Modicon M340

Peripheral Remote I/O Adapter
BMX PRA 0100
User Manual

Original instructions

09/2020

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Schneider Electric

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All pertinent state, regional, and local safety regulations must be observed when installing and using this product. For reasons of safety and to help ensure compliance with documented system data, only the manufacturer should perform repairs to components.

When devices are used for applications with technical safety requirements, the relevant instructions must be followed.

Failure to use Schneider Electric software or approved software with our hardware products may result in injury, harm, or improper operating results.

Failure to observe this information can result in injury or equipment damage.

Table of Contents

Safety Information

Important Information

NOTICE

Read these instructions carefully, and look at the equipment to become familiar with the device before trying to install, operate, service, or maintain it. The following special messages may appear throughout this documentation or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.

The addition of this symbol to a “Danger” or “Warning” safety label indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

⚠ DANGER

DANGER indicates a hazardous situation which, if not avoided, **will result in** death or serious injury.

⚠ WARNING

WARNING indicates a hazardous situation which, if not avoided, **could result in** death or serious injury.

⚠ CAUTION

CAUTION indicates a hazardous situation which, if not avoided, **could result** in minor or moderate injury.

NOTICE

NOTICE is used to address practices not related to physical injury.

PLEASE NOTE

Electrical equipment should be installed, operated, serviced, and maintained only by qualified personnel. No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material.

A qualified person is one who has skills and knowledge related to the construction and operation of electrical equipment and its installation, and has received safety training to recognize and avoid the hazards involved.

BEFORE YOU BEGIN

Do not use this product on machinery lacking effective point-of-operation guarding. Lack of effective point-of-operation guarding on a machine can result in serious injury to the operator of that machine.

⚠ WARNING

UNGUARDED EQUIPMENT

- Do not use this software and related automation equipment on equipment which does not have point-of-operation protection.
- Do not reach into machinery during operation.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

This automation equipment and related software is used to control a variety of industrial processes. The type or model of automation equipment suitable for each application will vary depending on factors such as the control function required, degree of protection required, production methods, unusual conditions, government regulations, etc. In some applications, more than one processor may be required, as when backup redundancy is needed.

Only you, the user, machine builder or system integrator can be aware of all the conditions and factors present during setup, operation, and maintenance of the machine and, therefore, can determine the automation equipment and the related safeties and interlocks which can be properly used. When selecting automation and control equipment and related software for a particular application, you should refer to the applicable local and national standards and regulations. The National Safety Council's Accident Prevention Manual (nationally recognized in the United States of America) also provides much useful information.

In some applications, such as packaging machinery, additional operator protection such as point-of-operation guarding must be provided. This is necessary if the operator's hands and other parts of the body are free to enter the pinch points or other hazardous areas and serious injury can occur. Software products alone cannot protect an operator from injury. For this reason the software cannot be substituted for or take the place of point-of-operation protection.

Ensure that appropriate safeties and mechanical/electrical interlocks related to point-of-operation protection have been installed and are operational before placing the equipment into service. All interlocks and safeties related to point-of-operation protection must be coordinated with the related automation equipment and software programming.

NOTE: Coordination of safeties and mechanical/electrical interlocks for point-of-operation protection is outside the scope of the Function Block Library, System User Guide, or other implementation referenced in this documentation.

START-UP AND TEST

Before using electrical control and automation equipment for regular operation after installation, the system should be given a start-up test by qualified personnel to verify correct operation of the equipment. It is important that arrangements for such a check be made and that enough time is allowed to perform complete and satisfactory testing.

⚠ WARNING

EQUIPMENT OPERATION HAZARD

- Verify that all installation and set up procedures have been completed.
- Before operational tests are performed, remove all blocks or other temporary holding means used for shipment from all component devices.
- Remove tools, meters, and debris from equipment.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

Follow all start-up tests recommended in the equipment documentation. Store all equipment documentation for future references.

Software testing must be done in both simulated and real environments.

Verify that the completed system is free from all short circuits and temporary grounds that are not installed according to local regulations (according to the National Electrical Code in the U.S.A, for instance). If high-potential voltage testing is necessary, follow recommendations in equipment documentation to prevent accidental equipment damage.

Before energizing equipment:

- Remove tools, meters, and debris from equipment.
- Close the equipment enclosure door.
- Remove all temporary grounds from incoming power lines.
- Perform all start-up tests recommended by the manufacturer.

