

# Industrial<sup>IT</sup> process control system Freelance 800F

The compact solution



**ABB**

# Freelance 800F – the basis for your success



Pursuing the basic idea of providing increased automation at a lower cost, ABB has redefined the class of scalable control systems, therefore coming to be viewed by many as a trend-setter in this industry. Today, people are impressed by the global success story of Freelance 800F, with more than ten thousand applications covering all sectors of industry.

In developing the AC 800F controller, ABB has taken a further step forwards, connecting traditional process control technology with company management. The objective of manufacturing companies in this context is clearly defined. They want to make sure that the necessary goods and information are in the right place at the right time – Just in Time.





## A fully integrated system

### Innovation with a tradition

In the past, automation was carried out at just three levels:

- At field-actuator or sensor-actuator level with signal recording and signal conditioning
- At open-loop control level with multitasking and real-time-compliant open-loop controls
- At operation and control level for process visualization

In order to meet today's tougher market demands, all production information needs to be available in the company across all levels – not to mention in real time.

In the form of Industrial IT, ABB has met this technical requirement and added the following areas to the application options:

- Information management
- Production planning and manufacturing execution (MES)
- Resource management
- and Asset Optimization

### Easy Engineering

ABB's Freelance 800F process control system combines easy engineering with an open, modern system architecture. In detail, this means:

- Field devices completely integrated into the control system engineering
- Only one tool for engineering, commissioning, and diagnosis
- Central access to all field information
- Potential savings in engineering, commissioning, testing, service, and maintenance
- Assembly close to the field: reduction of field wiring and space requirements

### AC 800F – process station with fieldbus management

The AC 800F controller distributes process and diagnostic data from four fieldbus gateways. If required, it can also work with various fieldbus types – and this is, of course, in addition to the usual tasks of a "conventional" controller.

Thanks to its compact and sturdy design, the AC 800F is suitable both for installation in the control room and for use in junction boxes directly in the field.

# Freedom of choice



## With flexibility at field level

For the field level, ABB offers an extensive selection of devices that are fine-tuned to meet the needs of the relevant area of use. Thanks to fieldbus standards, a connection to the controller can be easily established. Remote I/Os can be connected to AC 800F via Profibus. ABB provides the S800 or S900 Remote I/O systems for connecting a large number of field instrumentation.

## ... in the choice of fieldbus types

In accordance with the concept of plug & produce, exchangeable fieldbus modules make it easier to implement quick adjustments. Freelance 800F allows the integration of all common fieldbuses – leaving the user to select any they wish. The following are supported:

- PROFIBUS
- DPV1/PA
- MODBUS
- CAN for Freelance Rack I/O
- FOUNDATION Fieldbus HSE/H1
- HART via remote I/O
- Telecontrol protocol IEC870-5-101

Various types of fieldbus can even be operated in parallel in a single AC 800F controller. This proves to be a real advantage if specific fieldbus type is to be used in each case.

## ... in the choice of time for the technology changeover

The freedom of choice is not restricted to the fieldbus type. You are also free to choose the point in time for the technology changeover – from traditional 20mA instrumentation to digital fieldbus technology.

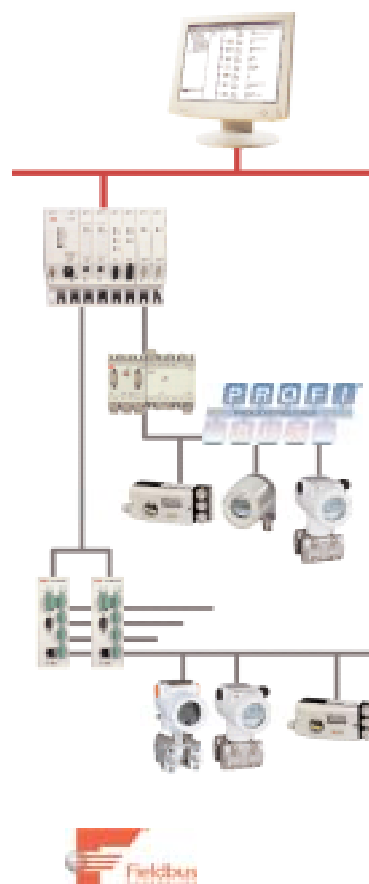
If you operate conventional I/O modules in parallel with fieldbus devices, you can begin by gaining experience with minor extensions on a fieldbus basis and then proceed – gradually – to replace legacy devices with modern fieldbus technology.

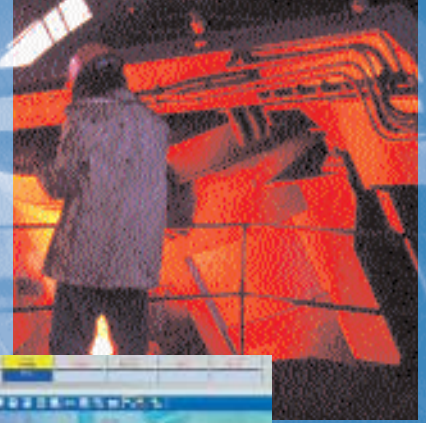
## All this coupled with engineering that is everything you could ask for

Freelance 800F allows you to enjoy consistent configuration, commissioning, and diagnostics – from graphics to the field device – using just one engineering tool. All five programming languages specified in IEC 61131-3 are available.

Users especially appreciate how quickly they are able to familiarize themselves with the tool. Supported by a uniform data basis throughout the system as well as extensive reference functions, Control Builder F enables to conduct fieldbus-specific configuration quickly and easily – including:

- Configuring and parameterizing the field devices and remote I/O
- Setting the bus topology and parameters such as transmission rates and addresses





The task of configuring and displaying the field devices is user-friendly because using FDT/DTM eliminates the time-consuming chore of integrating device master data files. Graphical parameterization dialogs supplied by the device manufacturers – which are referred to as Device Type Managers (DTMs) and are incorporated in a similar manner to printer drivers in Windows – transmit all specific signals and parameters to the control system's engineering tool. The master is simultaneously configured in the process. These DTMs are already available for numerous common field devices.

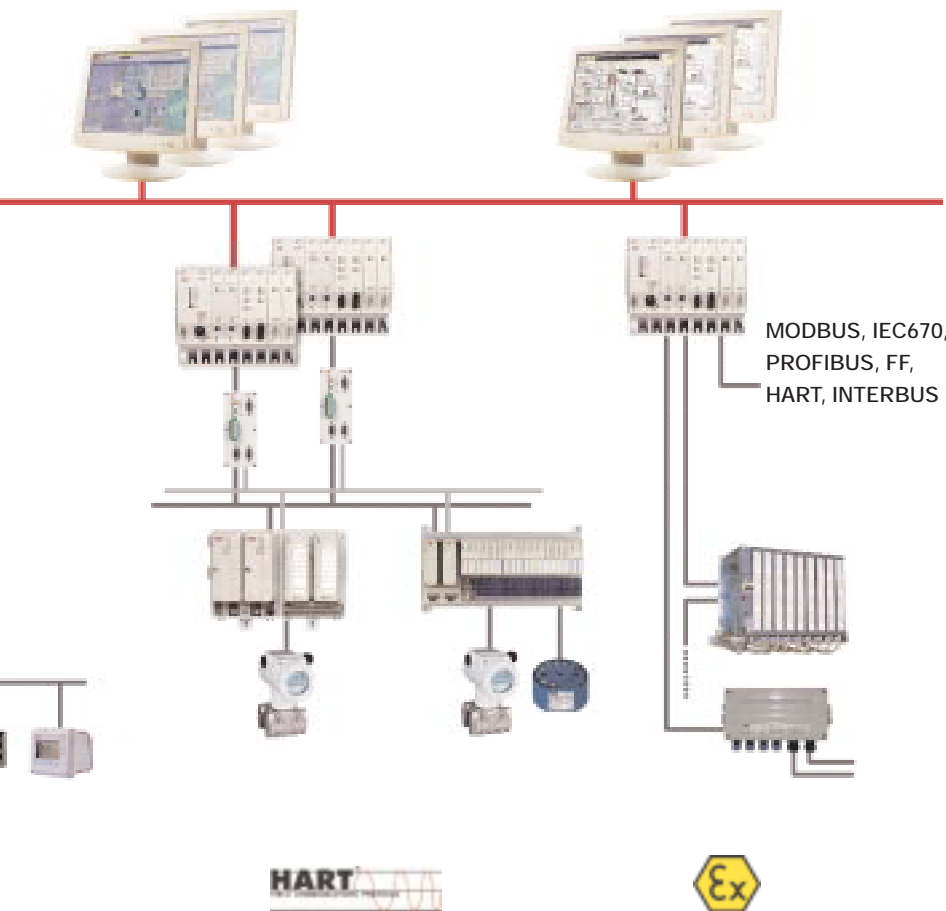
### Also at the control Operation level, the user can choose

