

# Modicon® M340™ Automation Platform

## Analog I/O modules



BMX AM ● 0●●0



BMX ART 0414 BMX ART 0814



BMX FTB 20●0



BMX FTW ●01S



ABE7CPA41●



BMX FCA ●●0



BMX FCA ●02

### References

#### Analog input modules

Input type	Input signal range	Resolution	Connection	No. of channels	Reference	Weight kg
Isolated high-level inputs	± 10 V, 0...10 V, 0...5 V, 1...5 V, ± 5 V, 0...20 mA, 4...20 mA, ± 20 mA	16 bits	Via cage clamp, screw clamp or spring-type removable terminal block	4 fast channels	BMXAMI0410	–
Isolated low-level inputs	Temperature probe, thermocouple ± 40 mV, ± 80 mV, ± 160 mV, ± 320 mV, ± 640 mV, ± 1.28 V, 0...400 Ω, 0...4000 Ω	15 bits + sign	40-pin connector	4 channels 8 channels	BMXART0414 BMXART0814 ▲	– –

#### Analog output module

Output type	Output signal range	Resolution	Connection	No. of channels	Reference	Weight kg
Isolated high-level outputs	± 10 V, 0...20 mA, 4...20 mA	16 bits	Via cage clamp, screw clamp or spring-type removable terminal block	2 channels	BMXAMO210	–

#### Mixed analog I/O module

Channel type	Signal range	Resolution	Connection	No. of channels	Reference	Weight kg
Mixed I/O, non-isolated	± 10 V, 0...10 V, 0...5 V, 1...5 V, 0...20 mA, 4...20 mA	14 bits or 12 bits depending on the range	Via cage clamp, screw clamp or cage spring-type removable terminal block	I: 4 channels Q: 2 channels	BMXAMM0600 ▲	–

#### Connection accessories for analog modules (1)

Description	For use with modules	Type, composition	Length	Reference	Weight kg
20-pin removable terminal blocks	BMX AMI 0410	Cage clamp	–	BMXFTB2000	–
	BMX AMO 0210	Screw clamp	–	BMXFTB2010	–
	BMX AMM 0600	Spring-type	–	BMXFTB2020	–
Preformed cord sets	BMX AMI 0410	One 20-pin removable terminal block	3 m	BMXFTW301S	–
	BMX AMO 0210		5 m	BMXFTW501S	–
	BMX ART 0414	One 40-pin connector	3 m	BMXFCW301S	–
	BMX ART 0814 (2)		5 m	BMXFCW501S	–

#### Advantys™ Telefast® ABE7 pre-wired I/O system

Advantys Telefast ABE7 sub-bases	BMX AMI 0410	Distribution of isolated power supplies Delivers 4 protected isolated power supplies for 4...20 mA inputs Direct connection of 4 inputs	–	ABE7CPA410	0.180
	BMX ART 0414 BMX ART 0814	Connection and provision of cold junction compensation for thermocouples Direct connection of 4 inputs	–	ABE7CPA412	0.180
Preformed cord sets for ABE7CPA●● sub-bases	BMX AMI 0410	One 20-pin removable terminal block and one 25-pin SUB-D connector for ABE7CPA410 sub-base	1.5 m	BMXFCA150	–
			3 m	BMXFCA300	–
			5 m	BMXFCA500	–
	BMX ART 0414 BMX ART 0814	One 40-pin connector and one 25-pin SUB-D connector for ABE7CPA412 sub-base	1.5 m	BMXFCA152	–
			3 m	BMXFCA302	–
		5 m	BMXFCA502	–	

(1) The shielding on the cord sets carrying the analog signals must always be connected to the BMX XSP●●00 shielding connection kit mounted under the rack holding the analog modules (see page 1/15).

(2) The BMX ART 0814 8-channel module requires two ABE7CPA412 sub-bases and two BMX FCA●●2 cord sets.

▲ Available 4<sup>th</sup> quarter 2007

The power required to supply each **BMX XBP ●●●0** rack depends on the type and number of modules installed. It is therefore necessary to create a power consumption table for each rack to define the most suitable **BMX CPS ●●●0** power supply module for each rack. The table below can be used to calculate the consumption on the 2 or 3 different voltages (depending on model) to be supplied by the **BMX CPS ●●●0** power supply module: 3,3 V ---, 24 V --- rack, 24 V --- sensors.

**Procedure:**

- Ensure that the power supply module corresponds to the power supplies available for the two or three voltages.
- Ensure that the total power absorbed on these three voltages does not exceed the overall power of the power supply module.
- Values to be entered according to the type of Modicon M340 configuration.

Rack n°	Module reference	Format S : standard D : double	Number	Consumption in mA (1)					
				Voltage 3,3 V ---		Voltage 24 V rack		Voltage 24 V --- sensors	
				Module	Total	Module	Total	Module	Total
Processors	BMXP341000	S	1			72			
	BMXP342010	S				90			
	BMXP342020	S				95			
	BMXP342030	S				135			
Discrete I/O	BMXDAI1602	S		90					
	BMXDAI1603	S		90					
	BMXDAI1604	S		90					
	BMXDAO1605	S		100					
	BMXDDI1602	S		90			60		
	BMXDDI1603	S		90					
	BMXDDI3202K	S		140				110	
	BMXDDI6402K	S		200				110	
	BMXDDM16022	S		100				30	
	BMXDDM16025	S		100		50		30	
	BMXDDM3202K	S		150				55	
	BMXDDO1602	S		100					
	BMXDDO1612	S		100					
	BMXDDO3202K	S		150					
	BMXDDO6402K	S		240					
	BMXDRA0805	S		100		55			
BMXDRA1605	S		100		95				
Analog I/O	BMXAMI0410	S		150		45			
	BMXAMM0600	S		150		130			
	BMXAMO0210	S		150		110			
	BMXART0414	S		150		40			
	BMXART0814	S		150		100			
Counting	BMXEHC0200	S		200		40		80	
	BMXEHC0800	S		200				80	
Communication	BMXNOE0100	S				90			
	BMXNOE0110	S				90			
<b>Consumption per voltage</b>				<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>Total current (mA)</p> <input type="text"/> x 3,3 V         </div> <div style="text-align: center;">+</div> <div style="text-align: center;"> <p>Consumption voltage (mW)</p> <input type="text"/> </div> <div style="text-align: center;">+</div> <div style="text-align: center;"> <p>Consumption voltage (mW)</p> <input type="text"/> </div> <div style="text-align: center;">+</div> <div style="text-align: center;"> <p>Consumption voltage (mW)</p> <input type="text"/> </div> <div style="text-align: center;">=</div> <div style="text-align: center;"> <input type="text"/> </div> </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="text-align: center;"> <p>Power available (mW)</p> <input type="text"/> </div> <div style="text-align: center;"> <p>Power overall (mW)</p> <input type="text"/> </div> </div>					
Choice of power supply	BMXCPS2010	D	24 V --- isolated	8250		16 800		17 000	
	BMXCPS3020	D	24...48 V --- isolated	14850		31 200		32 000	
	BMXCPS2000	D	100...240 V ~	8250		16 800	10 800	20 000	
	BMXCPS3500	D		14850		31 200	21 600	36 000	

(1) Typical value given for 100% of inputs or outputs at state 1.