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	
Agonov Approvala	UL61010-2 - UL File # E185989 Canada and USA	
Agency Approvals	CE Compliant EN61131-2*	
Noise Immunity	NEMA ICS3-304	
EU Directive	See the "EU Directive" topic in the Help File	
Weight	291g (10.3 oz)	

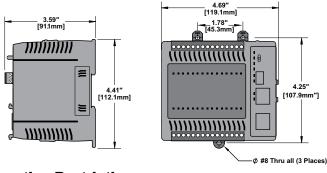
^{*}Meets EMC and Safety requirements. See the D.O.C. for details.

Power Supply Specific	ations
Nominal Voltage Rating	120–240 VAC
Input Voltage Range (Tolerance)	85–264 VAC
Rated Operating Frequency	47–63 Hz
Maximum Input Power	40VA
Cold Start Inrush Current	1.5A, 2ms
Maximum Inrush Current (Hot Start)	1.5A, 2ms
Internal Input Fuse Protection	Micro fuse 250V, 2A Non-replaceable
Heat Dissipation	16.1W Max
Isolated User 24VDC Output	24VDC @ 0.3A 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 applied for 1 minute

CPU Specifications			
Program Memory Type	FLASH memory		
User Data Memory Type	Battery Backed RAM, User configurable		
Pluggable Option Module	RS-232, RS-485, Ethernet 10/100 BASE-T (1Mbps throughput max), USB 2.0 Type B		
Expansion Modules	4 expansion modules max		
Real Time Clock Accuracy	±2.6s per day typical at 25°C ±8s per day max at 60°C		
Programming Software	Do-more Designer – Ver. 2.0 or higher		
Programming Cable Options	BX-PGM-CBL		
Custom Label Window Size	0.75" x 2.25" (19mm x 57.2mm)		

Terminal Bl	lock Connection Options
BX-RTB18	Terminal Block Kit, 90-degree screw type, Fits all BRX 18-point PLCs. Kit includes (3) 5-pin 5mm plugs, (2) 6-pin 5mm plugs, (1) 3-pin 5mm plugs.
BX-RTB18-1	Terminal Block Kit, 180-degree spring clamp type, Fits all BRX 18-point PLCs. Kit includes (3) 5-pin 5mm plugs, (2) 6-pin 5mm plugs, (1) 3-pin 5mm plugs.
ZL-BX-CBL15	ZIP Link PLC I/O cable, 15-position terminal block to 24-pin connector, 24AWG. 0.5 meter (1.6 ft.) length, 2 required.
ZL-BX-CBL15-1	ZIPLink PLC I/O cable, 15-position terminal block to 24-pin connector, 24AWG. 1 meter (3.3 ft.) length, 2 required.
ZL-BX-CBL15-2	ZIPLink PLC I/O cable, 15-position terminal block to 24-pin connector, 24AWG. 2 meter (6.6 ft.) length, 2 required.
ZL-BX-CBL15-1P	ZIPLink PLC I/O cable, 15-position terminal block to pigtail connection, 24AWG. 1 meter (3.3 ft.) length, 2 required.
ZL-BX-CBL15-2P	ZIPLink PLC I/O cable, 15-position terminal block to pigtail connection, 24AWG. 2 meter (6.6 ft.) length, 2 required.
ZL-RTB20	ZIP Link Two-Level Feedthrough Module. 20 pole, 35mm DIN mount, 2 required.
ZL-RTB20-1	ZIP Link Three-Level Feedthrough Module. 20 pole, 35mm DIN mount, 2 required.

