Industrial^{IT} System 800xA
AC 870P Controller

ControlIT

Data Sheet

The AC 870P controller is a member of the Extended Automation System 800xA family. With this compact and DIN rail mounted device customers receive the latest control technology perfected for wall-mounted or cabinet installation. Without requiring additional configuration, the AC 870P inherent redundancy design concepts for power supply, communication, and I/O provide users with the highest level of availability. The assembly consists of a Main CPU-housing and connectable extension housings. A maximum of two extension houses are possible. In this case 12 slots are available.

The CPU module PM 875 uses a 32 bit processor for maximum computing power and modular scalability. The integrated redundant PROFIBUS interface provides connectivity to ABBs I/O families S800 and S900 and to other PROFIBUS devices. HART communication is system integrated, including configuration and diagnostic through the control network.
The AC 870P controller is fully compatible to former Melody solutions, thus naturally allowing reuse of the comprehensive portfolio of I/O modules and communication interfaces. It seamlessly integrates into the control network.

A fully equipped assembly system contains PM 875, CCF 10-P Modbus interface, local I/0 and CCR 70-P. The CCR 70-P works as repeater for control system buses with inherent capability for remote communication. The network is easy to handle and does not need any routing configuration. A complete AC 870P within two extension housings can accommodate a redundant pair of PM 875's and an additional eight I/O modules. Optionally, ten I/O modules and two Fnet repeaters can be installed for a complete remote I/O solution.

PM 875 Specifications	
CPU	Intel Pentium Mobile, 32 bit with floating point unit
EEPROM	1 Mbit, Boot BIOS
Clock frequence	333 MHz
Flash Memory	32 MByte, operating system, firmware and non-volatile data
SDRAM	64 MByte, main memory
SRAM	6 KByte, battery-buffered for production and operating data
No. of application task	16
Application cycle time per task	between 16 ms ... 2900 h
On Board Interfaces	
Onet	serial, 100/10 Mbit/s (auto sense) via RJ45 socket on the front panel
	10BaseT (RJ45)
	physical connection based on Ethernet IEEE 802.3
RL	serial, 10 Mbit/s via RJ45 socket on the front panel
	10BaseT (RJ45)
	physical connection based on Ethernet IEEE 802.3
	Crossover patch cable (NT 031) required between redundant PM 875.
Cnet (C)/AB0	serial, 1 MBd
	redundant implementation
	accessible through the system plug in the rear
Fnet	serial, 2 MBd
	redundant implementation
	accessible through the system plug in the rear
Fnet capacity	up to 2000 I/O
PROFIBUS DPnet 0 (DP0)	serial, 9,600 bit/s ... 12 Mbit/s
	redundant implementation
	accessible via 9-pin SUB-D socket on the front panel
PROFIBUS DPnet 1 (DP1)	serial, 9,600 bit/s ... 12 Mbit/s
	redundant implementation
	accessible via 9-pin SUB-D socket on the front panel
PROFIBUS DP Capacity	up to 6000 I/O in total
Front panel interface (SS0)	RS422 interface for connection of radio clock
	accessible via 9-pin SUB-D socket on the front panel
Service interface (SS1)	plastic optical fiber interface
	accessible via front panel (special plastic optical fiber cable needed for conversion to RS232, max. length 15 m)
Redundancy link (Backup)	serial, 1.5 MBd
	accessible through the system plug in the rear
	serves as backup redundancy link if the redundancy link RL on the front panel fails
System plug	64-pin multipoint plug meeting DIN 41 612 and pattern C64 in the rear of the module
	contains signal lines for Cnet (C), Cnet (SC), Fnet, redundancy link, power supply, slot code, signaling outputs, malfunction output ST, etc.
Signaling	
Light emitting diode A (green)	Module active
Light emitting diode S (red)	Malfunction
Dimensions	
Height	7 HU (G format)
Width	16 TE
Power supply	
Supply voltage	Uv=+20...+33 V
Permissible overvoltage	35 V (for t=1 s)
	45 V (for t=10 ms)
Fuses	Fusible plug 5 * 20, M 3.15 E or T 3.15 H
Current consumption	I_{NOM}=1.3 A at UV=24 V
	I_{MAX}=1.51 A at UV=20 V
Power dissipation	Max. 31 W
Ambient temperature	0 ... 50 °C (temperature for ventilation of the module in the housing)

Basic Specification		
Power supply (all consuming modules)	+24 V DC (+20… +33 V DC)	
Climatic conditioning AC 870P housing and modules		
Permissible ambient temperature	0 ... 45° C	Permissible housing intake temperature according to power loss and protection type
	0 ... 50° C	Permissible module intake temperature
	0 ... 70° C	Module operating range
	-30...85°C	Transportation/ storage
Permissible relative air humidity	Yearly average 75 %; with no condensation in operation	
	approx. 95 % condensation permissible in transportation/storage	
Climatic class	3K3 to DIN EN 60 721 part 3-3	
	KSF to DIN 40 040 (of 04.87)	

Main- and Extension Housing	
Mechanical data	
Housing type	DIN-Rail mounted
Dimensions of cabinet frame	Width: 215 mm
	Depth: 200 mm
	Height: 365 mm
Cabinet frame	Steel panel, powder coated
Mounting	Double DIN-Rail, EN 50022 35 x 7,5/15, Spacing 202 mm (center/center)
Weight	Approx. 3.5 kg (Main housing, without modules)
Color	RAL 9002
Enclosure rating	IP 20 (standard)
Electrical data	
Insulation test	Test performed on lines as per VDE 0660
	Bus flat cable: 500 V wire against wire
	230 V (AC) input: 2500 V against housing
Shield connection	Shielding of the field cable is grounded at the AC 870P housing and at the DIN-Rail
Power supply	SD 822, 5 A
	SD 823, 10 A

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