

Introduction

BMXCPS●●●● power supply modules provide the power supply for each **BMXXBP●●00** Modicon™ M340™ rack and the modules installed on it.

The Modicon M340 power supply module offer includes:

- Three power supply modules for DC line supplies:
 - 24 V $\overline{\text{---}}$ isolated power supply module, **BMXCPS2010**
 - 24 to 48 V $\overline{\text{---}}$ isolated power supply module, **BMXCPS3020**
 - 125 V $\overline{\text{---}}$ power supply module, **BMXCPS3540T** (extended operating temperature -25° to +70°C)
- Two power supply modules for AC line supplies:
 - 100 to 240 V \sim , 20 W power supply module, **BMXCPS2000**
 - 100 to 240 V \sim , 36 W power supply module, **BMXCPS3500**

Description

The power supply module is selected according to:

- The electrical line supply: 24 V $\overline{\text{---}}$, 48 V $\overline{\text{---}}$, 125 V $\overline{\text{---}}$ or 100 to 240 V \sim
- The required power (see the power consumption table on page 7/16) (1)

BMXCPS●●●● power supply modules feature the following:

- 1 Display block is comprised of:
 - OK LED (green), lit if rack voltages are present and correct
 - 24 V LED (green), lit when the sensor voltage is present (BMXCPS2000/3500/3540T AC power supply modules only)
- 2 Pencil-point RESET push button for a cold restart of the application
- 3 2-way connector that can take a removable terminal block (cage clamp or spring-type) for connecting the alarm relay
- 4 5-way connector that can take a removable terminal block (cage clamp or spring-type) for connecting the following:
 - $\overline{\text{---}}$ or \sim line supply
 - Protective earth ground
 - Dedicated 24 V $\overline{\text{---}}$ power supply for the input sensors (for BMXCPS2000/3500/3540T AC power supply modules only)

Included with each power supply module:

- Set of two cage clamp removable terminal blocks (5-way and 2-way)
BMXXTSCPS10

To be ordered separately (if necessary):

- Set of two spring-type removable terminal blocks (5-way and 2-way)
BMXXTSCPS20

Functions

Alarm relay

The alarm relay incorporated in each power supply module has a volt-free contact, accessible on the front panel, on the 2-way connector.

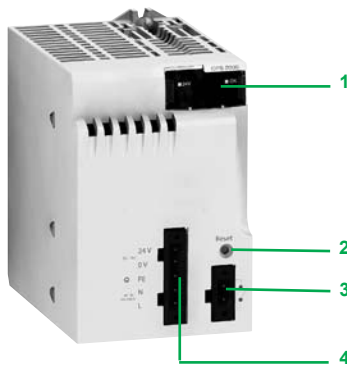
This relay is operated as follows:

In normal operation, with the PAC in RUN, the alarm relay is energized and its contact is closed (state 1).

The relay de-energizes and its associated contact opens (state 0) whenever the application stops, even partially, due to any of the following:

- Required interlock is not satisfied
- Incorrect rack output voltages
- Supply voltage missing or otherwise inoperative

(1) This power consumption calculation for the rack can also be performed by the Unity Pro programming software.



Functions (continued)

RESET push button

The power supply module in each rack has a RESET button on the front panel that, when pressed, triggers an initialization sequence on the processor and the modules in the rack it supplies.

Pressing this push button triggers a sequence of service signals, that is the same as that for:

- A power break, when the push button is pressed
- A power-up, when the push button is released

In terms of the application, these operations represent a cold start (forcing the I/O modules to state 0 and initializing the processor).

Sensor power supply

BMXCPS2000/3500 AC power supply modules and **BMXCPS3540T** DC power supply modules have an integrated 24 V $\bar{\text{---}}$ supply for powering the input sensors.

Connection to this 24 V $\bar{\text{---}}$ sensor power supply is via the 5-way connector on the front panel.

The available power depends on the power supply module (0.45 A or 0.9 A).

References

Each **BMXXBP●●00** rack requires a power supply module. These modules are inserted in the first two slots of each rack (marked CPS).

The power required to supply each rack depends on the type and number of modules installed in the rack. It is therefore necessary to draw up a power consumption table for each rack to determine which **BMXCPS●●●0** power supply module is correct for each rack (see page 7/16).

