

BRX Pluggable Option Modules (POM)

Overview

All BRX Do-more! MPUs have an available slot to receive one BRX Pluggable Option Module (POM). Available POM configurations are:

- RS-232 3-pin serial port
- RS-232 5-pin serial port
- RS-232 RJ12 port
- RS-422 5-pin serial port
- RS-485 serial port
- Ethernet port (RJ45)
- USB Type B Port

POM modules are hot swappable giving you the ability to utilize different communication options while the system is running. For example, you can configure the system using a POM RJ45 Ethernet port to talk with a C-more panel. Then hot swap to the USB POM for programming. When programming is complete hot swap back to the RJ45 Ethernet POM without needing to power cycle or reconfigure the system.



NOTE: Pluggable Option Modules cannot be installed in BRX Remote I/O modules (e.g., BX-DMIO, BX-MBIO, BX-EBC100).



BX-P-SER2-TERM
RS-232 Port



BX-P-SER2-TERMFC
RS-232 Port
w/ Flow Control



BX-P-SER4-TERM
RS-485 Port



BX-P-SER422-TERM
RS-422 Port



BX-P-SER2-RJ12
RS-232 Port (RJ12)



BX-P-ECOMLT
Ethernet Port (RJ45)



BX-P-ECOMEX
Ethernet Port



BX-P-USB-B
USB Type B Port

BRX Programmable Option Modules		
Expansion Module Part No.	Price	Description
<u>BX-P-SER2-TERM</u>	\$76.00	Non-isolated Serial port for communication via RS-232. Includes ESD protection and built-in surge protection.
<u>BX-P-SER2-TERMFC</u>	\$79.00	Non-isolated Serial port for communication via RS-232, with flow control. Includes ESD protection and built-in surge protection.
<u>BX-P-SER4-TERM</u>	\$77.00	Non-isolated Serial port for communication via RS-485. Includes ESD protection and built-in surge protection.
<u>BX-P-SER422-TERM</u>	\$79.00	Non-isolated Serial port that can communicate via RS-422. Includes ESD protection and built-in surge protection.
<u>BX-P-SER2-RJ12</u>	\$76.00	Non-isolated Serial port for communication via RS-232. Includes ESD protection and built-in surge protection.
<u>BX-P-ECOMLT</u>	\$99.00	Standard transformer isolated Ethernet port (1 Mbps throughput max) with built-in surge protection.
<u>BX-P-ECOMEX</u>	\$119.00	General-purpose standard transformer isolated Ethernet port (10/100 Mbps) with built-in surge protection.
<u>BX-P-USB-B</u>	\$46.00	USB Type B Port for programming.

General Specifications

General specifications common to all the POM modules are listed in the table below.

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	UL 61010-2 - UL File # E185989 Canada and USA CE Compliant E185989*
Noise Immunity	NEMA ICS3-304
EU Directive	See the "EU Directive" in Appendix B of the User Manual or topic DMD0331 in the Help File.
Weight	7g (0.25 oz)

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

BRX POM Capabilities

	BX-P-SER2-TERM	BX-P-SER2-TERMFC	BX-P-SER4-TERM	BX-P-SER422-TERM	BX-P-SER2-RJ12	BX-P-ECOMLT*	BX-P-ECOMEX	BX-P-USB-B
Monitoring & Programming	X	X	X	X	X	X	X	X
Do-more! Protocol	X	X	X	X	X	X	X	
Modbus RTU Master	X	X	X	X	X		X	
Modbus RTU Slave	X	X	X	X	X		X	
Modbus TCP (Server)						X	X	
HTTP							X	
MQTT Client							X	
FTP							X	
EtherNet/IP							X	
Embedded Web Server: HTTP (Unsecure)							X	
K-Sequence (Slave)	X	X	X	X	X	X	X	
ASCII (In & Out)	X	X	X	X	X		X	
Custom Protocols	X	X	X	X			X	

* Limited to 1 Mbps throughput max

BRX Pluggable Option Modules (POM)

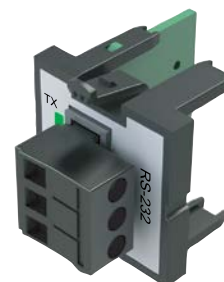
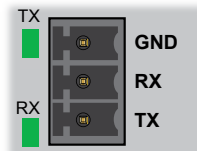
BX-P-SER2-TERM

\$76.00

The RS-232 POM can be connected to the Do-more! Designer programming software, Modbus RTU master or slave devices,

DirectLogic PLCs via K-Sequence protocol, as well as devices that send or receive non-sequenced ASCII strings or characters.

Pinout	RS232
1	GND
2	RX
3	TX



Removable Connector Included

BX-P-SER2-TERM Specifications

Description	Non-isolated Serial port that can communicate via RS-232. Includes ESD protection and built-in surge protection.
Supported Protocols	Do-more!™ Protocol (Default) Modbus RTU (Master & Slave) K-Sequence (Slave) ASCII (In & Out)
Data Rates	1200, 2400, 4800, 9600, 19200, 38400, 57600, and 115200 Baud
Default Settings	115200bps, No Parity, 8 Data Bits, 1 Stop Bit, Station #1
Port Status LED	Green LED is illuminated when active for TXD and RXD
Port Type	Removable 3-pin terminal strip 3.5 mm pitch
RS-232 TX	RS-232 Transmit output
RS-232 RX	RS-232 Receive input
RS-232 GND	Logic ground
RS-232 Maximum Output Load (TXD/RTS)	3kΩ, 1000pf
RS-232 Minimum Output Voltage Swing	±5V
RS-232 Output Short Circuit Protection	±15mA
Cable Requirements	RS-232 use P/N L19772-XXX from automationdirect.com
Maximum Distance	30 meters (100 feet); 6 meters (20 feet) recommended maximum
Replacement Connector	ADC Part # BX-RTB03S
Hot Swappable	Yes

BX-RTB03S

\$5.50

Replacement removable connector.



BX-RTB03S

BX-RTB03S Connector Specifications

Part Number	BX-RTB03S
Connector Type	Screw type
Wire Exit	90-degree
Pitch	3.5 mm
Screw Size	M2
Recommended Screw Torque	<1.77 lb·in (0.2 N·m)
Screwdriver Blade Width	2.5 mm
Wire Gauge (Single Wire)	28–16 AWG
Wire Gauge (Two Wires)	28–16 AWG
Wire Strip Length	0.24 in (6mm)
Equiv. Dinkle part #	EC350V-03P-BK

BRX Pluggable Option Modules (POM)

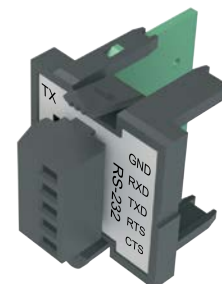
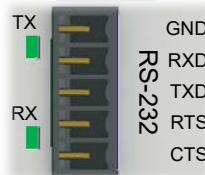
BX-P-SER2-TERMFC

\$79.00

The RS-232 POM can be connected to the Do-more! Designer programming software, Modbus RTU master or slave devices,

DirectLogic PLCs via K-Sequence protocol, as well as devices that send or receive non-sequenced ASCII strings or characters.

Pinout	RS232
1	GND
2	RXD
3	TXD
4	RTS
5	CTS



Removable Connector Included

BX-P-SER2-TERMFC Specifications

Description	Non-isolated Serial port that can communicate via RS-232. Includes ESD protection and built-in surge protection.
Supported Protocols	Do-more!™ Protocol (Default) Modbus RTU (Master & Slave) K-Sequence (Slave) ASCII (In & Out)
Data Rates	1200, 2400, 4800, 9600, 19200, 38400, 57600, and 115200 Baud
Default Settings	115200bps, No Parity, 8 Data Bits, 1 Stop Bit, Station #1
Port Status LED	Green LED is illuminated when active for TXD and RXD
Port Type	Removable 5-pin terminal strip 3.5 mm pitch
RS-232 TX	RS-232 Transmit output
RS-232 RX	RS-232 Receive input
RS-232 GND	Logic ground
RS-232 CTS	RS-232 Clear to Send input
RS-232 RTS	RS-232 Request to Send input
RS-232 Maximum Output Load (TXD/RTS)	3kΩ, 1000pf
RS-232 Minimum Output Voltage Swing	±5V
RS-232 Output Short Circuit Protection	±15mA
Cable Requirements	RS-232 use P/N L19853-XXX from automationdirect.com
Maximum Distance	6 meters (20 foot) recommended maximum
Replacement Connector	ADC Part # BX-RTB05S
Hot Swappable	Yes
Software Version Required	Do-more! Designer version 2.7 or later

BX-RTB05S

\$4.50

Replacement removable connector.



BX-RTB05S Connector Specifications

Part Number	BX-RTB05S
Connector Type	Screw type
Wire Exit	180-degree
Pitch	3.5 mm
Screw Size	M2
Recommended Screw Torque	<1.77 lb-in (0.2 N-m)
Screwdriver Blade Width	2.5 mm
Wire Gauge (Single Wire)	28-16 AWG
Wire Gauge (Two Wires)	28-16 AWG
Wire Strip Length	0.24 in (6mm)
Equiv. Dinkle part #	EC350V-05P-BK

BRX Pluggable Option Modules (POM)

BX-P-SER422-TERM

\$79.00

The RS-422 POM can be connected to the Do-more! Designer programming software, Modbus RTU master devices, DirectLogic

PLCs via K-Sequence protocol, as well as devices that send or receive non-sequenced ASCII strings or characters.

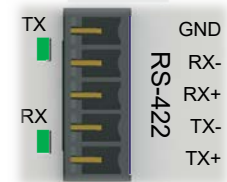


Removable Connector Included

BX-P-SER422-TERM Specifications

Description	Non-isolated Serial port that can communicate via RS-422. Includes ESD protection and built-in surge protection.
Supported Protocols	Do-more!™ Protocol (Default) Modbus RTU (Master & Slave) K-Sequence (Slave) ASCII (In & Out)
Data Rates	1200, 2400, 4800, 9600, 19200, 38400, 57600, and 115200 Baud
Default Settings	115200bps, No Parity, 8 Data Bits, 1 Stop Bit, Station #1
Port Status LED	Green LED is illuminated when active for TXD and RXD
Port Type	Removable 5-pin terminal strip 3.5 mm pitch
Station Addresses	1–247
TX-/RX-	RS-422 Transceiver low
TX+/RX+	RS-422 Transceiver high
GND	Logic ground
Input Impedance	96kΩ
Maximum Load	50 transceivers, 19kΩ each, 120Ω termination
Output Short Circuit Protection	±250mA, thermal shutdown protection
Minimum Differential Output Voltage	2.0 VDC with 54Ω load
Maximum Common Mode Voltage	-7.5 to 12.5 VDC
Fail Safe Inputs	Logic high input state if inputs are unconnected
Electrostatic Discharge Protection	±15kV human body, ±6kV contact discharge per IEC61000-4-2
Cable Requirements	RS-422 use P/N L19853-XXX from automationdirect.com
Maximum Distance	1000 meters (3280 feet) recommended maximum
Replacement Connector	ADC Part # BX-RTB05S
Hot Swappable	Yes
Software Version Required	Do-more! Designer version 2.7 or later

Pinout	RS422
1	GND
2	RX-
3	RX+
4	TX-
5	TX+



BX-RTB05S

\$4.50

Replacement removable connector.



BX-RTB05S Connector Specifications

Part Number	BX-RTB05S
Connector Type	Screw type
Wire Exit	180-degree
Pitch	3.5 mm
Screw Size	M2
Recommended Screw Torque	<1.77 lb·in (0.2 N·m)
Screwdriver Blade Width	2.5 mm
Wire Gauge (Single Wire)	28–16 AWG
Wire Gauge (Two Wires)	28–16 AWG
Wire Strip Length	0.24 in (6mm)
Equiv. Dinkle part #	EC350V-05P-BK

BRX Pluggable Option Modules (POM)

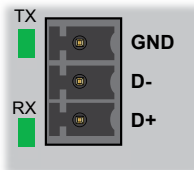
BX-P-SER4-TERM

\$77.00

The RS-485 POM can be connected to the Do-more! Designer programming software, Modbus RTU master or slave devices, DirectLogic PLCs via K-Sequence protocol,

as well as devices that send or receive non-sequenced ASCII strings or characters.

