



The AC 800M for compact control is a family of controllers built as rail-mounted modules, consisting of CPU:s, communication modules, power supply modules and various accessories. There are 5 controller modules to choose from, from medium power and low cost to high power and support for full redundancy.

Features\Controllers (requires firmware version >4.0)	PM851	PM856	PM860	PM861A	PM864A
Processor Unit	PM851K01 incl: 1 PM851 CPU and required optional items	PM856K01 incl: 1 PM856 CPU and required optional items	PM860K01 incl: 1 PM860 CPU and required optional items	PM861AK01 incl: 1 PM861A CPU and required optional items PM861AK02 incl: 2 PM861A CPUs and required optional items	PM864AK01 incl: 1 PM864A CPU and required optional items PM864AK02 incl: 2 PM864A CPUs and required optional items
Optional items (partly included in Processor Units, see Price List)	TP830 Baseplate, TP850 CEX-bus term., TK850 CEX-bus cable, TB807, ModulBus term, Battery RAM backup, TB852 RCU-link term, TB851 RCU-link cable, SB821 External Battery Unit, TK212 Tool cable, TC562 Short Distance Modem, TK853V020 Modem cable, BC810K02 CEX-bus Interconnection unit; TK851V010 Connection cable, SD821/SD822/SD823 Power Supply, SS822 Voiting Unit, Mains Breaker Kit.				
Clock frequency	24 MHz	24 MHz	48 MHz	48 MHz	96 MHz
Memory (RAM)	8 Mb	8 Mb	8 Mb	16 Mb	32 Mb
RAM available for application	2552 Mb	2552 Mb	2552 Mb	8024 Mb	24393 Mb
Processor type	MPC860	MPC860	MPC860	MPC860	MPC862
Compact Flash memory for storage of application and data (CF memory: type 1, 3 mm thickness)	Yes	Yes	Yes	Yes	Yes
CPU redundancy support	No	No	No	Yes	Yes
Switch over time in red. conf.	-	-	-	max 10 ms	max 10 ms
Performance (1000 Boolean operations)	0.46 ms	0.46 ms	0.23 ms	0.23 ms	0.15 ms
No. Controllers per control projects	32				
No. of applications per control project	256				

Features / PLCs	PM851	PM856	PM860	PM861A	PM864A
No. of applications per Controller	8				
No. of programs per application	64				
No. of tasks per Controller	32				
Number of different cycle times	32				
Cycle time per application programs	Down to 1 ms				
Flash PROM for firmware storage	2 Mb flash				
Power supply	24 V DC (19.2-30 V DC) max 5 % ripple acc. to IEC 61131-2				
Power consumption +24 V	typ/max 180/300 ma	typ/max 180/300 ma	typ/max 180/300 ma	typ/max 250/430 ma	typ/max 287/487 ma
Power dissipation	typ 5.0 W	typ 5.0 W	typ 5.0 W	typ 6.0 W	typ 6.9 W
Power Reservoir	Internal 5 ms power reservoir, sufficient for the CPU to make a controlled power down				
Power supply connector	Detachable 4-pole screw terminal block				
Redundant power supply status inputs	Yes: 2 inputs designated SA, SB (Max 30 V, high level >15 V, low level < 8 V)				
Built-in back-up battery	Type: Lithium, 3.6 V, 0.95 Ah, size 1/2 AA, 0.3 g Litium content				
Back-up time internal battery	min 48 hours	min 48 hours	min 48 hours	min 118 hours	min 235 hours
Back-up time external battery (SB821)	min 4 weeks	min 4 weeks	min 4 weeks	min 12 weeks	min 24 weeks
Real-time clock stability	100 ppm (approx. 1 h/year)				
Clock synchronization	1 ms between AC 800M controllers by CNCP protocol				
OPC Server for AC 800M	40 000 variables				
OPC Server update rate	0.1 s - 1 hour (1 s default)				
OPC Servers per Controller	Max 2				
OPC clients per OPC server	Max 5				
Event queue in Controller per OPC client	Up to 3000 events				
AC800M transm. speed to OPC server	36-86 events/sec, 113-143 data messages/sec (PM864, 50 % load, 1 500 subscription queue)				
Comm. modules on CEX bus	1	12	12	12	12
Supply current on CEX bus	Supply current: Max 24 V - 2.4 A (fuse 3.15 A fast)				
I/O clusters on ModuleBus (local I/O)	1 el. + 1 opt.	1 el. + 7 opt.	1 el. + 7 opt.	1 el. + 7 opt.	1 el. + 7 opt.
I/O capacity on ModuleBus (local I/O) (Non redundant configuration only)	max 24 I/O modules	max 96 I/O modules	max 96 I/O modules	max 96 I/O modules	max 96 I/O modules
ModuleBus scan rate	0 - 100 ms (actual time depending on number of I/O modules)				
Supply current on Electrical Modulbus	Supply current: Max 24 V - 1.0 A (short circuit proof, fuse 2.0 A), Max 5 V - 1.5 A (short circuit proof)				
I/O capacity on Profibus (remote I/O)	Max 99 I/O stations (max 62 redundant I/O stations), max 24 I/O modules per I/O station (max 12 redundant I/O pairs)				
Ethernet channels	1	2	2	2	2
Ethernet interface	Ethernet (IEEE 802.3), 10 Mbits/s, RJ-45, female (8-pole)				
Control Network protocol	MMS (Manufacturing Message Service)				
Control Network capacity	Up to 23 000 Boolean/s (<475 boolean/message) with 50 % CPU application load Up to 140 000 Boolean/s (<475 boolean/message) with <5 % CPU application load				
Recommended Control Network backbone	100 Mbit/s switched Ethernet				
Redundancy Control Network switchover time	1 sec				
RS-232C interface	2 (one general, 1 for service tool)				
RS-232C interface (COM3) (non red.conf. only)	RS-232C, 75-19 200 baud, RJ-45 female (8-pole), not opto isolated, full RTS-CTS support				

