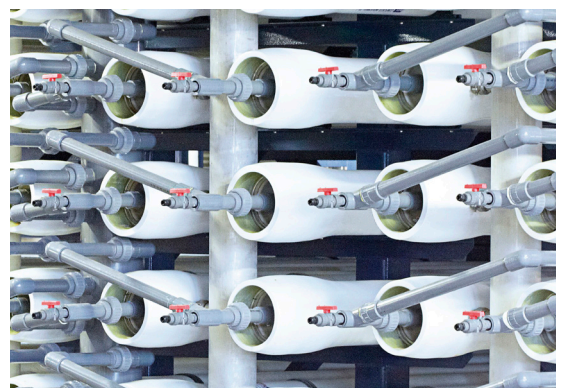
## Redundancy

A level of redundancy can be achieved by installing two or more Compact HMI stations in parallel. Configuration data can easily be moved between them to ensure identical setups.

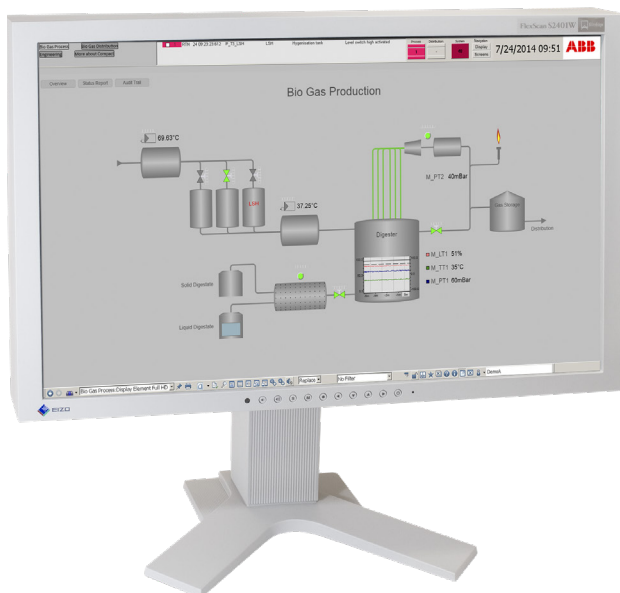
## Security

Making all information of the enterprise available to all who need it — when they need it — is an attractive idea. But of course, this “available to all” approach must be traded off against the risk of information ending up in the wrong hands and inexperienced operators causing accidents or production losses.

Compact HMI offers a security solution that makes it possible to define the authority of individuals and groups of people, both cursorily and down to individual commands to individual objects.



# Compact HMI Version 6.0 specification



## Hardware requirements

Recommended performance and capacity of the PCs for different node types can be found in the Third Party HW Products Verified for ABB Ability™ System 800xA: <http://new.abb.com/control-systems/system-800xa/800xa-dcs/system/certified-3rd-party-products>

HMI Server	HMI Client
<b>Supported Configurations</b>	<b>Client workplace sizes</b>
1 Server Workplace Operation and Engineering	≤ 200 Signals
Integrated Smart Client Server	≤ 500 Signals
<b>Server Workplace Size Option Pack</b>	≤ 1 000 Signals
50 Signals (20 Tags)	≤ 2 500 Signals
500 Signals (200 Tags)	≤ 5 000 Signals
2 500 Signals (1 000 Tags)	≤ 10 000 Signals
	<b>Smart Client Configuration</b>
	1-10 Smart Client Workplaces or Remote Workplaces

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