



Compact HMI 800 5.1 Overview

A feature-rich human-machine interface



Compact HMI 800 is a complete product that scales from the very low end applications with 50 signals and one HMI workplace to medium range applications with up to 10 HMI workplaces and 5000 signals. Compact HMI 800 includes the software required to configure an efficient HMI for any control application. Compact HMI 800 runs on Microsoft Windows 7 and Windows 2008 Server (32-bit). New for this version is that Terminal Server installation is supported for use with Thin Clients.

The Alarm Management option is also new and is performing continuous calculations of metrics according to standards like ISA 18.2 and EEMUA 191 so that the each alarm can alert, inform and guide and not be a nuisance to the operator.

Operators appreciate the ease with which they can access the information they need from time to time, how easy it is to go from overview to detail and back and how the system itself, automatically, alerts them when their attention is required.

While scheduled backups to external disks ensure the highest system integrity.

Features and Benefits

- A full-featured HMI: Including dynamic graphics, event and alarm handling, graphic trending, historical data storage, reporting, faceplates, etc.
- Open to any controllers: Supports the OPC standard, meaning that it is directly interfaceable to the large and growing number of OPC-compliant controllers. Drivers are also available for the most popular, non-OPC-compliant PLCs.
- Easy to Install: Delivered on a DVD.
- Easy to Engineer: Delivered preconfigured and ready for plant- and process-specific adaptation.
- Easy to Operate: Intuitive point-and-click-style operation, to the Windows standard, from overview to detail and back.
- Easy to Maintain: Comes with built-in, automatic, back-up functionality.

One click to information

One click to information. That is why Compact HMI 800 is designed to the Windows standard of interaction, supplemented with an information-centric object structure, reflecting the information in the factory or plant.

Equipment in the plant is available in the system with all its associated information, be it operational status information, technical specifications, drawings, alarm lists, trends, face-plates, tag data sheets, reports, etc. All this information is instantly available, wherever the object is shown. We call this feature "One Click To Information".

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

Connecting to PLCs

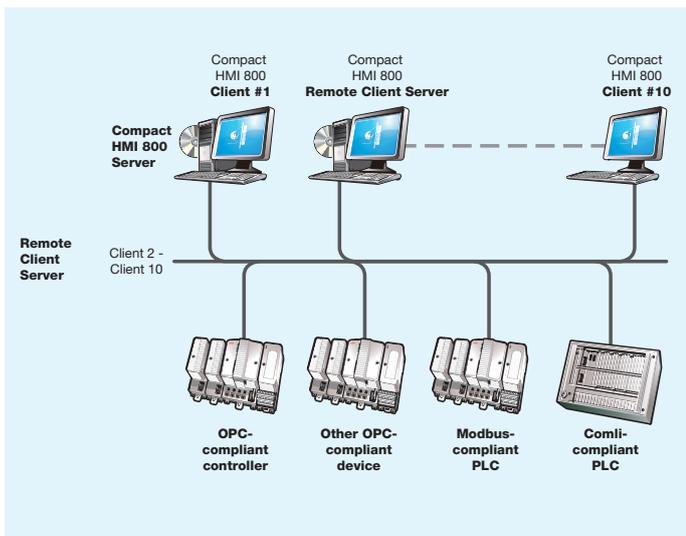
PLC's are normally connected to Compact HMI 800 through its built-in OPC client. Since the HMI system has a built-in OPC browser, finding and connecting the PLC tags and properties is a simple and fast process.

For larger configurations however, the built-in, Excel-based, Bulk Data Manager is recommended for efficiency's sake. This tool facilitates configuration and tuning of large amounts of data with a minimal engineering effort. Compact HMI 800 supports all OPC servers on the market, meaning that any encapsulated PLC driver with an OPC interface can be connected.

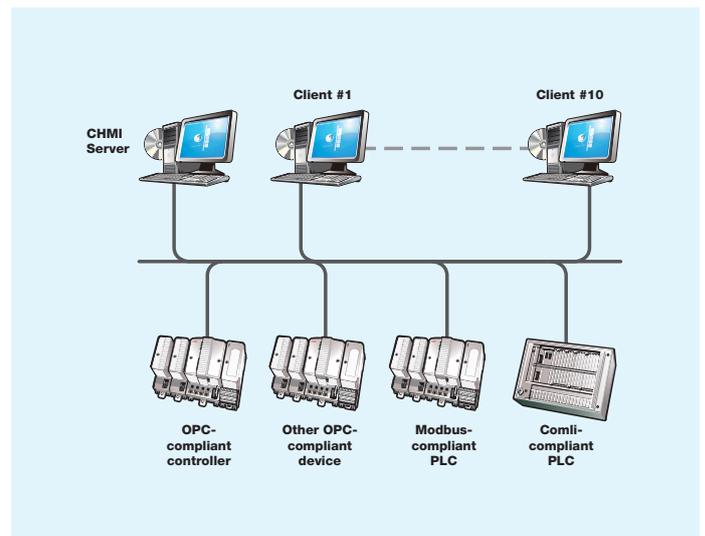
Connection to ABB's AC 800M controllers is particularly easy thanks to the inclusion of the Compact Control Builder.