OPERATION AND ADJUSTMENTS

The following precautions are from the NEMA Standards Publication ICS 7.1-1995 (English version prevails):

- Regardless of the care exercised in the design and manufacture of equipment or in the selection and ratings of components, there are hazards that can be encountered if such equipment is improperly operated.
- It is sometimes possible to misadjust the equipment and thus produce unsatisfactory or unsafe operation. Always use the manufacturer's instructions as a guide for functional adjustments. Personnel who have access to these adjustments should be familiar with the equipment manufacturer's instructions and the machinery used with the electrical equipment.
- Only those operational adjustments actually required by the operator should be accessible to the operator. Access to other controls should be restricted to prevent unauthorized changes in operating characteristics.

About the Book

At a Glance

Document Scope

This manual describes the architectures targeted with the **BMX PRA 0100** module, the characteristics of this module and its installation. It assumes that the user understands how to link PLCs using Ethernet.

Validity Note

This documentation is valid for EcoStruxure™ Control Expert 15.0 or later.

The technical characteristics of the devices described in the present document also appear online. To access the information online:

Step	Action
1	Go to the Schneider Electric home page *www.schneider-electric.com*.
2	In the **Search** box type the reference of a product or the name of a product range. ● Do not include blank spaces in the reference or product range. ● To get information on grouping similar modules, use asterisks (*).
3	If you entered a reference, go to the **Product Datasheets** search results and click on the reference that interests you. If you entered the name of a product range, go to the **Product Ranges** search results and click on the product range that interests you.
4	If more than one reference appears in the **Products** search results, click on the reference that interests you.
5	Depending on the size of your screen, you may need to scroll down to see the datasheet.
6	To save or print a datasheet as a .pdf file, click **Download XXX product datasheet**.

The characteristics that are described in the present document should be the same as those characteristics that appear online. In line with our policy of constant improvement, we may revise content over time to improve clarity and accuracy. If you see a difference between the document and online information, use the online information as your reference.

Related Documents

Title of documentation	Reference number
EcoStruxure™ Control Expert, Operating Modes	33003101 (English), 33003102 (French), 33003103 (German), 33003104 (Spanish), 33003696 (Italian), 33003697 (Chinese)
EcoStruxure™ Control Expert, Program Languages and Structure, Reference Manual	35006144 (English), 35006145 (French), 35006146 (German), 35013361 (Italian), 35006147 (Spanish), 35013362 (Chinese)
Modicon M580, Hardware, Reference Manual	EIO0000001578 (English), EIO0000001579 (French), EIO0000001580 (German), EIO0000001582 (Italian), EIO0000001581 (Spanish), EIO0000001583 (Chinese)
Modicon M580 BMENOC0301/11, Ethernet Communication Module, Installation and Configuration Guide	HRB62665 (English), HRB65311 (French), HRB65313 (German), HRB65314 (Italian), HRB65315 (Spanish), HRB65316 (Chinese)
Modicon M580 BMENOC0321, Control Network Module, Installation and Configuration Guide	NVE24232 (English), NVE24233 (French), NVE24237 (German), NVE24240 (Italian), NVE24239 (Spanish), NVE24242 (Chinese)
Modicon M340, Processors, Setup Manual	35012676 (English), 35012677 (French), 35013351 (German), 35013352 (Italian), 35013353 (Spanish), 35013354 (Chinese)
Premium using EcoStruxure™ Control Expert, Hot Standby, User Manual	35012068 (English), 35012070 (French), 35012069 (German), 35012072 (Italian), 35012071 (Spanish), 35012073 (Chinese)

You can download these technical publications and other technical information from our website at *www.schneider-electric.com/en/download*.

Product Related Information

⚠ WARNING

UNINTENDED EQUIPMENT OPERATION

The application of this product requires expertise in the design and programming of control systems. Only persons with such expertise should be allowed to program, install, alter, and apply this product.

Follow all local and national safety codes and standards.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

Chapter 1
Architectures Targeted by the BMX PRA 0100 Module

Introduction

This chapter introduces the **BMX PRA 0100** module that allows X80 Remote I/O Stations to be managed by a Modicon M580, Modicon Quantum or Premium Master PLC.

