

# Power Consumption


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## Calculation Table

The power required by a rack depends on the type of modules installed.

**NOTE:** Two redundant power supplies on the same rack are not summable.

Calculate the global power consumption to define the power supply module to be installed on the rack:

Power	Calculation	Result
<b>P 3.3 V rack</b> = power required on the 3V3_BAC output	current absorbed on the 3V3_BAC output by all modules (mA) x 10 <sup>-3</sup> x 3.3	=.....W
<b>P 24 V rack</b> = power required on the 24V_BAC output	current absorbed on the 24V_BAC output by all modules (mA) x 10 <sup>-3</sup> x 24	=.....W
<b>P 24 V sensors</b> = power required on the 24V_SENSORS output	current absorbed on the 24V_SENSORS output by all modules (mA) x 10 <sup>-3</sup> x 24	=.....W
total power required	<b>P 3.3 V rack + P 24 V rack + P 24 V sensors</b>	=.....W

**NOTE:** Unity Pro software can display the [power consumption budget](#) for a given configuration.

The following tables give the average power consumption per module. The average value is calculated regarding the maximum and typical consumptions.

## Rack and Extender Module Consumption

Rack Family	Rack Reference	Average Current Consumption (mA)	
		3V3_BAC Output	24V_BAC Output
X bus rack	BMXXBP0400(H)	340	–
	BMXXBP0600(H)	510	–
	BMXXBP0800(H)	670	–
	BMXXBP1200	50	–
	BMXXBP1200(H)	250	–
Dual Ethernet and X bus rack	BMEXBP0400(H)	49	118
	BMEXBP0800(H)	64	164
	BMEXBP1200(H)	86	164
Redundant power supply rack	BMEXBP0602(H)	58	152
	BMEXBP1002(H)	76	162
Module Reference	Description	Average Current Consumption (mA)	
		3V3_BAC Output	24V_BAC Output

BMXXBE1000	rack extender module	22	160
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## M580 CPU

Module		Average Current Consumption (mA)		
Reference	Description	3V3_BAC Output	24V_BAC Output	24V_SENSORS Output
BMEP581020 BMEP582020 BMEP582040	Standalone CPU Ethernet distributed IO	–	270	–
BMEP583020	Standalone CPU Ethernet distributed IO	–	295	–
BMEP583040	Standalone CPU Ethernet remote and distributed IO	–	295	–
BMEP584020	Standalone CPU Ethernet distributed IO	–	295	–
BMEP584040	Standalone CPU Ethernet remote and distributed IO	–	295	–
BMEP585040 BMEP586040	Standalone CPU Ethernet remote and distributed IO	–	300	–
BMEH582040	HSBY CPU Ethernet remote and distributed IO	–	270 or 335 <sup>(1)</sup>	–
BMEH584040	HSBY CPU Ethernet remote and distributed IO	–	295 or 360 <sup>(1)</sup>	–
BMEH586040	HSBY CPU Ethernet remote and distributed IO	–	295 or 365 <sup>(1)</sup>	–
<b>(1)</b> with a copper SFP				

## M340 PLC

The following table gives the average power consumption for each module.

Module		Average Power Consumption (mA)		
Reference	Description	3V3_BAC Output	24V_BAC Output	24V_SENSORS Output
BMXP341000	CPU 340-10 Modbus	-	72	-

BMXP342000	CPU 340-20 Modbus	-	72	-
BMXP342010 BMXP3420102	CPU 340-20 Modbus CANopen	-	90	-
BMXP342020	CPU 340-20 Modbus Ethernet	-	95	-
BMXP342030 BMXP3420302	CPU 340-20 Ethernet CANopen	-	135	-

## RIO Drop Adapter Modules

Module		Average Current Consumption (mA)		
Reference	Description	3V3_BAC Output	24V_BAC Output	24V_SENSORS Output
BMXCRA31200	X80 standard EIO adapter	1,200	-	-
BMXCRA31210 (C)	X80 performance EIO adapter	1,200	-	-
BMECRA31210 (C)	8 isolated high-speed analog inputs	1,800	-	-

## DIO Drop Adapter Modules

Module		Average Current Consumption (mA)		
Reference	Description	3V3_BAC Output	24V_BAC Output	24V_SENSORS Output
BMXPRA0100	DIO drop adapter	-	95	-