Pinout	RS485
1	GND
2	D-
3	D+



Removable Connector Included

BX-P-SER4-TERM Specifications

Description	Non-isolated Serial port that can communicate via RS-485. Includes ESD protection and built-in surge protection.
Supported Protocols	Do-more!™ Protocol (Default) Modbus RTU (Master & Slave) K-Sequence (Slave) ASCII (in & Out)
Data Rates	1200, 2400, 4800, 9600, 19200, 38400, 57600, and 115200 baud
Default Settings	115200bps, No Parity, 8 Data Bits, 1 Stop Bit, Station #1, Termination resistor OFF
Port Status LED	Green LED is illuminated when active for TXD and RXD
Port Type	Removable 3-pin terminal strip 3.5 mm pitch
RS-485 Station Addresses	1-247
RS-485 D+	RS-485 transceiver high
RS-485 D-	RS-485 transceiver low
RS-485 GND	Logic ground
RS-485 Input Impedance	19kΩ
RS-485 Maximum Load	50 transceivers, 19kΩ each, 120Ω termination
RS-485 Output Short Circuit Protection	±250mA, thermal shut-down protection
RS-485 Electrostatic Discharge Protection	±8kV per IEC1000-4-2
RS-485 Electrical Fast Transient Protection	±2kV per IEC1000-4-4
RS-485 Minimum Differential Output Voltage	1.5 V with 60Ω load
RS-485 Fail Safe Inputs	Logic high input state if inputs are unconnected
RS-485 Maximum Common Mode Voltage	-7.5 V to 12.5 V
Cable Requirements	RS-232 use P/N L19772-XXX from automationdirect.com
Maximum Distance	30 meters (100 feet); 6 meters (20 foot) recommended maximum
Replacement Connector	ADC Part # BX-RTB03S
Hot Swappable	Yes

BX-RTB03S

\$5.50

Replacement removable connector.



BX-RTB03S

BX-RTB03S Connector Specifications

Part Number	BX-RTB03S
Connector Type	Screw type
Wire Exit	90-degree
Pitch	3.5 mm
Screw Size	M2
Recommended Screw Torque	<1.77 lb-in (0.2 N·m)
Screwdriver Blade Width	2.5 mm
Wire Gauge (Single Wire)	28-16 AWG
Wire Gauge (Two Wires)	28-16 AWG
Wire Strip Length	0.24 in (6mm)
Equiv. Dinkle part #	EC350V-03P-BK

BRX Pluggable Option Modules (POM)

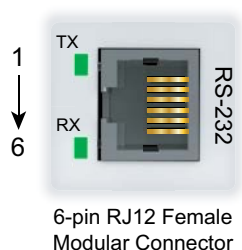
BX-P-SER2-RJ12

\$76.00

The RS-232 RJ12 POM can be connected to the Do-more! Designer programming software, Modbus RTU master or slave devices, DirectLogic PLCs via K-Sequence

protocol, as well as devices that send or receive non-sequenced ASCII strings or characters.

Pin #	Signal
1	0V Power (-) connection (GND)
2	5V Power (+) connection (220mA max)
3	RXD Receive Data (RS-232)
4	TXD Transmit Data (RS-232)
5	RTS Request to Send (RS-232)
6	CTS Clear to Send (RS-232)



6-pin RJ12 Female Modular Connector



BX-P-SER2-RJ12 Specifications

Description	Non-isolated Serial port that can communicate via RS-232 Includes ESD protection and built-in surge protection.
Supported Protocols	Do-more!™ Protocol (Default) Modbus RTU (Master & Slave) K-Sequence (Slave) ASCII (In & Out)
Data Rates	1200, 2400, 4800, 9600, 19200, 38400, 57600, and 115200 Baud
Default Settings	115200bps, No Parity, 8 Data Bits, 1 Stop Bit, Station #1
Port Status LED	Green LED is illuminated when active for TXD and RXD
Port Type	RJ12 - 6P6C
RS-232 Maximum Output Load (TXD/RTS)	3kΩ, 1000pf
RS-232 Minimum Output Voltage Swing	±5V
RS-232 Output Short Circuit Protection	±15mA
Cable Requirements	RS-232 use P/N L19772-XXX from automationdirect.com
Maximum Distance	30 meters (100 feet); 6 meters (20 foot) recommended maximum
Replacement Connector	N/A
Hot Swappable	Yes

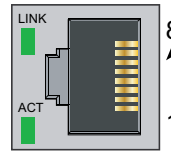
BRX Pluggable Option Modules (POM)

BX-P-ECOMLT

\$99.00

The Ethernet LT POM can be connected to the Do-more! Designer programming software or HMI's that support the Do-more!, Modbus, or K-sequence protocol. This POM functions only as a server device.