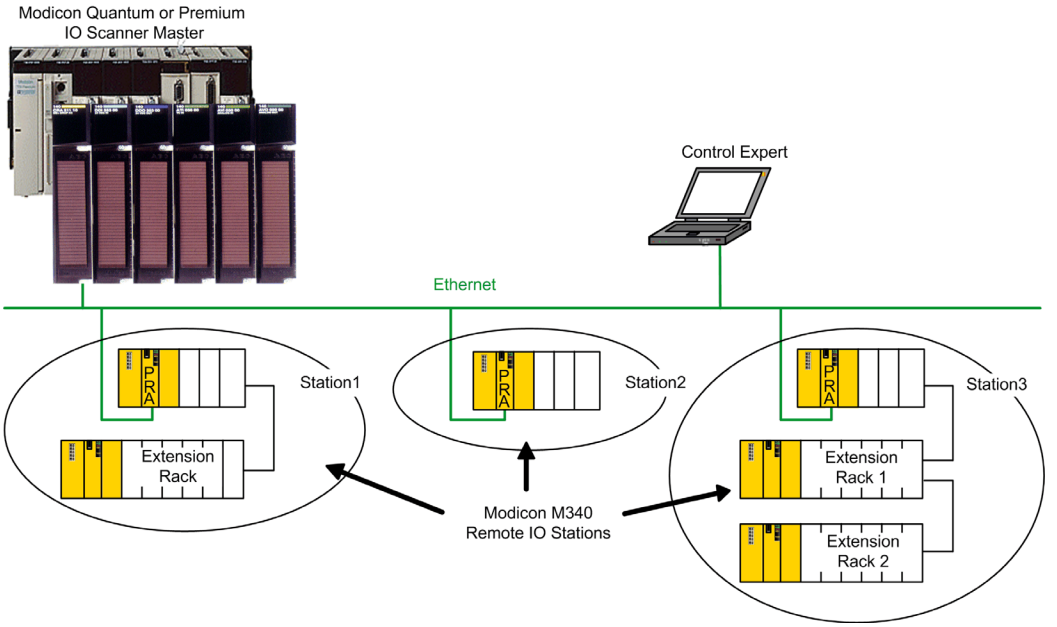
What Is in This Chapter?

This chapter contains the following topics:

Basic Architecture with One Master PLC

One Master Example

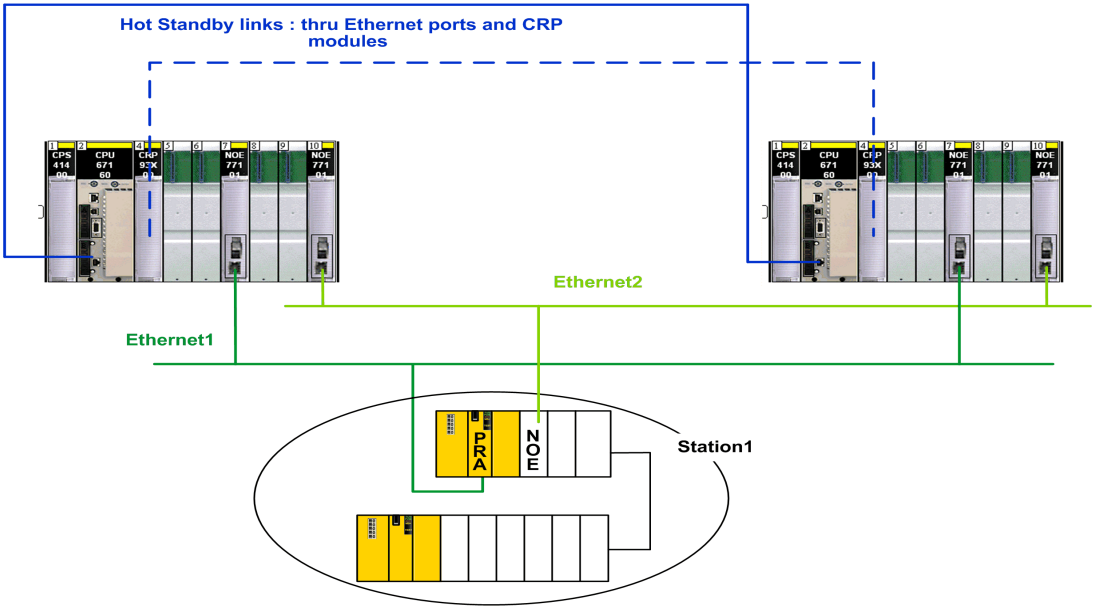
The following figure shows one Master PLC that controls 3 Remote I/O Stations.:



Redundant Master PLCs

Dual Link Example

The redundancy of the Dual Ethernet link to the Remote I/O Stations is performed with a **BMX NOE 0100** module and the embedded Ethernet port of the **BMX PRA 0100** module:



NOTE: Only redundancy of the Ethernet link (Ethernet medium) can be performed using this architecture. If the **BMX PRA 0100** module becomes inoperative, no exchange can be performed by the **BMX NOE 0100** module.

Restricted Capabilities of a M340 Remote I/O Station

Restricted Capabilities

For information about the restricted capabilities of a Remote I/O Station managed through a **BMX PRA 0100** module, refer to Restricted Capabilities of a Remote I/O Station *(see page 31)*.

BMX PRA 0100 Setup with Control Expert

Control Expert Application

The application manages the I/O objects to be exchanged with the Master PLC via the I/O scanning mechanism. For more information, refer to the BMX PRA 0100 Setup *(see page 37)*.

NOTE: For Modicon M580 OS version ≥2.40, the PRA Device DTM *(see page 16)* allow to configure Ethernet Modbus/TCP DIO drop with a **BMX PRA 0100** module.

BMXPRA0100 Device DTM

Overview

The configuration of an Ethernet Modbus/TCP DIO drop with a BMXPRA0100 module can be integrated in an M580 application.

The DTM for PRA device is available in the Control Expert DTM **Hardware Catalog** and can be added to the DTM connectivity tree of your M580 project at the following levels:
Host PC node (level 1): BMEP58_ECPU_EXT DTM
communication module node (level 2): BME NOC 03x1.y DTM

Adding the PRA DTM

Step	Action
1	Open the Control Expert DTM Browser (**Tool → DTM Browser**).
2	In the DTM Browser select the node where the PRA DTM is to be added.
3	Right-click and select **Add...**. This open the Add window (a subset of the **Hardware Catalog**).
4	In the Add window select the PRA Device DTM to be added to the DTM connectivity tree.
5	Either: ● Click on the **Add DTM** button ● Double-click on the selected DTM Results: The 4-tab DTM Properties of dialog opens.
6	Using the 4 tabs, verify that the correct DTM has been added to the DTM connectivity tree and verify its configuration. **NOTE:** The name of the PRA Device DTM instance is used as name of the corresponding PRA project. One time the PRA Device name has been defined at PRA Device DTM creation, it is forbidden to change it.
7	Click on the **OK** button to finish adding the PRA DTM to the network tree.

Launching the PRA DTM

Step	Action
1	Open the Control Expert **DTM Browser** (**Tool → DTM Browser**).
2	In the **DTM Browser**, find the name of the DTM that you assigned to the module PRA.
3	Double-click the DTM to open the **Pra Editor** window. **NOTE:** You can also right-click the master DTM and select **Open**.
4	Click **Launch PRA** button to launch a new Control Expert instance handling the PRA device.
5	Either: ● This is the first time Control Expert instance handling PRA is launched: ❍ You can open the default project template (`PRA_Template.XEF`) that configure a new BMXPRA0100 module. ❍ The first time the project is saved as `*.STU`, an association is created between the PRA DTM instance and the `*.STU` project. ● The next time the Control Expert instance handling the PRA device is launched, the last saved `*.STU` project is automatically opened. **NOTE:** Only one PRA device can be configured at a time.

Configuring the Data Exchange Mechanism

The data exchange mechanism from PRA to M580 is managed by the PRA DTM through its master DTM:

Step	Action
1	Open the Control Expert **DTM Browser** (**Tool → DTM Browser**).
2	Find the master DTM where the PRA DTM has been added.
3	Double-click the master DTM to open the configuration window. **NOTE:** You can also right-click the master DTM and select **Open**.
4	In the navigation pane, expand (+) the **Device List** to see the associated devices.
5	Select the PRA device form the **Device List** to view the **Properties**, **Address Setting**, and **Request Setting** tabs.
6	Select the **Request Setting** tab to configure the data exchange mechanism.

