

Modicon M340

automation platform

Processor modules

Modicon M340 platforms have been designed to conform with the main national and international standards relating to electronic devices for industrial control systems (see pages 7/2 to 7/7 "Standards, certifications and environmental conditions").

Characteristics and performance

Processor				Standard	Performance				
			BMX	P34 1000	P34 2000	P34 2010/20102	P34 2020	P34 2030/20302	
Maximum configuration	No. of racks 4, 6, 8 or 12 slots			2	4				
	Max. number of slots for processor and modules (excluding power supply module)			24	48				
Functions	Max. no. (1)	Discrete I/O		512	1024				
		Analog I/O		128	256				
	Control channels			Programmable loops (via CONT-CTL process control EFB library)					
	Application- Number	Type		20	36				
				2-channel (60 kHz) or 8-channel (10 kHz) counter modules 2-channel PTO (Pulse Train Output) motion control module for servo drives 2-channel serial link module or serial link integrated in the processor (except BMX P34 2030/20302)					
	MFB motion control			–	Independent axes on CANopen bus (via MFB library)		–	Independent axes on CANopen bus (via MFB library)	
	Network and bus connections integrated in the CPU	Ethernet Modbus/TCP		–			1 RJ45 port, 10/100 Mbps, with Transparent Ready class B10 standard web server		
		CANopen master bus		–	–	1 (9-way SUB-D)	–	1 (9-way SUB-D)	
		Serial link		1 RJ45 port, RTU/ASCII Modbus master/slave or Character mode (non-isolated RS 232C/RS 485), 0.3...38.4 Kbps					–
		USB port		1 slave port, 12 Mbps					
	Network and bus modules	Ethernet Modbus/TCP 10/00 Mbps		1 RJ45 port, with:	2 RJ45 ports, with: - Transparent Ready class B30 standard web server with BMX NOE 0100 module - Transparent Ready class C30 configurable web server with BMX NOE 0110 module				
		AS-Interface V3		2 master modules	4 master modules, M4 “Full extended master” profile				
		Modbus		2-channel serial link module, see “Application-specific channels” above and on page 3/48					
	Real-time clock	RTC		Yes. Backup: Typically 6 weeks for 5 years and 4 weeks for 10 years, at 40°C (operation) and 30°C (storage)					
	Internal user RAM	Total capacity		KB	2048	4096			
Program, constants and symbols		KB	1792	3584					
Data		KB	128	256					
Memory card	Supplied as standard (reference BMX RMS 008MP)			Backup of program, constants, symbol and data					
				–			Activation of standard web server, class B10 Standard Web server area, 2 MB		
	To be ordered separately (reference BMX RMS 008MPF or BMX RMS 128MPF)			–		Backup of program, constants, symbol and data			
				–		File storage, 8 MB (3) or 28 MB depending on card model			
				–			Activation of standard web server, class B10 Standard Web server area, 2 MB		
Maximum size of object areas	Located internal bits	Maximum	bits	16,250 %Mi	32,464 %Mi				
		Default	bits	256 %Mi	512 %Mi				
	Located internal data	Maximum	Bytes	32,464 %MWi internal words, 32,760 %KW constant words					
		Default	Bytes	512 %MWi int. words 128 %KW const. words	1024 %MWi internal words, 256 %KW constant words				
	Max. unlocated internal data		KB	128 (2)	256 (2)				
Application structure	Master task			1 cyclic or periodic					
	Fast task			1 periodic					
	Auxiliary tasks			–					
	Event tasks			32 (including 2 with priority)	64 (including 2 with priority)				
Execution time for one instruction	Boolean		µs	0.18	0.12				
	On words or fixed point arithmetic	Single length %MW	µs	0.38	0.25				
		Double length %MD	µs	0.26	0.17				
	On floating point	%MF	µs	1.74	1.16				
No. of Kinstructions executed per ms	100% Boolean		Kinst/ms	5.4	8.1				
	65% Boolean and 35% fixed arithmetic		Kinst/ms	4.2	6.4				
System overhead	Master task		ms	1.05	0.70				
	Fast task		ms	0.20	0.13				
Consumption	With 24 V ~ voltage		mA	72	72	90	95	135	

(1) Only affects in-rack modules. The remote I/O on the CANopen bus are not included in these maximum numbers.