Power supply modules (1)

Line supply	Available power (2)				Nominal current 24 V $\bar{\text{---}}$ rack (3)	Reference	Weight kg
	3.3 V $\bar{\text{---}}$ (3)	24 V $\bar{\text{---}}$ rack (3)	24 V $\bar{\text{---}}$ sensors (4)	Total			
24 V $\bar{\text{---}}$ isolated	8.3 W	16.8 W	–	16.8 W	0.7A	BMXCPS2010	0.290
24 to 48 V $\bar{\text{---}}$ isolated	15 W	31.2 W	–	31.2 W	1.3A	BMXCPS3020	0.340
100 to 150 V $\bar{\text{---}}$	15 W	31.2 W	21.6 W	36 W (5)	1.3A	BMXCPS3540T (5)	0.340
100 to 240 V \sim	8.3 W	16.8 W	10.8 W	20 W	0.7A	BMXCPS2000	0.300
	15 W	31.2 W	21.6 W	36 W	1.3A	BMXCPS3500	0.360



BMXCPS2010/3020



BMXCPS2000/3500

Separate part

Description	Type	Composition	Reference	Weight kg
Set of 2 removable connectors	Spring-type	One 5-way terminal block and one 2-way terminal block	BMXXTSCPS20	0.015

Replacement part

Description	Type	Composition	Reference	Weight kg
Set of 2 removable connectors	Cage clamp	One 5-way terminal block and one 2-way terminal block	BMXXTSCPS10	0.020

(1) Include a set of 2 cage clamp removable connectors. Spring-type connectors available separately under reference **BMXXTSCPS20**.

(2) The sum of the power consumed on each voltage (3.3 V $\bar{\text{---}}$ and 24 V $\bar{\text{---}}$) must not exceed the available power of the module. See the power consumption table on page 7/16.

(3) 3.3 V $\bar{\text{---}}$ and 24 V $\bar{\text{---}}$ rack voltages for powering modules in the Modicon™ M340™ PAC rack.

(4) 24 V $\bar{\text{---}}$ sensor voltage for powering the input sensors (voltage available via the 2-way removable connector on the front panel).

(5) Extended operating temperature -25° to +70°C (with power derating at extreme temperatures: 27 W between -25° and 0°C and between 60° and 70°C).

Standards and certifications

Modicon™ M340™ PACs have been developed to conform to the principal national and international standards concerning electronic equipment for industrial automation systems.

- Requirements specific to programmable controllers: functional Specifications, immunity, resistance, safety, etc.: IEC/EN 61131-2, CSA 22.2 N° 142, UL 508.
- Merchant navy requirements of the main international bodies (with ABS, BV, DNV, GL, LR, RINA, RMRS): IACS (*International Association of Classification Societies*).
- Compliance with European Directives:
 - Low Voltage: 2006/95/EC,
 - Electromagnetic Compatibility: 2004/108/EC.
- Electrical qualities and self-extinguishing capacity of insulating materials: UL 746C, UL 94.
- Hazardous areas classification: CSA 22.2 No. 213, Class I, Division 2, Groups A, B, C and D.

Specifications

Service conditions and recommendations relating to environment

Temperature	Operation	° C	0 to + 60				
	Storage	° C	- 40 to + 85				
Relative humidity	Operation	%	93 to 95 without condensation according to IEC/EN 60068-2-30 Db				
	Storage	%	93 to 95 without condensation according to IEC/EN 60068-2-30 Db				
Altitude		m	0 to 4000, temperature derating from 3000 m: 1 °C / 400 m, equals to + 55 °C at 4000 m				
Supply voltage ~: according to IEC/EN 61131-2 ---: according to IACS E10 battery without charge	Power supply modules						
			BMXCPS2010	BMXCPS3020	BMXCPS3540T	BMXCPS2000	BMXCPS3500
	Nominal voltage	V	--- 24	--- 24 to 48	--- 24	~ 100 to 240	~ 100 to 240
	Limit voltages		--- 18 to 31.2	--- 18 to 62.4	--- 23.3 to 24.7	~ 85 to 264	~ 85 to 264
	Nominal frequencies	Hz	–	–	–	50/60	50/60
	Limit frequencies	Hz	–	–	–	47/63	47/63

Protective treatment of Modicon Premium PACs

Modicon M340 PACs meet the requirements of "TC" treatment (*Treatment for Climates*).

For installations in industrial production workshops or environments corresponding to "TH" treatment (*Treatment for Hot and humid environments*), Modicon M340 PACs are embedded in envelopes with a minimum IP 54 protection, in compliance with IEC/EN 60664 and NF C 20 040.

Modicon M340 PACs offer **protection to IP 20 level** and **protection against pins** (enclosed equipment) (1). They can be installed without an envelope in reserved-access areas up to and including **pollution level 2** (control room with no dust-producing machine or activity). The pollution level 2 does not take into account more severe environmental conditions such as: air pollution by dust, smoke, corrosive or radioactive particles, vapors or salts, attack by fungi, or insects.

(1) In the case where a position is not occupied by a module, install a **BMXXEM010** protection cover.