Two solutions are suitable here, depending on requirements and on the situation in the company:

**1. DigiVis** meets all standard requirements relating to process visualization under Windows XP at an attractive price. Amongst other things, DigiVis offers the following visualization options: flow diagrams – optionally with 3D effects – easily comprehensible faceplates for operator intervention, trend automatically generated system display for hardware diagnostics, shift logs, event logs, and data archiving. DigiVis configuration is fully integrated into Control Builder F.

**2. Process Portal** for high demands offers a client-server architecture with server redundancy. It links various control systems using the appropriate real-time data server in each case. This greatly facilitates the work of the operator as the various control systems have a uniform look and feel.

In addition, up-to-the-minute Web browser technology allows for incorporate third-party applications, while using the optional Batch package also allows users to employ the recipe method based on S88.





# Enduring value – in the long term



## Something that endures

It is certainly an advantage if you can build on something that has already been proven and tested. ABB's Freelance 800F is an automation solution that makes things easier right from the beginning.

For example, existing Freelance 2000 systems can be integrated seamlessly into new Freelance 800F systems. As a result of the combination of conventional process stations (rack-based) and modern AC 800F controllers in a single system, migration can easily be implemented.

## Something reassuring

The technology has proven its worth in industrial use over several years and meets the highest of requirements regarding availability. The hardware can be structured redundantly at all levels – including the redundant fieldbus device gateways, network redundancy, controller redundancy and, last but not least, redundant operator interfaces.

## Something that grows over time

From small units with 20 signals to major systems with more than 10,000 signals: Freelance 800F grows with your plant and can be easily extended to meet requirements at any time.

## Something that allows excellent communication

You can use the following as required: OPC, Ethernet, TCP/IP, PROFIBUS, FOUNDATION Fieldbus, Modbus, HART, call or SMS in the event of alarm, remote control function from

your home, voice output for instructions in the event of an alarm, video integration, or Internet connection.

## Something that is recognized by authorities

With a view to meeting the requirements of regulatory authorities such as the American FDA (Food and Drug Administration) or the EFSA (European Food Safety Authority), Freelance 800F provides a series of features that facilitate the validation procedure.

Examples include:

- Encrypted log and trend data
- Audit trail functions
- Access rights and user administration (security lock)

## Something that makes the most of equipment

If companies want to guarantee their ability to operate in the long term, they need information about the availability and degree of wear and tear of their equipment.

All of the information necessary for this is available in the control system and the associated databases. In the case of some of our customers, this data provided proof that investments, which appeared to be essential, were in fact unnecessary and the effort could be avoided. Freelance 800F allows to utilize modern asset management methods, while asset optimization allows process analysis with a view to efficient maintenance and optimization – one objective of which is to make better use of capacity.