In addition, Compact HMI 800 offers serial communication by Modbus, Comli and SattBus for non-OPC-compliant controllers.

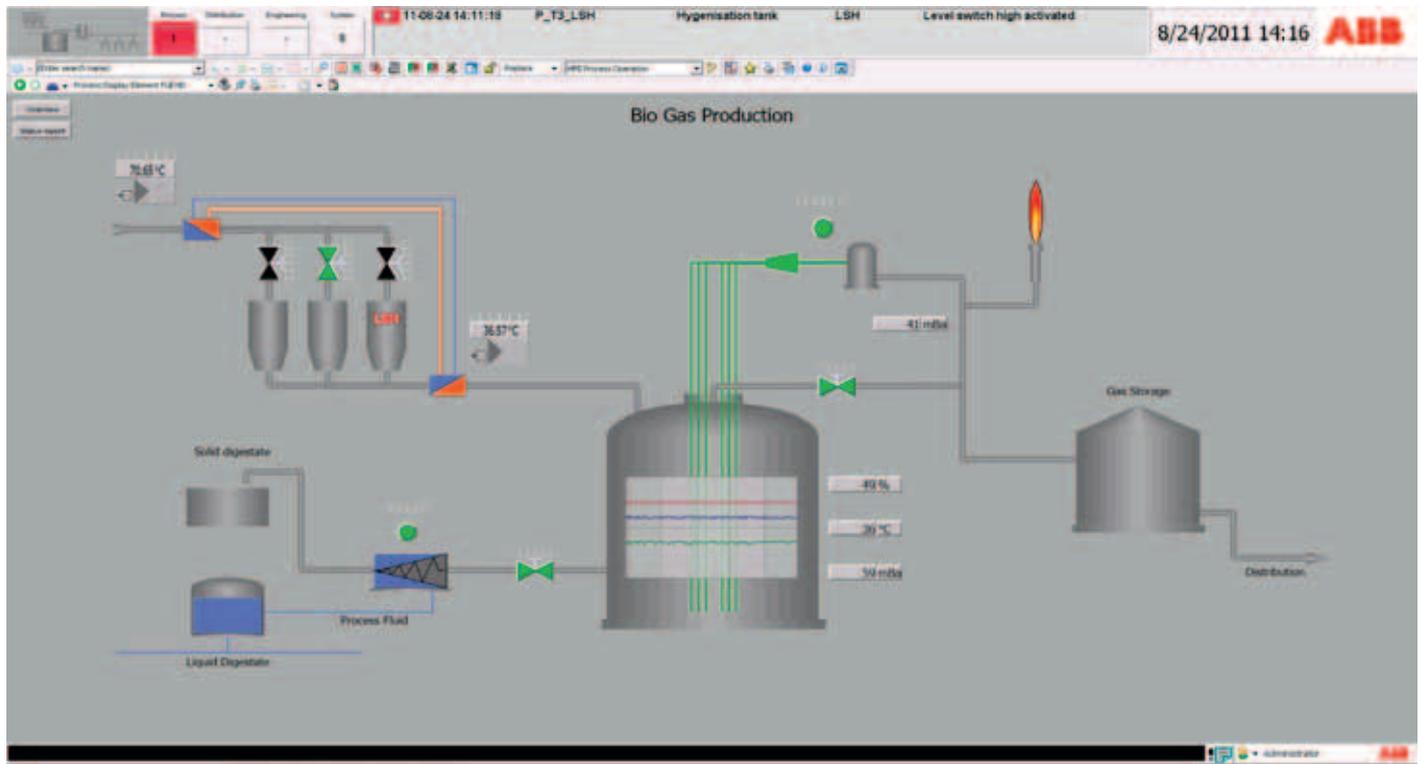
Configuration with no software installed on clients.



Configuration with software installed on clients.



Improved HMI functionality



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

Graphics

To a large extent, the operator environment consists of graphics showing live data from the PLC's, reflecting what takes place in the production process in real time.

