## General Specifications

| | |
|---|---|
| Operating Temperature | 0° to 60°C (32° to 140°F) |
| Storage Temperature | -20° to 85°C (-4° to 185°F) |
| Humidity | 5 to 95% (non-condensing) |
| Environmental Air | No corrosive gases permitted |
| Vibration | IEC60068-2-6 (Test Fc) |
| Shock | IEC60068-2-27 (Test Ea) |
| Enclosure Type | Open Equipment |
| Agency Approvals | UL61010-2  - UL File # E185989 Canada and USA |
| | CE Compliant EN61131-2* |
| Noise Immunity | NEMA ICS3-304 |
| EU Directive | See the "EU Directive" topic in the Help File |
| Heat Dissipation | 8.6W Max |
| Weight | 170g (6 oz) |
| Software Version | Netedit 3 Version 3.15 or later |

*Meets EMC and Safety requirements. See the D.O.C. for details.

## Power Supply Specifications

| | |
|---|---|
| Nominal Voltage Range* | 12–24 VDC |
| Input Voltage Range (Tolerance)* | 10–36 VDC |
| Maximum Input Voltage Ripple | <+/- 10% |
| Maximum Input Power | 30W |
| Cold Start Inrush Current | 5A, 2ms |
| Maximum Inrush Current (Hot Start) | 5A, 2ms |
| Internal Input Protection | Reverse Polarity Protection and Undervoltage |
| Voltage Withstand  (dielectric) | 1500VAC Power Inputs to Ground applied for 1 minute |
| Replacement Connector | ADC Part # BX-RTB03 |

Removable Connector Included

| Pinout | Connection |
|---|---|
| 1 | GND |
| 2 | PWR – |
| 3 | PWR + |

*Class 2 or LPS Power Supply required.



# BX-MBIO-M-D

**BRX Modbus
I/O Controller**
24 VDC required, serial port, Ethernet port.

**Power and serial terminal blocks included.**

## Ethernet Specifications

| | |
|---|---|
| Port Name | Ethernet |
| Description | Standard transformer isolated Ethernet port with built-in surge protection. |
| Transfer Rate | 10Mbps and 100Mbps |
| Port Status LED | LED is solid when network LINK is established. LED flashes when port is active (ACT). |
| Supported Protocols | Modbus TCP/IP (Server) |
| Cable Recommendation | C5E-STxxx-xx from AutomationDirect.com |
| Port Type | RJ45, Category 5, 10/100 BASE-T, Auto Crossover |
| Ethernet Port Numbers: Modbus TCP/IP (Server) | 502, TCP |

## Status Indicators

| Indicator | Status | Description |
|---|---|---|
| PWR | OFF | Base Power is OFF |
| | GREEN | Base Power is Good |
| OK | GREEN | Controller is Functioning Normally |
| | GREEN (Blinking) | Reset Mode (Booter without OS) |
| | YELLOW | Analog Module Mismatch |
| | OFF | Controller HW Error or Power is Off |
| ERR | OFF | Controller is Functioning Normally |
| | RED | Controller HW Error or Communications Watchdog Timeout |
| | RED (Blinking) | Reset Mode (Booter without OS) |
| TX | OFF | No Transmit Activity |
| | GREEN (Blinking) | Data is being Transmitted |
| RX | OFF | No Receive Activity |
| | GREEN (Blinking) | Data is being Received |
| LNK | OFF | No Ethernet Link |
| | GREEN | Ethernet Link is Good |
| ACT | OFF | No Ethernet Activity |
| | GREEN (Blinking) | Ethernet Activity |

**WARNING:** To minimize the risk of potential safety problems, you should follow all applicable local and national codes that regulate the installation and operation of your equipment. These codes vary from area to area and it is your responsibility to determine which codes should be followed, and to verify that the equipment, installation, and operation are in compliance with the latest revision of these codes.

*Equipment damage or serious injury to personnel can result from the failure to follow all applicable codes and standards. We do not guarantee the products described in this publication are suitable for your particular application, nor do we assume any responsibility for your product design, installation, or operation.*

If you have any questions concerning the installation or operation of this equipment, or if you need additional information, please call Technical Support at 770-844-4200.

This publication is based on information that was available at the time it was printed. At AutomationDirect.com® we constantly strive to improve our products and services, so we reserve the right to make changes to the products and/or publications at any time without notice and without any obligation. This publication may also discuss features that may not be available in certain revisions of the product.

Do-more! BRX Manual available at www. automationdirect.com/pn/doc/manual/ BX-MBIO-M-D



## IMPORTANT!

### Hot-Swapping Information
**Note: This device cannot be Hot Swapped.**

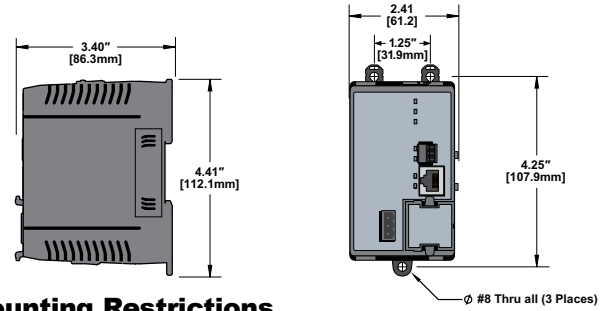| Document Name | Edition/Revision | Date |
|---|---|---|
| BX-MBIO-M-D | 1st Ed. RevB | 9/8/2021 |