For more details on request configuration, when the PRA DTM is added under:

- M580 CPU, refer to *Request Setting Tab (see Modicon M580, Hardware, Reference Manual)* description.
- BMENOC0301 or BMENOC0311 communication module, refer to *Request Setting Tab (see Modicon M580, BMENOC0301/0311 Ethernet Communications Module, Installation and Configuration Guide)* description.
- BMENOC0321 communication module, refer to *Request Setting Tab (see Modicon M580, BMENOC0321 Control Network Module, Installation and Configuration Guide)* description.

Limitations

In Control Expert DTM browser of your M580 project, the following commands in the contextual menu of the PRA DTM are disabled:

- **Connect**
- **Load data from device**
- **Store data to device**
- **Copy**
- **Device menu → Additional functions → about**

Compatibilty

To be compatible with future versions of Control Expert, you have to chose one of the following methods.

Method using Archived Application Files (*.STA):

Step	Action
1	Before updating the version of Control Expert: ● Archive each PRA projects in `STA` format ● Archive the M580 project in `STA` format
2	Update the version of Control Expert.
3	Open the archived M580 project in `STA` format and all archived PRA projects in `STA` format.

Method Application Exchange File (*.XEF):

Step	Action
1	Before updating the version of Control Expert: ● Export each PRA projects in `XEF` format ● Export the M580 project in `ZEF` format
2	Update the version of Control Expert.
3	Import the M580 project in `ZEF` format and all PRA projects in `XEF` format.

Chapter 2
Introduction to the BMX PRA 0100 Module

Introduction

This chapter provides introductory information about the **BMX PRA 0100** module.

What Is in This Chapter?

This chapter contains the following topics:

Introduction

Installation

The **BMX PRA 0100** module is installed in a BMX XBP •••• or BME XBP •••• rack. These racks must be supplied with a power supply module.

Functions

A **BMX PRA 0100** module manages the entire Peripheral Remote IO Station, which includes the following elements:

- Any discrete input/output modules
- Any analogue input/output modules
- One **BMX NOE 0100** Ethernet module (if necessary)

Main Characteristics

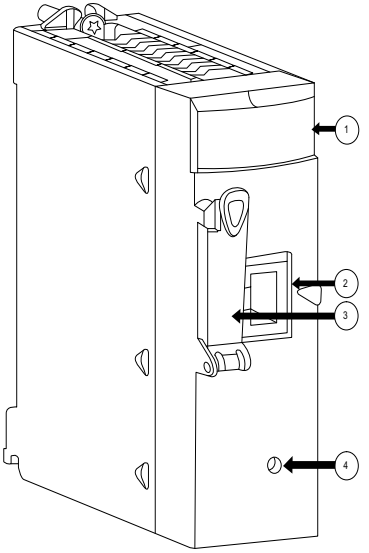
The following table shows the main characteristics of the **BMX PRA 0100** module:

Peripheral Remote IO Adaptor	Global Maximum Number of Digital Inputs/Outputs	Global Maximum Number of Analog Inputs/Outputs	Total Memory Size	Integrated Ethernet Connections
BMX PRA 0100	1024	256	448 KB: ● 96 KB for data. ● 352 KB for application (96 KB for system and 256 for the rest)	1

BMX PRA 0100 Physical Description

Illustration

The following figure is a **BMX PRA 0100** module:



1 Display panel
2 Ethernet port
3 Protected memory card port
4 unused

Ethernet Link

In the Introduction to BMX P34 xxxx Processors documentation, refer to the Ethernet link *(see Modicon M340, Processors, Setup Manual)* section.

Chapter 3
General Characteristics of the BMX PRA 0100 Module

Introduction

This chapter provides general information about the **BMX PRA 0100** module.

What Is in This Chapter?

This chapter contains the following topics:

Electrical Characteristics of the BMX PRA 0100 Module

Peripheral Remote I/O Module Power Consumption

The following table shows the power consumption for the **BMX PRA 0100** module:

Peripheral Remote I/O Adaptor	Average Consumption
BMX PRA 0100	95 mA

Peripheral Remote I/O Module Dissipated Power

The following table shows the average dissipated power for the **BMX PRA 0100** module:

Peripheral Remote I/O Adaptor	Dissipated Power
BMX PRA 0100	2.3 W

General Characteristics of the BMX PRA 0100

Altitude Operating Conditions

The characteristics apply to the module **BMX PRA 0100** for use at altitude up to 2000 m (6560 ft). When the module operates above 2000 m (6560 ft), apply additional derating.