Pin #	Signal
1	TXD+ Transmit Data
2	TXD- Transmit Data
3	RXD+ Receive Data
4	N/C
5	N/C
6	RXD- Receive Data
7	N/C
8	N/C



BX-P-ECOMLT Specifications

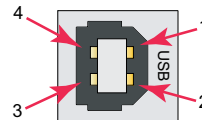
Description	Standard transformer isolated Ethernet port with built-in surge protection.
Transfer Rate	1 Mbps throughput max
Port Status LED	LINK LED is solid when network is established. ACT LED flashes when port is active.
Supported Protocols	Do-more! Protocol (Server) Modbus TCP (Server) K-sequence (Server) Programming/Monitoring
Cable Recommendation	C5E-STxxx-xx from AutomationDirect.com
Port Type	RJ45, Category 5, Auto Crossover
Ethernet Port Numbers:	
Do-more! Protocol	28784, UDP
Modbus	502, TCP
K-sequence	28784, UDP
Programming/Monitoring	28784, UDP
Hot Swappable	Yes

BX-P-USB-B

\$46.00

The USB POM can only be connected to the Do-more! Designer programming software.

Pin #	Signal
1	+5
2	-Data
3	+Data
4	GND



Mating face of USB type B female



BX-P-USB-B Specifications

Description	USB Type B Port for programming.
USB Specification Version	USB 2.0
Port Status LED	LED flashes when port is active
Cable Recommendation	USB-CBL-ABxx from AutomationDirect.com
Hot Swappable	Yes

BRX Pluggable Option Modules (POM)

BX-P-ECOMEX	\$119.00
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The Ethernet EX POM provides a general-purpose Ethernet interface that can be connected to devices using a wide range of protocols.



NOTE: This POM device must be used with a DM1E CPU and reside on a different subnet than the built-in Ethernet port.



BX-P-ECOMEX Specifications			
Description	Standard transformer isolated Ethernet port with built-in surge protection.		
Transfer Rate	10/100 Mbps		
Port Status LED	LINK LED is solid when network is established. ACT LED flashes when port is active.		
Supported Protocols	SMTP(Email) FTP (Client) Do-more! Ethernet I/O MQTT / MQTTS HTTP / HTTPS EtherNet/IP: Explicit Messaging (Scanner, Adapter) Implicit Messaging (Scanner, Adapter) SNTP (Time Server) TCP/IP (Raw Packet) Modbus TCP/IP (Client & Server) DHCP		
Cable Recommendation	C5E-STxxx-xx from AutomationDirect.com		
Port Type	RJ45, Category 5, Auto Crossover		
Ethernet Port Numbers:	Peerlink Do-more! Protocol (Client, Server) Modbus TCP (Client, Server) HOST Ethernet Protocol (Client, Server) EtherNet/IP: Explicit Messaging (Scanner, Adapter) Implicit Messaging (Scanner, Adapter) SMTP (Email) Ethernet Remote I/O HTTP, HTTPS Embedded Web Server: HTTP (Unsecure) MQTT, MQTTS SNTP (Time Server) TCP Raw Packet UDP Raw Packet FTP (Client)	28784 28784 502 28784 44818 44818 25 28784 80, 443 80 1883, 8883 123 User defined User defined 20, 21	UDP UDP TCP UDP TCP TCP TCP UDP TCP TCP TCP TCP TCP TCP TCP TCP
Hot Swappable	Yes		
Software Version Required	Do-more! Designer version 2.8 or later (version 2.10 or later required for EtherNet/IP Implicit Messaging)		

Pin #	Signal
1	TXD+ Transmit Data
2	TXD- Transmit Data
3	RXD+ Receive Data
4	N/C
5	N/C
6	RXD- Receive Data
7	N/C
8	N/C