Features / PLCs	PM851	PM856	PM860	PM861A	PM864A
RS-23 2C interface (COM4) (non red.conf. only)	RS-232C, 9600 baud, RJ-45 female (8-pole), opto isolated, no RTS-CTS support				
Temperature – Operating – Storage	+5 to +55 °C (+41 to +131 °F) –25 to +70 °C (-13 to +158 °F)				
Temperature changes	3 °C/minutes according to IEC/EN 61131-2				
Altitude	2000 m according to IEC/EN 61131-2				
Pollution degree	Degree 2 according to IEC/EN 61131-2				
Corrosion	Copper corrosion of 300 Angstrom over 28 days				
Vibration	10< f <50 Hz: 0.0375 mm amplitude, 50< f <150 Hz: 0.5 g acceleration, 5< f <500 Hz: 0.2 g acceleration				
Emitted noise	<55 dB (A)				
Shock, no package	150 m/s ² in 11 ms, 20 g in 3 ms				
Relative humidity	5 to 95 %, non-condensing				
Isolation voltage	Type test voltage: 500 V AC (corresponding to 700 V DC)				
Environmental conditions	Industrial				
Protection class	IP20 according to EN 60529, IEC 529				
Certification – CE-marked – UL-listed – TÜV Approval	Meets EMC directive 89/336/EEC acc. to EN 50081-2 and EN 61000-6-2 UL 508 and UL 60079-15 (Class 1 Zone 2)				
	No	No	No	No	No
Electromagnetic Compatibility	Tested according to IEC/EN 61131-2 Product Standard, Programmable Controller – Industrial Environment				
Emission	Tested according to EN 50081-2 EMC – Generic Emission Standard, Part 2 – Industrial Environment				
Immunity	Tested according to EN 61000-6-2 EMC – Generic Immunity Standard, Part 2 – Industrial Environment				
Dimensions	W 119 x H 186 x D 135 mm (4.7 x 7.3 x 5.3 in.)				
Weight (including base)	1100 g (2.4 lb)	1100 g (2.4 lb)	1100 g (2.4 lb)	1200 g (2.6 lb)	1200 g (2.6 lb)

Supported Communication modules	Profibus	RS-232 C	MB300	INSUM	Drivebus	S100 I/O interface
Module	CI854A	CI853	CI855	CI857	CI858	CI856
Protocol	DP-V1 (PA via Linking Device)	Modbus master, Comli master/slave, Siemens master, User defined protocols	MB300	IEEE 802.3	ABB's Drivebus	ABB's S100 I/O
Master or slave	Master	Master/slave	Master/slave	Master	Master	Master
Number of channels	1	2	2	1	1 main, 2 aux	1
Max units on CEX bus	12	12	12	6	2	12
Transmission speed	9.6 - 12,000 kbits/s	75 - 19 200 b/s	10 Mbits/s, 200 Datasets/s	10 Mbits/s	4 Mbits/s	–
Cable redundancy	Yes	No	Yes	No	No	No
Module redundancy	Yes	No	No	No	No	No
Hot Swap	Yes	Yes	Yes	Yes	Yes	Yes

Supported Communication modules	Profibus	RS-232 C	MB300	INSUM	Drivebus	S100 I/O interface
Connectors	DB female (9-pin)	RJ-45 female (8-pin)	RJ-45 female (8-pin)	RJ-45 female (8-pin)	Fiber-optic	Miniribbon (36-pin)
24 V current consumption	typ 190 ma	typ 100 ma	typ 150 ma	typ 150 ma	typ 200 ma	typ 200 ma
Protection class	IP20 according to EN60529, IEC 529					
Certifikation – CE-marked – UL-listed	Meets EMC directive 89/336 EEC acc. to EN 50081-2 and EN 61000-6-2 UL508 and UL60079-15 (Class 1 Zone 2)					
Dimensions	W 58 x H 186 x D 135 mm (2.3 x 7.3 x 5.3 in.)					
Weight (including base)	700 g (1.5 lb.)	520 g (1.2 lb.)	700 g (1.5 lb.)	600 g (1.3 lb.)	700 g (1.5 lb.)	600 g (1.3 lb.)

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