For detailed information, refer to chapter *Operating and Storage Conditions (see Modicon M580, M340, and X80 I/O Platforms, Standards and Certifications)*.

Module Characteristics

The following table shows the general characteristics for the **BMX PRA 0100** module:

Characteristics			Available
Functions	Maximum number of	Digitial rack inputs/outputs	1024
		Analog rack inputs/outputs	256
		Expert channels	0
		Ethernet channels	2
		AS-i Field Bus	0
		Simultaneous communication EF	16
	Maximum number of modules	USB	0
		Embedded Serial Modbus link port	0
		Embedded Ethernet port	1
	Savable real-time clock		Yes
Savable Application Data Memory Capacity			96 KB
Application Structure	MAST task		1
	FAST task		0
	Event processing		0
Application Code Execution Speed	Internal RAM	100% Boolean	8.1 Kins[1]/ms
		65% Boolean + 35% digital	6.4 Kins[1]/ms
Execution Time	One basic Boolean instruction		0.12 µs
	One basic digital instruction		0.17 µs
Operating temperature			0...60 °C (32...140 °F)

1 Kins: 1024 instructions (list type)

Memory Characteristics of the BMX PRA 0100 Module

Memory Size of Located Data

The following table shows maximum memory size of the located data in the **BMX PRA 0100**:

Type of Object	Address	Maximum Size	Default Size
Internal bits	%Mi	2000	512
Input/Output bits	%Ir.m.c %Qr.m.c	(1)	(1)
System bits	%Si	128	128
Internal words	%MWi	3000	1024
Constant words	%KWi	512	128
System words	%SWi	168	168
(1) Depends on the equipment configuration that is declared (input/output modules).			

Unlocated Data

The types of unlocated Data are:

- Elementary Data Types (EDT)
- Derived Data Types (DDT)
- DFB and EFB function block data

Total Data Memory

The total size of located and non-located data is limited to 96 Kilobytes for the **BMX PRA 0100** module.

Chapter 4
Installation of the BMX PRA 0100 Module

Installation of the BMX PRA 0100 module

BMX P34 CPUs

For installation details, refer to Installation of BMX P34 xxxx Processors *(see Modicon M340, Processors, Setup Manual)*. During the installation be sure to follow recommendations about the **BMX PRA 0100** limitations *(see page 31)* (for example, an SD-card with a file storage system cannot be installed in this module).

Chapter 5
Diagnostics of the BMX PRA 0100 Module

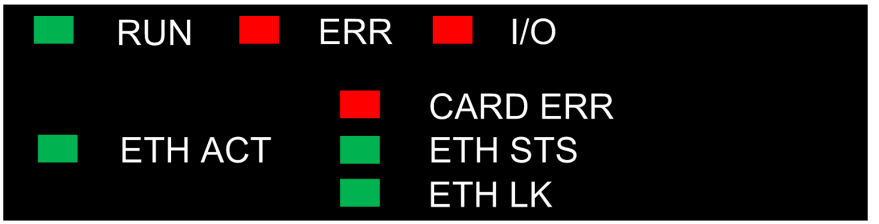
BMX PRA 0100 DIagnostics

BMX P34 CPU Diagnostics

For information about the **BMX PRA 0100** diagnostics, refer to BMX P34 xxxx Processors Diagnostics *(see Premium using EcoStruxure™ Control Expert, Hot Standby, User Manual)*.

BMX PRA 0100 Display

The **BMX PRA 0100** display is different from the BMX P34 CPU displays as shown in the following figure:



Chapter 6
Restricted Capabilities of a Remote I/O Station with BMX PRA 0100

Introduction

This chapter includes information about the capabilities, modes of operation, and compatibility of a Modicon M340 Remote I/O Station with the **BMX PRA 0100** module.

What Is in This Chapter?

This chapter contains the following topics:

Characteristics

Introduction

The **BMX PRA 0100** language and configuration capabilities are almost the same as those of the BMX P34 CPUs *(see Modicon M340, Processors, Setup Manual)*: Unlocated Data, DDT, IODDT, Array, Floating, EFB, FBD, Diagnostics, Cold start only, etc.

The exceptions for the **BMX PRA 0100** module are given below in the Restrictions section *(see page 32)*.

