Freelance
Distributed Control System
System description



AC 800F uses the fieldbus modules to collect and process real-time and diagnostic data. Up to four fieldbus modules can be mounted into one AC 800F. The fieldbus modules have the following tasks and characteristics:

- Electrical isolation between the process and the Controller
- Status LEDs for each module
- Independent fault detection and fault signaling
- Connection of the fieldbus segments and subnets

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Details of the fieldbus modules

Type	Channels	Function	Modules per controller
CAN module	3	Connection of up to 5 Freelance I/O racks	1
Serial module	2	RS232/RS422/RS485 configurable for MODBUS, IEC 60870-5-101 telecontrol protocol	4
PROFIBUS module	1	Full-value PROFIBUS DPV1 Master	4
FF-HSE module	1	For the connection of up to 10 LD 800HSE Linking Devices with 10/100 MBaud autosense twisted pair connection	4

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Ethernet module for the system bus

Type	Channels	Function
Ethernet module EI 813F	1	twisted pair connection 10 base T for connection to hubs or switches

Mechanical design of AC 800F
The AC 800F front panel connection technique makes it exceptionally easy to assemble and to service.

Mounting on the wall can be achieved very easily. All AC 800F modules are inserted into slots from the front and secured in position with screws. The modules are activated using a lock switch, which conceals the upper screw opening. The lock switch must be opened to reach the upper screw opening.

All modules are surrounded by a metal housing, which gives them optimum mechanical and electrical protection.

All housing materials used are simply screwed together, allowing them to be separated for future recycling. Last but not least, Freelance has taken environmental protection into account by using a minimal amount of paint.

The controllers
AC 700F

The AC 700F controller, as a member of Freelance, has numerous advantages over a PLC based solution: The distributed process control system simplifies engineering, commissioning and maintenance of the automation system.

Visualization is directly incorporated into the engineering, making configuration particularly straightforward. Small or distributed plant components can be implemented cost effectively by using AC 700F. The competitive advantage is clear: the same engineering, operation and maintenance method for all plant components hand in hand with the well-known ease of use of Freelance.

The AC 700F hardware
AC 700F comes with a modular design. The base elements are different types of terminal units, for the CPU module and for S700 I/O modules. Both, screw type and spring type terminal units are available.

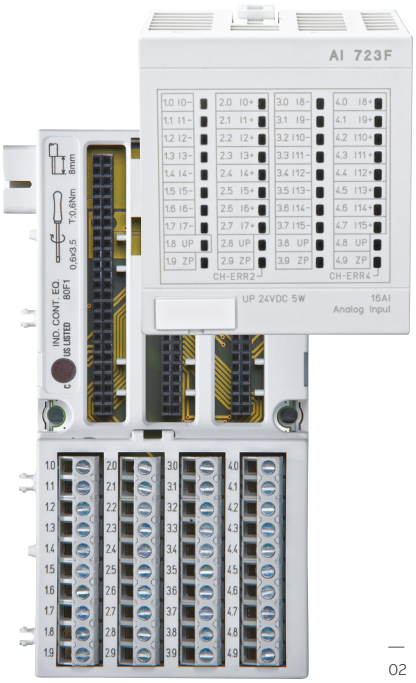
The modules can be easily plugged to the terminal units and then terminal units can be plugged one to the other. The entire controller and the I/O modules are then mounted on a DIN rail.

The CPU and the local S700 I/O modules communicate very fast. I/O scan times of 2 ms are possible. Short circuit and line break detection is realized for each channel. Certificates according to CE, UL and GL enables AC 700F to be used in a wide variety of applications. S700 I/O can be connected directly to the controller, or remote via PROFIBUS. See “S700 I/O Modules“ on page 20 for details.

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01 AC 700 CPU plugged on terminal unit
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02 S700 I/O module plugged on terminal unit



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