## Comprehensive customer service ...

### ... goes without saying

Service signifies a profitable investment in continually maximizing and optimizing the availability, performance, quality, and security of a plant.

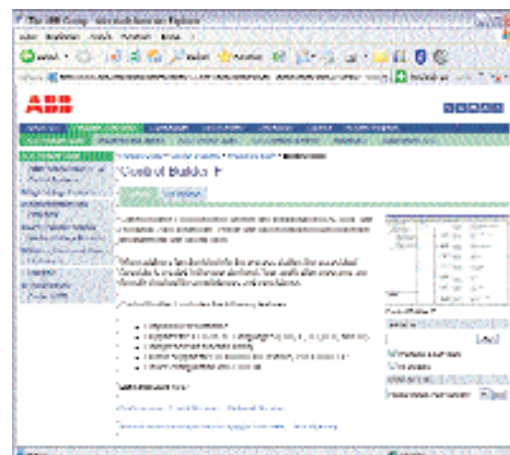
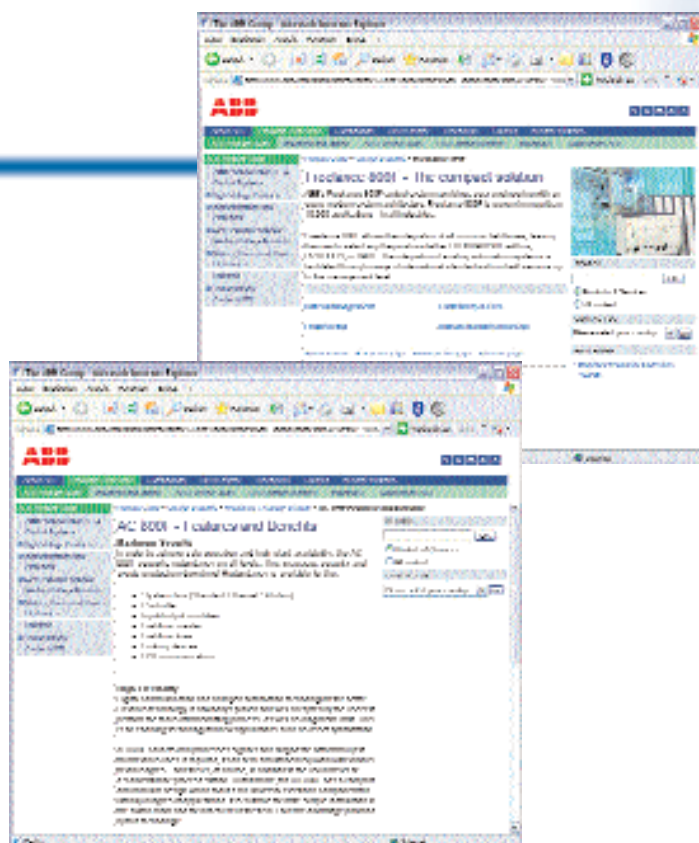
By structuring our organization into the following four areas:

- Customer Support Services
- Training
- Spare Parts & Logistics, Repair Shops
- Process, Application & Consulting Services

and through the resulting specialization of our employees, we guarantee maximum competence for each task we perform. Whether it's more traditional service support such as commissioning and maintenance or individual consulting services – the result is efficient and measurable customer benefit.

Our comprehensive Life Cycle Services enable us to increase the value of your plant over its entire lifetime. The conventional, reactive service can reduce production downtimes, while the use of new technologies offers an increased number of capabilities for preventive service measures to identify and avoid cost-intensive faults at an early stage. Proactive service, such as asset management or ongoing modernization, increases the value of our customers' plants and gives them a distinct competitive edge.

Are you interested? Then get in touch with us to obtain more information about Freelance 800F and the associated components.



For additional information, please visit our Web pages at:

[www.abb.com/controlsystems](http://www.abb.com/controlsystems)



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3BDD013090 en A 11.2005

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