Remote I/O Station Capabilities

A Modicon M340 Remote I/O Station with the **BMX PRA 0100** module has the following characteristics:

Characteristic	Available
Configuration Capabilities	
Number of racks (4-, 6-, 8- or 12-slot)	4
Digital channels	1024
Analog channels	256
Ethernet networks	2
Counting channels	0
Motion channels	0
CANopen fieldbus	0
AS-Interface	0
Communication Capabilities	
Embedded Serial Link ports	0
USB ports	0
Serial Link ports (**BMX NOM 0200** module)[2]	4
FactoryCast (**BMX NOE 0110** module)	0
Global Data Service[1]	None
I/O Scanner Master[1]	None
Application Structure	
MAST Task	1
FAST Task	0
I/O Events	0
Timer Events	0
Symbols Database support	None

Characteristic	Available
Memory Service	
Support of SD-Card without file system (**BMX RMS 008MP**)	Yes
Support of SD-Card with file system	No
Support of Application backup	Yes
Other Services	
WEB Services	None

1 When a **BMX NOE 0100** module is configured in the Remote I/O Station, the module cannot perform these services.
2 A maximum of 4 configured channels (with 2 to 4 modules).

Application Compatibility

SD Card Application Restriction

An application on a SD Card designed for the **BMX PRA 0100** module can only be executed on a **BMX PRA 0100** module. It cannot be executed on the BMX P34 CPUs.

Import/Export mechanism

The master `*.STA` file generated in Unity Pro v6.0 cannot be fully opened in Control Expert. Slave projects are saved in `*.STU` format that are not compatible when updating Unity Pro/Control Expert *(see EcoStruxure™ Control Expert, Program Languages and Structure, Reference Manual)* from one version to another.

Here below is described the way to fully retrieve the master *.sta and the *.stu slave applications:

In Unity Pro v6.0

- Export Master BMX PRA 0100 Project *(see EcoStruxure™ Control Expert, Program Languages and Structure, Reference Manual)*
  - `*.ZEF` file (Full Application Exchange Files) to import a global project with global DTMs configuration
  - `*.XEF` file (Application Exchange Files) to import a global project without global DTMs configuration
- Export slave BMX PRA 0100 project
  For All BMX PRA 0100 restore the slave project:
  - launch the **I/O Scanning**
  - select a slave BMX PRA 0100
    A new Unity Pro window opens
  - **File → Export**
  - The global project `*.ZEF` or `*.XEF` files

In Control Expert

- Restore master project File *(see EcoStruxure™ Control Expert, Program Languages and Structure, Reference Manual)*
  - **File → Open**
  - The global project `*.ZEF` or `*.XEF` files saved in Unity Pro v6.0 to be selected
- Restore slave project files
  For All BMX PRA 0100 restore the slave project:
  - launch the **I/O Scanning**
  - select a slave BMX PRA 0100
    A new Control Expert window opens
  - **File → Open**
  - The global project `*.ZEF` or `*.XEF` files saved in Unity Pro v6.0 have to be selected

- Save Project *(see EcoStruxure™ Control Expert, Program Languages and Structure, Reference Manual)*

NOTE: This migration can also be achieved using **Save Archive**.

In Unity Pro v6.0

- Save the master Archive *(see EcoStruxure™ Control Expert, Program Languages and Structure, Reference Manual)*
  - **File → Save Archive**
- Save the slave Archive *(see EcoStruxure™ Control Expert, Program Languages and Structure, Reference Manual)*
  - launch the **I/O Scanning**
  - select a slave BMX PRA 0100
    A new Unity Pro window open
  - **File → Save Archive**

In Control Expert

- Open master Archive *(see EcoStruxure™ Control Expert, Operating Modes)*
  - **File → Open**
  - The archive `*.STA` file saved in Unity Pro v6.0 have to be selected
- Open slave Archive
  - launch the **I/O Scanning**
  - select a slave BMX PRA 0100
    A new Control Expert window opens
  - **File → Open**
  - The archive `*.STA` file saved in Unity Pro v6.0 have to be selected
- Save Archive *(see EcoStruxure™ Control Expert, Program Languages and Structure, Reference Manual)*

Chapter 7
BMX PRA 0100 Setup

Introduction

This chapter explains how to use Control Expert and firmware update tool and how to set up the **BMX PRA 0100** module.

