BX ME WIRING



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BX ME Micro PLC Unit (MPU) Overview

The BX ME Micro PLC Unit (MPUs) includes two different versions. Both have the same appearance and basic features, the only difference being that one unit is externally powered with 12-24 VDC and the other unit is externally powered with 120-240 VAC.

The units have no built-in I/O points. This allows use as a standalone controller unit with no I/O or you can customize the I/O to meet the needs of your application by adding BRX Expansion Modules. All BX ME MPUs can expand their capacity with the addition of as many as eight (8) BRX Expansion Modules, allowing more flexibility while keeping control cost down.



120-240 VAC



BX-DM1E-M-D 12-24 VDC

General Specifications

- Support for 8 additional Expansion Modules (Expansion modules are discussed in Chapters 7, 8 and 9).
- No built-in discrete I/O points
- No built-in analog I/O points
- Serial port for RS232/485 communications
- RJ45 port for Ethernet communications
- microSD slot
- Pluggable Option Module (POM) for an additional communications port

Power Supply Connector

The power supply terminal block connectors are included with this MPU. The power supply connectors are a screw type, removable terminal block. Replacement connectors and specifications are listed in the tables that follow.

| BX-DM1E-M AC Power Supply Connector Specifications | | | |
|--|-------------------------------|---|---|
| Part Number | BX-RTB05 (Included w/Unit) | BX-RTB05-1 | BX-RTB05-2 |
| Connector Type | Screw Type-90 deg | Spring Clamp Type-180 deg | Screw Type-180 deg |
| Wire Exit | 180 deg | 180 deg | 180 deg |
| Pitch | 5.0 mm | 5.0 mm | 5.0 mm |
| Screw Size | M2.5 | N/A | M2.5 |
| Recommended Screw Torque | < 3.98 lb·in (0.45 N·m) | N/A | < 3.98 lb·in (0.45 N·m) |
| Screwdriver Blade Width | 3.5 mm | 3.5 mm | 3.5 mm |
| Wire Gauge (Single wire) | 28–12 AWG | 28–14 AWG | 28–14 AWG |
| Wire Gauge (Two wire) | 28–16 AWG | 28–16 AWG (Dual Wire Ferrule Required) | 28–16 AWG (Dual Wire Ferrule Required) |
| Wire Strip Length | 0.3 in (7.5 mm) | 0.37 in (9.5 mm) | 0.37 in (9.5 mm) |
| Equiv. Dinkle P/N | 5ESDV-05P-BK | 5ESDSR-05P-BK | 5ESDSR-05P-BK |







BX-DM1E-M-D DC Power Supply Connector Specifications Part Number BX-RTB03 (Included w/Unit) **BX-RTB03-1 BX-RTB03-2** Spring Clamp Type-180 deg Connector Type Screw Type-90 deg Screw Type-180 deg Wire Exit 180 deg 180 deg 180 deg Pitch 5.0 mm 5.0 mm 5.0 mm Screw Size M2.5 N/A M2.5 Recommended Screw Torque < 3.98 lb·in (0.45 N·m) N/A < 3.98 lb·in (0.45 N·m) Screwdriver Blade Width 3.5 mm 3.5 mm 3.5 mm Wire Gauge (Single wire) 28-12 AWG 28-14 AWG 28-12 AWG 28-16 AWG Wire Gauge (Two wires) 28-16 AWG 28-16 AWG (Dual Wire Ferrule Required) Wire Strip Length 0.3 in (7.5 mm) 0.37 in (9.5 mm) 0.3 in (7.5 mm) Equiv. Dinkle P/N 5ESDV-03P-BK 5ESDSR-03P-BK 5ESDF-03P







BX-DM1E-M Wiring

- Serial port for RS232/485 communications
- RJ45 port for Ethernet communications
- microSD slot
- Pluggable Option Module (POM) for an additional communications port
- No built-in discrete I/O
- No built-in analog I/O
- Requires an external 120–240 VAC external power supply.
- Includes an integral 24VDC auxiliary output power supply.





NOTE: Eight (8) Expansion Modules can be connected to add I/O capability.

BX-DM1E-M Wiring, Continued

Power Supply Specifications

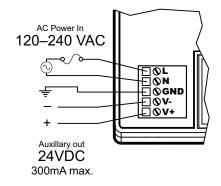
| Power Supply Specificat | ions |
|--|---|
| Nominal Voltage Range | 120–240 VAC |
| Input Voltage Range (Tolerance) | 85–264 VAC |
| Rated Operating Frequency | 47–63 Hz |
| Maximum Input Power | 40VA |
| Cold Start Inrush Current | 1.5 A, 2ms |
| Maximum Inrush Current (Hot Start) | 1.5 A, 2ms |
| Internal Input Fuse Protection | Micro fuse 250V, 2A Non-replaceable |
| Acceptable External Power Drop Time | 10ms |
| Under Input Voltage Lock-out | 80VAC |
| Input Transient Protection | Input choke and line filter |
| Output Protection for Over Current, Over Voltage, and Over Temperature | Self resetting |
| Heat Dissipation | 10.8 W Max |
| Isolated User 24VDC Output | 24VDC @ 0.3 A max, <1V P-P Ripple, Integrated self-resetting short circuit protection |
| Voltage Withstand (dielectric) | 1500VAC Power Inputs to Ground applied for 1 minute 1500VAC Ground to 24VDC Output applied for 1 minute |
| Insulation Resistance | >10MΩ @ 500VDC |
| Software Version Required | Do-more! Designer version 2.0 or later |

Power Supply Connections

| Pin | Connection |
|-----|------------|
| 1 | L |
| 2 | Ν |
| 3 | GND |
| 4 | V- |
| 5 | V+ |



ADC Part # BX-RTB05





WARNING: Do not exceed the 24VDC auxiliary power supply load limit of 300mA.



WARNING: The BRX System MUST have a proper earth ground. Do not operate the BRX MPU without proper earth grounding.

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BX-DM1E-M-D Wiring

- Serial port for RS232/485 communications
- RJ45 port for Ethernet communications
- microSD slot
- Pluggable Option Module (POM) for an additional communications port
- No built-in discrete I/O
- No built-in analog I/O
- Requires an external 12–24 VDC external power supply.
- No integral 24VDC auxiliary output power supply.



BX-DM1E-M-D



NOTE: Eight (8) Expansion Modules can be connected to add I/O capability.

BX-DM1E-M-D Wiring, Continued

Power Supply Specifications

| 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 lockout via transistor circuit | |
| Acceptable External Power Drop Time | 10ms | |
| Under Input Voltage Lock-out | <9VDC | |
| Output Protection for Over Current, Over Voltage, and Over Temperature | Self resetting | |
| Heat Dissipation | 8.6 W Max | |
| Isolated User 24VDC Output | None | |
| Voltage Withstand (dielectric) | 1500VAC power Inputs to ground applied for 1 minute | |
| Insulation Resistance | >10MΩ @ 500VDC | |
| Software Version Required | Do-more! Designer version 2.0 or later | |

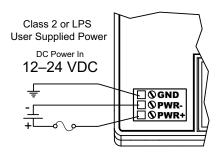
^{*} Class 2 or LPS Power Supply required.

Power Supply Connections

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



Removable Connector Included ADC Part # BX-RTB03





WARNING: The BRX System MUST have a proper earth ground. Do not operate the BRX MPU without proper earth grounding.

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Notes: