MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

ABB

3BDH000734R1 CBC11-P AC870P

SEVEN-CHANNEL CLOSED-LOOP CONTROL MODULE

Used with the applicable AC 870P Local I/O configuration.

REFERENCE PACKAGE

OFFICIAL DOCUMENT

Selected official manufacturer pages follow this cover.

Source: ABB 3BDH000734R1 CBC11-P AC870P

Industrial^{IT} System 800xA
AC 870P Local I/O

Data Sheet





System 800xA's AC 870P controller can be extended with AC 870P local I/O.

A large variety of I/O modules can be combined to form an optimal solution for a specific application.

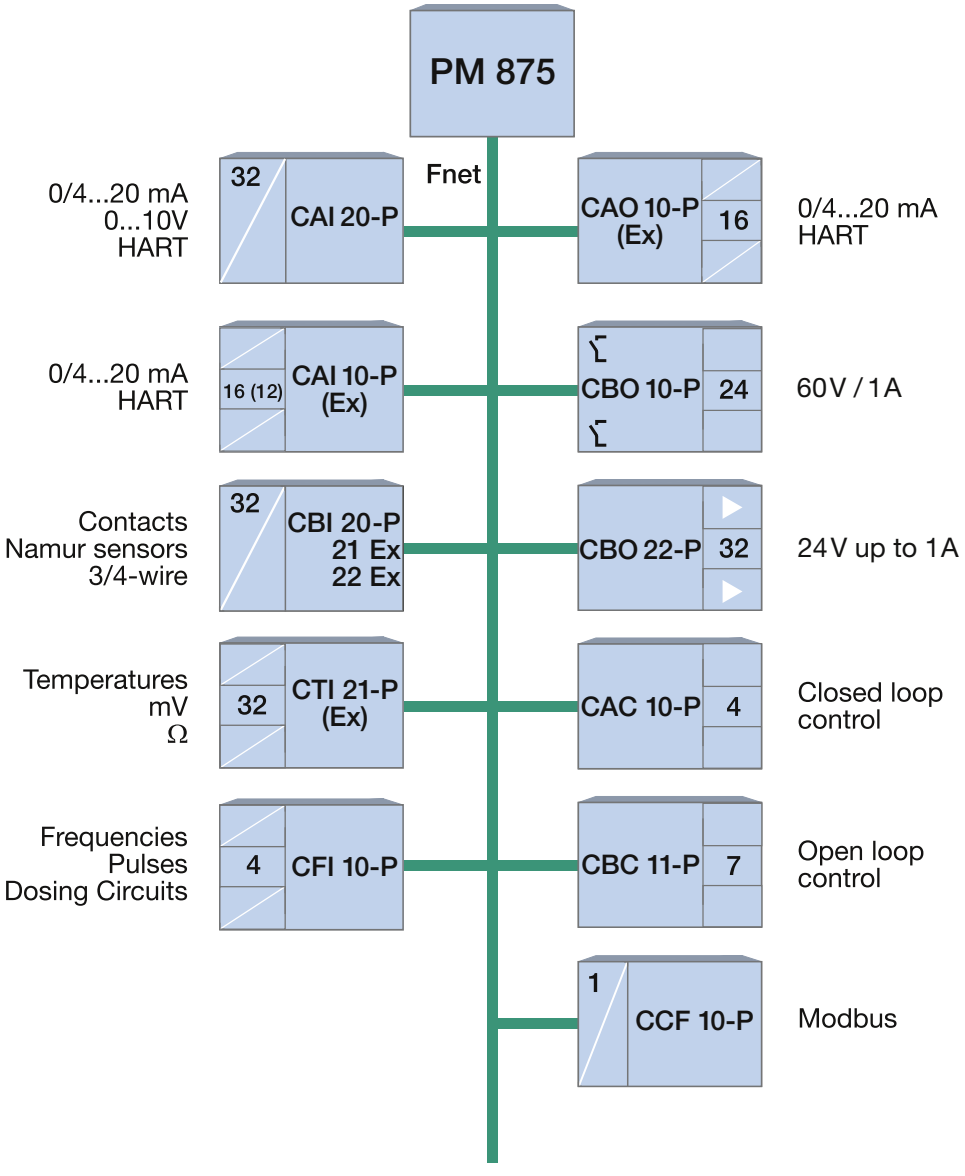
The interoperability of the AC 870P Controller and the Local I/O modules is realized via a high speed, redundant serial field network (Fnet). An I/O module processes any inputs from and outputs to field devices and transfer these signals to the AC 870P with a time stamped resolution of 1ms. The I/O modules are powered by a modular power supply, which can also be provided redundantly.

The following I/O types are available:

- Analog input (CAI)
- Temperature input (CTI)
- Analog output (CAO)
- Digital input (CBI)
- Digital output (CBO)
- Controller output/Individual drive output (CAC/CBC)
- Frequency input (CFI)
- Serial communication interfaces (CCF)

AC 870P Local I/O Features

- A processor in each I/O module provides advanced functions like event detection and alarm generation, time stamping with 1 ms resolution and system diagnostics.
- PROM changes are no longer required because of downloadable firmware.
- AC 870P local I/O modules provide integrated transmitter supply, integrated intrinsic safety, and HART communication.
- Process signals are connected to the front panel of the I/O modules which leads to efficient packaging.
- Distribution of I/O modules reduces cable and installation costs. A high speed serial communication bus (Fnet) designed for long distances combined with flexible Din-Rail, 19" universal cabinet as well as Melody modules Cabinet based mounting options enables both centralized and remote I/O locations.
- Simplified user configuration with no calibration required and no jumper on-board to set.
- The I/O modules are fully compatible with the existing Melody System.
- Inherent redundancy design provides redundant communications via Fnet and optionally redundant I/O modules provide the highest level of availability.
- Reduction in total operating cost. Simple user configuration without any calibration. Online replacement of modules without disrupting the process, in case of redundancy.