Dimensional Information



Mounting	Restrict	ions			
AIRFLOW		2" (50mm) Minimum	2' M	(50mm)	
	2" (50mm) Minimum from	from Enclos	sure fr	om Wire Duct	
4	Enclosure or Wire Duct			2" (50mm)) Minimum

Terminal Bl	ock Conne	ctor Specifi	cations
Part Number	BX-RTB03S	BX-RTB18	BX-RTB18-1
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	<1.77 lb·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 (Dual Wire)	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-0nP-BK*	5ESDSR-0nP-BK*
*NOTE: n=(3) 3-terminal, (5) 5-terminal, or (6) for 6-terminal			

Indicator	Status	Description
	OFF	Base Power OFF
PWR	Green	Base Power ON
	Yellow	Low Battery
	OFF	CPU is in STOP Mode
RUN	Green	CPU is in RUN Mode
	Yellow	Forces are Active
	OFF	No ROM Activity, No SD Card
MFM	Yellow	ROM Activity (Flash or SD Card)
Green		SD Card Installed and Mounted
	Red	SD Card Installed and Not Mounted
ERR	OFF	CPU is functioning normally
Red		CPU Fatal Hardware Error or Software Watchdog Error

Built-in RS-232/485 Port Specifications Port Name Non-isolated serial port that can communicate via RS-232 or RS-485 (software selectable). Includes Description* ESD protection and built-in surge protection. Do-more Protocol (Default) Modbus RTU (Master & Slave) Supported Protocols K-Sequence (Slave) ASCII (In & Out) 1200, 2400, 4800, 9600, 19200, 38400, 57600, and Data Rates 115200 RS-232, 115200 bps, No Parity, 8 Data Bits, 1 Stop **Default Settings** Bit. Station #1 Port Type 3-pin terminal strip 3.5mm pitch Green LED is illuminated when active for TXD and Port Status LED RS-485 Station Addresses 1-247 RS-232 use L19772-XXX from AutomationDirect.com Cable Recommendations RS-485 use L19827-XXX from AutomationDirect.com Replacement Connector ADC Part # BX-RTB03S



Pinout	RS232	RS485
1	GND	GND
2	RX	D-
3	TX	D+

^{*} NOTE: When using RS-485, a terminator resistor is built-in and software selectable.

CPU Mode Switch Functions		
RUN position	CPU is forced into RUN Mode if no errors are encountered.	
TERM position	RUN, PROGRAM and DEBUG modes are available. In this position, the mode of operation can be changed through the Do-more Designer Software.	
STOP position	CPU is forced into STOP Mode.	

VAUTOMATION DIRECT







BX-DM1-18ED1

BRX MPU with Do-more! DM1 technology

120 VAC required, serial port, microSD slot, Discrete Input: 10-point, sink / source, Discrete Output: 8-point, sinking.

I/O Terminal Blocks sold separately. (See Terminal Block Connection Options table).

Document Name	Edition/Revision	Date
BX-DM1-18ED1	1st Ed. RevD	9/8/2021

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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.

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Do-more BRX Manual available at www.automationdirect.com/pn/doc/manual/BX-DM1-18ED1



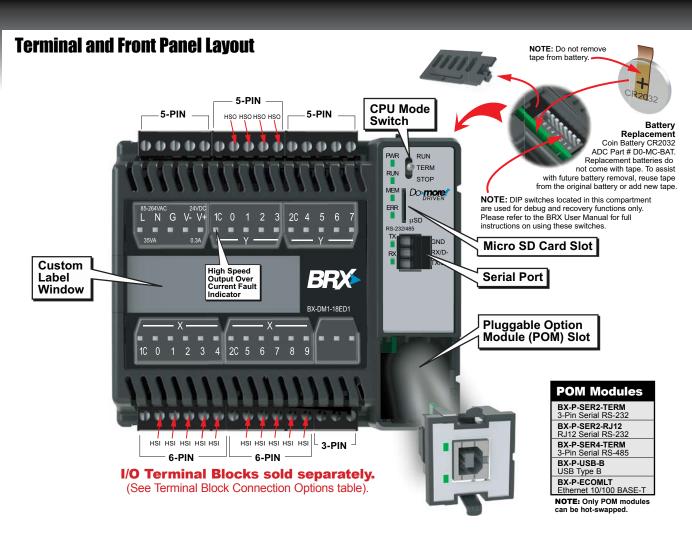
IMPORTANT!



Hot-Swapping Information

Note: This device cannot be Hot Swapped.