## Analog X80 Modules

Module		Average Current Consumption (mA)		
Reference	Description	3V3_BAC Output	24V_BAC Output	24V_SENSORS Output
BMXAMI0410	4 isolated high-speed analog inputs	150	45	-
BMXAMI0800	8 non-isolated high-speed analog inputs	150	41	-
BMXAMI0810	8 isolated high-speed analog inputs	150	54	-
BMXAMM0600	4 channel analog	240	-	120

	inputs			
BMXAMO0210	2 isolated analog outputs	150	110	–
BMXAMO0410	4 isolated high-speed analog outputs	150	140	–
BMXAMO0802	8 non-isolated high-speed analog outputs	150	135	–
BMXART0414	4 isolated analog inputs	150	40	–
BMXART0814	8 isolated analog inputs	220	50	–
BMEAHI0812	8 high-density isolated fast analog inputs	400	40	–
BMEAHO0412	4 channel analog inputs	380	140	–

#### Communication X80 Modules

Module		Average Current Consumption (mA)		
Reference	Description	3V3_BAC Output	24V_BAC Output	24V_SENSORS Output
BMXNOE0100(H)	Ethernet 1 port 10/100 RJ45	-	90	-
BMXNOE0110	Ethernet 1 port 10/100 RJ45	-	90	-
BMXNOC0401	Ethernet 4 ports 10/100 RJ45	555	–	–
BMXNOR0200	Ethernet 2 ports 10/100 RJ45	–	95	–
BMENOC0301 BMENOC0321	Ethernet 3 ports 10/100 RJ45	1,800	–	–
BMXEIA0100	sub-D connector AS-interface master	160	–	–

#### Counting X80 Modules

Module		Average Current Consumption (mA)		
Reference	Description	3V3_BAC Output	24V_BAC Output	24V_SENSORS Output

BMXEHC0200	2 channel high speed counter	200	40	80
BMXEHC0800	8 channel high speed counter	200	–	80

## Discrete Input Modules

Module		Average Current Consumption (mA)		
Reference	Description	3V3_BAC Output	24V_BAC Output	24V_SENSORS Output
BMXDAI0805	8 discrete 200...240 Vac inputs	103	13	–
BMXDAI1602	16 discrete 24Vac/24Vdc inputs	90	–	60
BMXDAI1603	16 discrete 48 Vac inputs	90	–	60
BMXDAI1604	16 discrete 100...120 Vac inputs	90	–	–
BMXDDI1602	16 discrete 24 Vdc inputs	90	–	60
BMXDDI1603	16 discrete 48 Vdc inputs	75	–	135
BMXDDI1604T	16 discrete 125 Vdc inputs	75	–	135
BMXDDI3202K	32 discrete 24 Vdc inputs	140	–	110
BMXDDI6402K	64 discrete 24 Vdc inputs	200	–	110

## Discrete Output Modules

Module		Average Current Consumption (mA)		
Reference	Description	3V3_BAC Output	24V_BAC Output	24V_SENSORS Output
BMXDAO1605	16 discrete outputs	100	95	–
BMXDDO1602	16 discrete 0.5 A outputs	100	–	–
BMXDDO1612	16 discrete outputs	100	–	–

BMXDDO3202K	32 discrete 0.1 A outputs	150	–	–
BMXDDO6402K	64 discrete 0.1 A outputs	240	–	–
BMXDRA0804T	8 discrete isolated outputs	100	110	–
BMXDRA0805	8 discrete isolated outputs	100	55	–
BMXDRA1605	16 discrete outputs	100	95	–

### Discrete Input/Output Modules

Module		Average Current Consumption (mA)		
Reference	Description	3V3_BAC Output	24V_BAC Output	24V_SENSORS Output
BMXDDM16022	8 discrete 24 Vdc inputs and 8 discrete outputs	100	–	30
BMXDDM16025	8 discrete 24 Vdc inputs and 8 discrete outputs	100	50	30
BMXDDM3202K	16 discrete 24 Vdc inputs and 16 discrete outputs	150	–	55

### Motion Modules

Module		Average Current Consumption (mA)		
Reference	Description	3V3_BAC Output	24V_BAC Output	24V_SENSORS Output
BMXMSP0200	2 independent Pulse Train Output channels	200	150	–

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