Basic Specification		
Power supply (all consuming modules)	+24 V DC (+20… +33 V DC) via power supply modules Details see “AC870P/Melody System Data and Handling (2PAA101137)”	
Climatic conditioning AC 870P housing and modules		
Permissible ambient temperature	0 ... 50° C	Permissible module Intake temperature
	-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)	
Intrinsic safety	Class 1, div. 2	
Communication Media-Fnet		
Serial lines with coaxial/fiber optic cable via repeater		
Redundant	2 lines (A and B)	
Adressable stations	126 single modules or 126 redundancy pairs	
Connectable number of stations		
per bus segment	2 masters (as redundancy pair)	
	+ 44 slaves	
	+ 1 repeater (per bus line)	
Repeater CCR 70-P		
Repeaters equipped with the corresponding interface modules are suitable for the following applications		
Increasing the number of subscribers and extending the transmission paths	Point to point connections (optical) up to 2000 m (electrical) up to 500 m	
	Y-branching (electrical)	
	Optical star with 4 optical fibres per module	
	Bus connection between several cabinets (electrical) up to 200 m	
Layout of modules		
Peripheral modules in standard versions and intrinsically safe versions (Ex and Non-Ex)		
Dimensions		
Height	7 height units ➔ 311,15 mm	
Width	8 module width units ➔ 40,64 mm	
Depth	160 mm	
Connection technique	on front via 4 (3) termination units with cage clamp springs	
System connector on rear	C64 (to DIN 41612)	
Operation/fault indication	by LED on front panel	
Individual fusing	T3.15H on front panel	

Termination Units for Field Cable		
Different termination units are available depending on the application		
Termination unit	CI 100	for simply configured modules (gray)
	CI 101	for redundantly configured modules (gray) with 8 DU
	CI 102	for redundantly configured modules (gray) with 16 DU
	CI 120 Ex	for simply configured Ex modules (blue)
	CI 121 Ex	for redundantly configured Ex modules (blue)
	CI 122-2 Ex	with integrated current limiting for redundantly configured Ex modules (blue)
AC 870P Local I/O Modules (all modules with redundancy capability)		
Digital input modules	CBI 20-P	32 Inputs,48/24/8.2 V, Standard-Binary Signals-Contact Scanning (Changer/ Opener/Closer), Initiators (Namur, 3-/4-Wire), Isolation per module, Transmitter Power Supply
	CBI 21-P Ex	32 Inputs, [EEx ib] IIC, Namur-ATEX 100 compliant, Isolation per module, Transmitter Power Supply
	CBI 22-P Ex	32 Inputs 16V, [EEx ib] IIC, TEX 100 compliant, Contact Scanning (Changer/Opener/ Closer), Isolation per module, Transmitter Power Supply
Digital output modules	CBO 10-P	24 Outputs, 10..60V AC/DC, 1 A, Potential-free Contacts, Transmitter Power Supply, Safety Support external
	CBO 22-P	32 Outputs, 24V, Electronic Outputs - Power Supply and Fusing, internal 55 mA/110 mA/220 mA, external 250 mA /500 mA/ 1.000 mA
Frequency input modules	CFI 10-P	4 channels, 0.15Hz ..50 kHz frequency or 20 µs ... 6 s period measurement, galvanic isolation per channel, Transmitter supply, Initiators (Namur, 3-Wire), Contact Scanning, Outputs with int/ext. Supply, Dosing circuit, Frequency input

AC 870P Local I/O Modules (all modules with redundancy capability)		
Analog input modules	CAI 10-P	16 Inputs 0/4..20 mA, HART, Isolation per Channel, Transmitter Power Supply
	CAI 20-P	32 Inputs 0/4..20 mA, 0/2..10 V, Ri 250 Ohm, HART, Isolation per Channel, Transmitter Power Supply
	CAI 10-2-P Ex	12 Inputs 4..20 mA, HART, [EEx ib] IIC, ATEX 100 compliant Isolation per Channel, Transmitter Power Supply
Analog output modules	CAO 10-P	16 Outputs 0/4..20 mA, HART, Isolation per Channel
	CAO 10-2-P Ex	16 Outputs 0/4..20 mA, HART, [EEx ib] IIC, ATEX 100 compliant, Isolation per Channel
Temperature input module	CTI 21-P	16/ 32 Inputs, Isolation per Channel, Thermo Couples, Pt-/Ni 100, mV/V-Signals, Resistance
	CTI 21-P Ex	16/ 32 Inputs, [EEx ib] IIC, Isolation per Channel, Thermo Couples, Pt-/Ni 100, mV/V-Signals, Resistance
Control module	CAC 10-P	Closed Loop Control, 4 Channels, Transmitter Power Supply, Coupling Relay Control, Connection of Servo Drives, Actuators and Pneumatics PI-Step Control, Three-Point-Positioner
	CBC 11-P	Closed Loop Control, 7 Channels, Transmitter Power Supply, Coupling Relay Control, Connection of Servo Drives, Actuators and Pneumatics PI-Step Control, Three-Point-Positioner

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