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Discrete Input	Specifications
Input Type	Sink/Source
Total Inputs per Module	10 High Speed – All inputs may be used as standard inputs
Commons	2 (5 points/common) Isolated
Nominal Voltage Rating	12-24 VAC/DC
Input Voltage Range	9–30 VAC/DC
Maximum Voltage	30 VAC/DC
DC Frequency	0–250kHz - High Speed
Minimum Pulse Width	0.5 μs - High Speed
AC Frequency	47–63 Hz (60–240Hz filter must be set in software for AC operation)
Input Impedance	3kΩ @ 24VDC
Input Current (typical)	6mA @ 24 VAC/DC
Maximum Input Current	12mA @ 30 VAC/DC
Maximum OFF Current	2.0 mA
ON Voltage Level	> 9.0 VAC/VDC
OFF Voltage Level	< 2.0 VAC/VDC
Status Indicators	Logic Side, Green

Discrete Output	Specific	cations	
Output Type	Sinking		
Total Outputs per Module	8 Total – 4 High Speed (Y0Y3)* 4 Standard (Y4Y7) *All outputs may be used as standard outputs		
Commons	2 (4 points/	common) Isolated	
Maximum Current per Common	2A		
Nominal Voltage Rating	12–24 VDC		
Operating Voltage Range	5–36 VDC		
Maximum Voltage	36VDC		
Minimum Output Current	0.1mA @ 24VDC		
Maximum Output Current	0.5 A per ou	utput, no derating over temperature range	
Maximum Leakage Current	10μA		
Maximum Switching	1m cable	250KHz	
Frequency	10m cable	100KHz	
Status Indicators	Logic Side, Green		

Input Function	Inputs Required ¹		10/ 18/ 36/ 10E 18E 36E			
High-Speed Counting Position Scaling Frequency Measurement	1	Up counters	Up to (3)			
	1	Down counters				
	2	Up/Down counters				
	2	Pulse/Direction (Bidirectional) counters				
	2	Quadrature (A and B) counters				
	3	Quadrature (A and B with Z) counters				
Interval Measurement	1	Single Input (Edge) timers				
	2	Dual Input (Dual Edge) timers				
Duration Measurement	1	Single Input (Edge) timers				
Table-Driven Output(s) ²		Programmable limit switches				
		Preset tables	Up to (4)			
Interrupt(s)	4	Input interrupts				
	0	Timer interrupts				
	0	Match register interrupts				

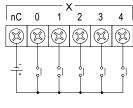
- Standard inputs may be used with high-speed functions, but at lower response frequencies of approximately 120Hz.
- Table Driven Output(s) are triggered by an Axis Position or a high-speed counter/timer accumulator value. It requires the selection of 1 discrete output. (see HSO Note 1 below)

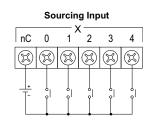
High Speed Output (HSO) Functions								
	Outputs Required ¹	Function ²	10/ 10E	18/ 18E	36/ 36E			
Pulse Mode	0	Virtual axis	4	4	4			
	2	PTO linear step/direction outputs	2	3	3			
	2	PTO rotary clockwise/counter- clockwise (CW/CCW) outputs	2	3	3			
	2	PTO quadrature (A and B) output	2	З	3			
	1	PWM pulse width modulation outputs	4	4	4			
Axis Profile	Relative/Absolute positioning, Velocity mode, Trapezoid, S-curve, Electronic gearing, Camming, Following, Homing, Jogging							

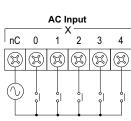
- Standard outputs may be used for high-speed functions, but at lower response frequencies of approximately 110Hz. Use of relay outputs is not recommended.
- This is the total number of functions. A combination of high-speed outputs and standard outputs may be used up to this total.

I/O Wiring

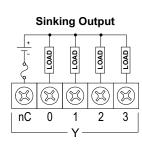
Discrete Input Wiring Sinking Input



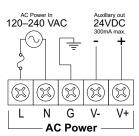




Discrete Output Wiring







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