

# 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.



**BX-DM1E-M**  
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-RTB05



BX-RTB05-1



BX-RTB05-2

BX-DM1E-M-D DC Power Supply Connector Specifications			
Part Number	BX-RTB03 (Included w/Unit)	BX-RTB03-1	BX-RTB03-2
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	28–12 AWG
Wire Gauge (Two wires)	28–16 AWG	28–16 AWG (Dual Wire Ferrule Required)	28–16 AWG
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-RTB03



BX-RTB03-1



BX-RTB03-2

## 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.



**BX-DM1E-M**



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

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## BX-DM1E-M Wiring, Continued

### Power Supply Specifications

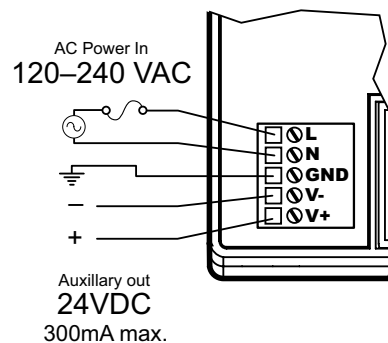
Power Supply Specifications	
Nominal Voltage Range	120–240 VAC
Input Voltage Range (Tolerance)	85–264 VAC
Rated Operating Frequency	47–63 Hz
Maximum Input Power	40VA
Cold Start Inrush Current	1.5 A, 2ms
Maximum Inrush Current (Hot Start)	1.5 A, 2ms
Internal Input Fuse Protection	Micro fuse 250V, 2A Non-replaceable
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	>10M $\Omega$ @ 500VDC
Software Version Required	Do-more! Designer version 2.0 or later

### Power Supply Connections

Pin	Connection
1	L
2	N
3	GND
4	V–
5	V+



Removable Connector Included  
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.

## 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.

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## 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	< $\pm 10\%$
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	>10M $\Omega$ @ 500VDC
Software Version Required	Do-more! Designer version 2.0 or later

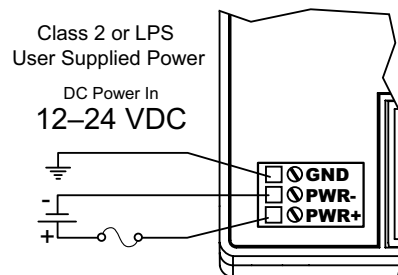
\* Class 2 or LPS Power Supply required.

### 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.

**Notes:**