The graphics are built in a structured way, consisting of re-usable graphic elements and faceplates, which are then incorporated into entire graphic displays. The tool, called Graphics Builder, combines easy graphics creation with the power of developing one's own, re-usable, interaction routines in that language.

Effective alarm handling for fast corrective action

An effective alarm system enables operators to focus on important events and to perform effectively in all situations.

To access and act on alarm information, user-interfaces need to be efficient, proactive and user-friendly, especially with fewer operators controlling larger process areas. With Compact HMI 800, operator attention is always focused on meaningful events and actions.

Alarm philosophy fully integrated in Compact HMI 800

ABB's alarm management is fully integrated in Compact HMI 800, which dramatically improves navigation, analysis and handling, and saves the vast costs of running and maintaining a non-integrated system. Without a separate alarm system to distract them, operators can devote more time to maintaining operational efficiency and optimizing processes.

Alarm Management

Alarm shelving allows the operators to temporarily remove standing or nuisance alarms from the main alarm list and places it on the shelf list for a specified time. A shelved alarm does not reappear on the main list until it is removed from the shelf. There are two modes available to shelve an alarm:

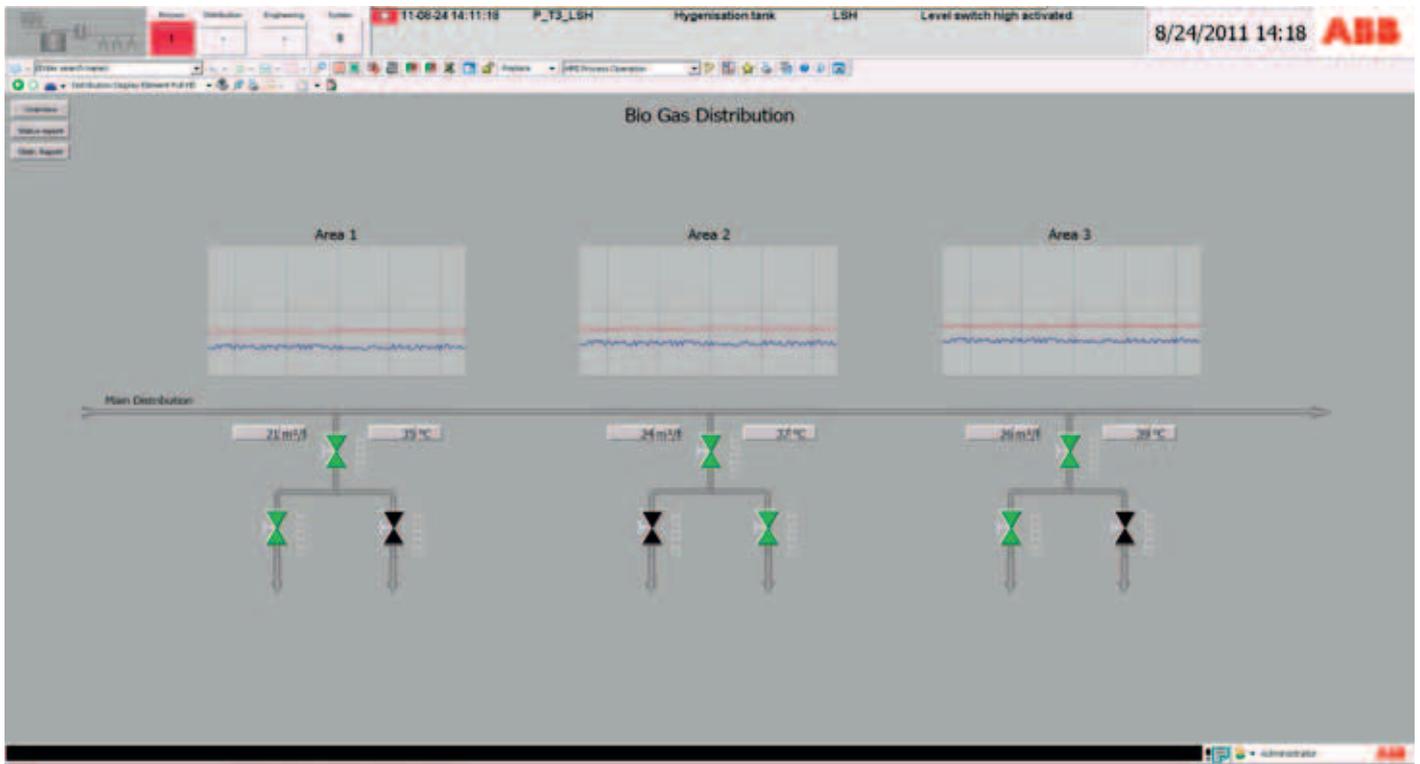
- Standard shelving (Manual).
- One-shot shelving.

The Alarm Analysis function is an effective alarm management function that allows the operators to monitor the quality of the alarm system and help analyze problems in the alarm system.

The key feature of the Alarm Analysis function is the easy and precise configuration. By pointing to an Alarm & Event list, the Alarm Analysis function calculates the KPIs accurately for this list without the need to setup complex and error-prone filter configurations. The graphic elements display the values of the KPIs provided by the Alarm Analysis functions.

SMS and E-mail Messaging

The ability of the system to generate e-mail 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 800 make it easy to put any information, obtained from the controllers of the system or from elsewhere, into storage for future analysis.

Advanced capabilities, such as zooming, panning, X/Y plotting and spread-sheet 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 far more meaningful information. By adding scaling, ranges, units of measure, alarm handling, etc., Compact HMI 800 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 system.

Calculations

Whenever the need to create new values arises, e.g. key performance indicators, on the basis of existing data, the calculation function of Compact HMI 800 is of great help. With it one can create calculations by combining values from one or more PLC's with offline values and operator inputs into new valuable information.

Document Handling

Compact HMI 800 is perfect for storing all kinds of documentation on the different plant components, from the smallest nuts and bolts right up to entire processing sections. Consequently, finding, say, the servicing instructions of an electric motor when the need arises is as easy as right-clicking on the item of interest on screen and calling up the required document as an aspect. Any number of documents can be attached to every object.

Audit Trails

Audit trails of operator actions taken are often called for in government-controlled production processes for the sake of protecting the environment, and verifying product properties. Consequently, Compact HMI 800 is able to tag each action with date, time, description, and user identity.

User Switching

This function allows change-over from one user to another without loss of plant contact and without having to log out of and into Windows. Consequently, an incoming shift operator can take over from an outgoing one “in flight”, naturally with a corresponding change-over of security and audit-trail settings.

Scheduled Backup

Compact HMI 800 comes with built-in functionality for scheduled backup-taking onto external media. All the user needs to do is decide on interval time.

Scalability

Compact HMI 800 encourages starting small, perhaps with a single PC for both engineering and operation. By adding clients, the system can be expanded to five operator workplace clients and one server workplace with both operator and engineering functionality. Additional workplaces can be obtained by installing additional Compact HMI 800 systems. Configuration data can easily be moved from one system to another.

Redundancy

System redundancy can be achieved by installing two or more Compact HMI 800 stations in parallel. Configuration data can easily be moved between them to ensure identity in set-ups.

Security

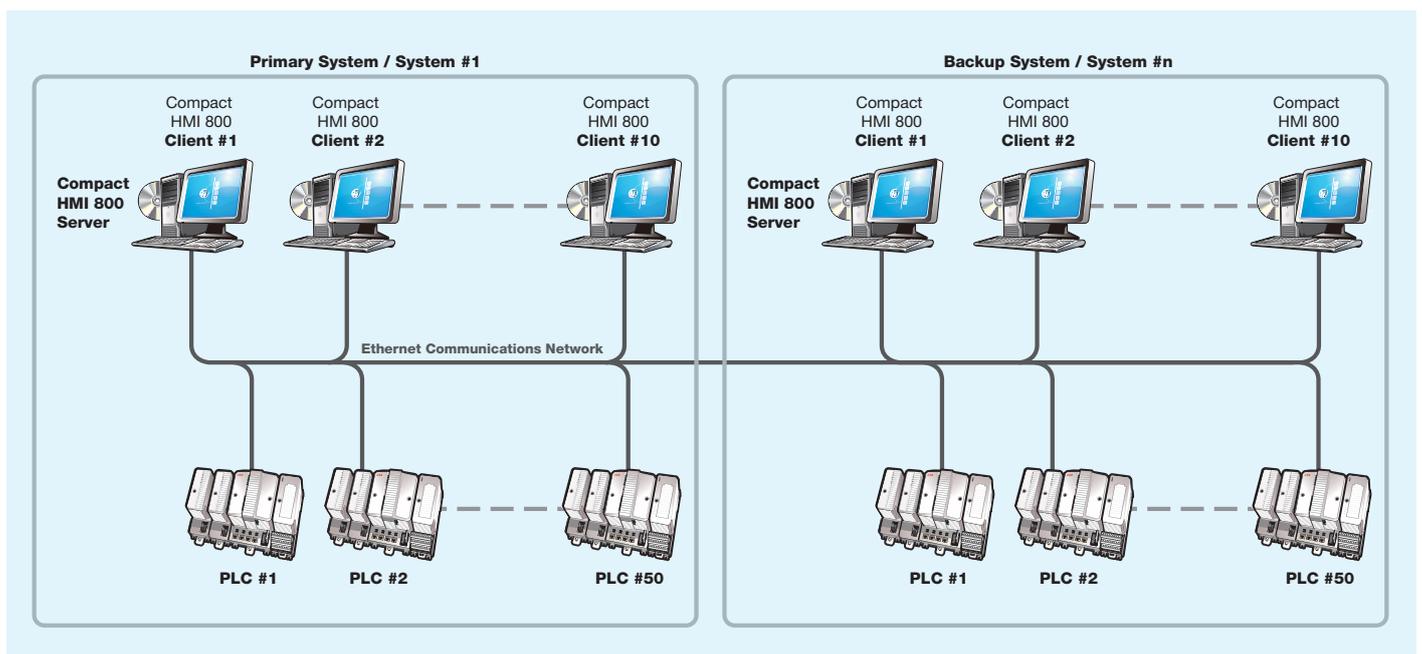
Making all information of the enterprise available to all who need it – when they need it – is an attractive idea. But of course, this available-to-all approach must be traded off against the risk of information ending up in the wrong hands and of inexperienced operators causing accidents or production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