(2) The size of the located data (internal bits and data) and the size of the configuration data should be deducted from this value.

(3) With the BMX RMS 008MPF memory card, up to 14 MB can be used if the option to download the operating system via Unity OS-Loader software is not used.

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BMX P34 1000



BMX P34 2000

BMX P34 2010/20102
BMX P34 2030/20302

BMX P34 2020



BMX RMS 008/128MPF



BMX XCA USB H0

BMX P34 Modicon M340 processors

Modicon M340 processor modules are supplied with the **BMX RMS 008MP** Flash memory card. This card performs the following actions transparently:

- Backing up the application (program, symbols and constants) supported in the processor internal RAM that is not backed up
- Activating the Transparent Ready class B10 standard web server with **BMX P34 2020/2030/20302** Performance processors

This card can be replaced by either of the **BMX RMS 008/128MPF** cards which also feature a file storage option.

I/O capacity	Max. no. of network and bus modules	Integrated communication ports	Compatibility with Unity software	Reference	Weight kg
Standard BMX P34 10, 2 racks					
512 discrete I/O 128 analog I/O 20 application-specific channels 2048 KB integrated	1 Ethernet network 2 AS-Interface buses	Modbus serial link	Version ≤ 4.1	BMX P34 1000	0.200
Performance BMX P34 20, 4 racks					
1024 discrete I/O 256 analog I/O 36 application-specific channels 4096 KB integrated	2 Ethernet networks 4 AS-Interface buses	Modbus serial link	Version ≤ 4.1	BMX P34 2000	0.200
		Modbus serial link CANopen bus	Version ≤ 4.0	BMX P34 2010	0.210
			Version ≥ 4.1 (2)	BMX P34 20102	0.210
		Modbus serial link Ethernet network	Version ≤ 4.1	BMX P34 2020	0.205
		Ethernet network CANopen bus	Version ≤ 4.0	BMX P34 2030	0.215
			Version ≥ 4.1 (2)	BMX P34 20302	0.215

Memory cards

Description	Processor compatibility	Capacity	Reference	Weight kg
Flash memory cards (3)	BMX P34 2000	8 MB/8 MB files	BMX RMS 008MPF	0.002
	BMX P34 2010/20102	8 MB/128 MB files	BMX RMS 128MPF	0.002
	BMX P34 2020			
	BMX P34 2030/20302			

Separate parts

Description	Use		Length	Reference	Weight kg
	From	To USB port type A			
Terminal port/USB cordsets	Mini B USB port on the Modicon M340 processor	PC terminal,	1.97 yd	BMX XCA USB H018	0.065
		Magelis XBT GT/GK and XBT GTW graphic terminal	4.5 m	BMX XCA USB H045	0.110

Replacement part

Description	Use	Processor compatibility	Reference	Weight kg
8 MB Flash memory card	Supplied as standard with each processor. Used for: - Backing up the program, constants, symbol and data - Activating the class B10 web server	BMX P34 1000 BMX P34 2000 BMX P34 20102/20302	BMX RMS 008MP	0.002

(1) **BMX P34 20102/20302** processors, combined with Unity Pro V4.1, can be used to customize configuration of the device Boot Up procedure compatible with all CANopen third-party products.

(2) The **BMX P34 20102/20302** models will eventually replace the **BMX P34 2010/2030** models.

(3) Cards that can replace the memory card supplied as standard with each processor, used for:

- Backing up the program, constants, symbol and data
- File storage
- Activating the class B10 web server