What Is in This Chapter?

This chapter contains the following sections:

Section 7.1
Setup Using Control Expert

Introduction

This section provides information about configuring, programming and connecting the **BMX PRA 0100** module.

What Is in This Section?

This section contains the following topics:

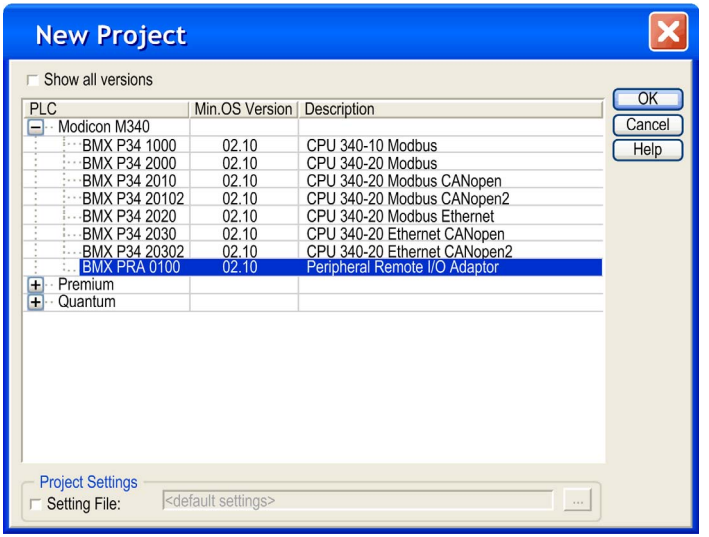
Configuring and Programming the BMX PRA 0100 Module

Introduction

The **BMX PRA 0100** module is configured and programmed through Control Expert.

CPU Catalogue

The **BMX PRA 0100** module version 2.10 is a part of the Control Expert standard CPU catalogue:



Connecting Control Expert to the BMX PRA 0100 Module

Connecting Media

Ethernet is the only media for connecting Control Expert to the **BMX PRA 0100** module. Refer to the Ethernet CPU or NOE modules documentation for details on how to operate such a connection, particularly how to initialize IP addresses.

Control Expert manages the **BMX PRA 0100** connected modes exactly as it does with the BMX P34 CPUs.

Section 7.2
Setup of the BMX PRA 0100 Module

Introduction

This section provides information about installing a **BMX PRA 0100** module and the certificates that apply to it.

What Is in This Section?

This section contains the following topics:

BMX PRA 0100 Installation Procedures

Installation

To install the **BMX PRA 0100** module, refer to Installing the BMX P34 xxxx Processors *(see Modicon M340, Processors, Setup Manual)*.

Standards and Certifications

Download

Click the link that corresponds to your preferred language to download standards and certifications (PDF format) that apply to the modules in this product line:

Title	Languages
Modicon M580, M340, and X80 I/O Platforms, Standards and Certifications	• English: *EIO0000002726* • French: *EIO0000002727* • German: *EIO0000002728* • Italian: *EIO0000002730* • Spanish: *EIO0000002729* • Chinese: *EIO0000002731*

Section 7.3
Using Firmware Update Tool

Introduction

This section provides information about connecting the Automation Device Maintenance or Unity Loader software and about firmware updates.

What Is in This Section?

This section contains the following topics:

Firmware Update with Automation Device Maintenance

Overview

The EcoStruxure™ Automation Device Maintenance is a standalone tool that allows and simplifies the firmware update of devices in a plant (single or multiple).

The tool supports the following features:

- Automatic device discovery
- Manual device identification
- Certificate management
- Firmware update for multiple devices simultaneously

NOTE: For a description of the download procedure, refer to the *EcoStruxure™ Automation Device Maintenance, User Guide*.

Firmware Update with Unity Loader

Connecting Unity Loader

Ethernet is the only media used for connecting the Unity Loader software to the **BMX PRA 0100** module.

Unity Loader Management

The Unity Loader software manages the **BMX PRA 0100** module as a BMX P34 xxxx processor. It displays the correct product designation, "BMXPRA0100 Peripheral Remote I/O Adaptor", on both the ldx file and the connected device sides.

For the description of the download procedure, refer to chapter *Update Procedure with Unity Loader (see Modicon M340, Update Procedure, User Guide)* or refer to *Unity Loader, User Guide*.

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