This is why Compact HMI 800 offers a security solution making it possible to define the authority of both individuals and groups of people, both cursorily and down to individual commands to individual objects.

Audit trails make it possible to analyze past event sequences in terms of which actions were taken, when, and by whom.

Delivered complete

Compact HMI 800 is delivered on a DVD. Installation and commissioning times on site can be reduced to a minimum.



By duplication, Compact HMI 800 systems can cope with thousands of I/O points – or be configured for redundancy.

Compact HMI 800 5.1 specification

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Compact HMI 800 is a fully-equipped PC-based HMI for top-of-the-line HMI or SCADA applications. Operator functions include Graphics, Faceplates, Alarm/Events, Trending, History/Reporting, plus messaging, calculations, system supervision, SCADA real-time database and document handling.

Its Basic PLC-type Object Library comprises a full range ready-to-use graphic presentation components for efficient application engineering. Compact HMI 800 is delivered on a DVD to be installed on a standard PC with Windows 7 or 2008 server.



HMI Server

Hardware requirements

Standard PC with Windows 7 or 2008 Server (32 bit)

1.5 GHz multicore CPU

3 GB RAM

36 GB HD (SAS)

Graphics card with 512 MB memory

Supported Configurations

1 Server Workplace

Operation and Engineering

Server Workplace Size

Option Pack

50 Signals (20 Tags)

500 Signals (200 Tags)

2500 Signals (1000 Tags)

HMI Client

Hardware requirements

Standard PC with Windows 7 and Office 2010

1.5 GHz multicore CPU

3 GB RAM

36 GB HD (SAS or SATA)

Graphics card with 512 MB memory

Supported Configurations

1-9 Client Workplaces or Remote Workplaces

Client Workplace Size

≤ 200 Signals

≤ 500 Signals

≤ 1000 Signals

≤ 2500 Signals

≤ 5000 Signals

≤ 10 000 Signals

Contact us

ABB AB

Control Technologies

Västerås, Sweden

Phone: +46 (0) 21 32 50 00

E-mail: processautomation@se.abb.com

www.abb.com/controlsystems

ABB Automation GmbH

Control Technologies

Mannheim, Germany

Phone: +49 1805 26 67 76

E-mail:

marketing.control-products@de.abb.com

www.abb.de/controlsystems

ABB S.P.A.

Control Technologies

Sesto San Giovanni (MI), Italy

Phone: +39 02 24147 555

E-mail: controlsystems@it.abb.com

www.abb.it/controlsystems

ABB Inc.

Control Technologies

Wickliffe, Ohio, USA

Phone: +1 440 585 8500

E-mail: industrialitsolutions@us.abb.com

www.abb.com/controlsystems

ABB Pte Ltd

Control Technologies

Singapore

Phone: +65 6776 5711

E-mail: processautomation@sg.abb.com

www.abb.com/controlsystems

ABB Automation LLC

Control Technologies

Abu Dhabi, United Arab Emirates

Phone: +971 (0) 2 4938 000

E-mail: processautomation@ae.abb.com

www.abb.com/controlsystems

ABB China Ltd

Control Technologies

Beijing, China

Phone: +86 (0) 10 84566688-2193

www.abb.com/controlsystems

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