**NOTE:** DIP switches located in this compartment are used for debug and recovery functions only. Please refer to the BRX User Manual for full instructions on using these switches.
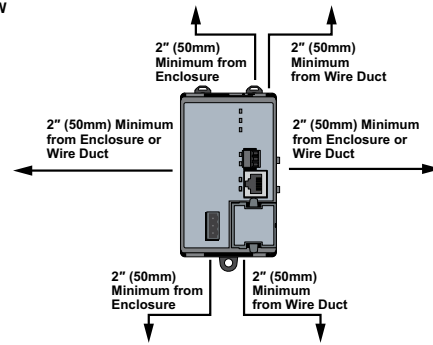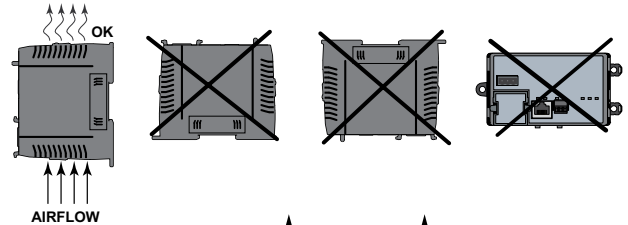


Serial Port

Power Connection

Ethernet Port

Pluggable Option Module (POM) Slot option Is not supported.

BX-MBIO-M-D
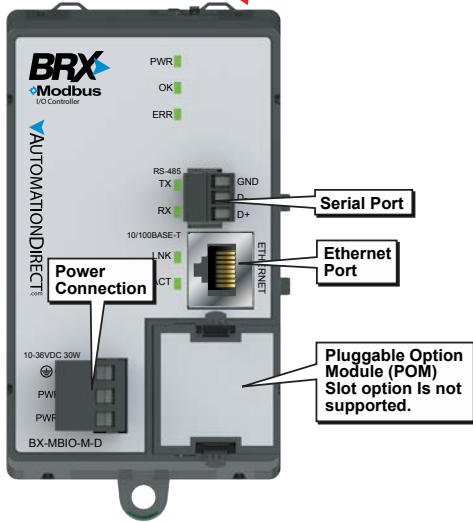
# Dimensional Information

Note: Drawings are for reference only. Shown without terminal blocks.



3.40" [86.3mm]

4.41" [112.1mm]

2.41 [61.2]

1.25" [31.9mm]

4.25" [107.9mm]

Ø #8 Thru all (3 Places)

## Mounting Restrictions



OK

AIRFLOW

2" (50mm) Minimum from Enclosure

2" (50mm) Minimum from Wire Duct

2" (50mm) Minimum from Enclosure or Wire Duct

2" (50mm) Minimum from Enclosure or Wire Duct

2" (50mm) Minimum from Enclosure

2" (50mm) Minimum from Wire Duct

## Built-in RS-485 Port Specifications

| | |
|---|---|
| Port Name | RS-485 |
| Description | Non-isolated serial port that can communicate via RS-485. Includes ESD protection and built-in surge protection.<br>120Ω Termination resistor is available (software selectable). |
| Supported Protocols | Modbus RTU (Slave) |
| Data Rates | 1200, 2400, 4800, 9600, 19200, 38400, 57600, and 115200 |
| Default Settings | RS-485, 115200 bps, No Parity, 8 Data Bits, 1 Stop Bit, Station #1 |
| Port Type | 3-pin terminal strip 3.5mm pitch |
| RS-485 Station Addresses | 1-247 |
| Cable Recommendations | RS-485 use L19827-XXX from AutomationDirect.com |
| Replacement Connector | ADC Part # BX-RTB03S |



| Pinout | RS485 |
|---|---|
| 1 | GND |
| 2 | D- |
| 3 | D+ |

TX RX GND D- D+ RS485
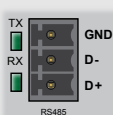
Removable connector included.

## Terminal Block Connector Specifications

| Part Number | BX-RTB03S | BX-RTB03 | BX-RTB03-1 |
|---|---|---|---|
| Connector Type | Screw Type-90° | Screw Type-90° | Spring Clamp Type-180° |
| Wire Exit | 180° | 180° | 180° |
| Pitch | 3.5mm | 5.0mm | 5.0mm |
| Screw Size | M2 | M2.5 | N/A |
| Recommended Screw torque | <1.77Lb-in (0.2 N-m) | < 3.98 Lb-in (0.45 N-m) | N/A |
| Screwdriver Blade Width | 2.5mm | 3.5mm | 3.5mm |
| Wire Gauge (Single Wire) | 28-16 AWG | 28-12 AWG | 28-14 AWG |
| Wire Gauge (Two Wires) | 28-16 AWG | 28-16 AWG | 28-16 AWG (Dual Wire Ferrule Required) |
| Wire Strip Length | 0.24in (6mm) | 0.3in (7.5mm) | 0.37in (9.5mm) |
| Equiv. Dinkle part # | EC350V-03P-BK | 5ESDV-03P-BK | 5ESDSR-03P-BK |