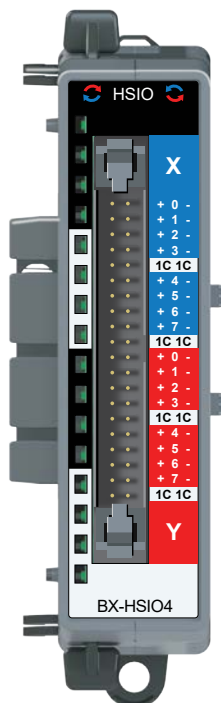


BX-HSIO4 High Speed Input/Output



BX-HSIO4 \$;04o!0:

8-pt Sinking/Sourcing Input,
8-pt Sinking/Sourcing Output



NOTE: This device requires **ZIP**Link Wiring Systems



NOTE: Cannot be used in Remote I/O Bases.

High Speed Input/Output Specifications

High Speed Input Specifications

Type	High Speed TTL Differential or Single Ended
Total Input Points per Module	8
Commons	1
Nominal Voltage Range	5VDC
Input Voltage Range	-5.5 to 5.5 VDC
Maximum Voltage	5.5 VDC
DC Frequency	0-2 MHz
Minimum Pulse Width	125ns
Input Impedance	694Ω @ 5VDC
Input Current (typical)	±7mA @ 5VDC
Maximum Input Current	10mA @ 5.5 VDC
ON Voltage Level	> +2.5 VDC differential
OFF Voltage Level	< +1.0 VDC differential
Hysteresis	50mV typical
Status Indicators	Logic Side, Green
OFF to ON Response	<125ns
ON to OFF Response	<125ns

High Speed Output Specifications

Type	High Speed TTL Differential
Total Output Points per Module	8
Commons	1
Maximum Current per Common	160mA
Power Supply	Internal +5VDC
Maximum Voltage	5.5 VDC
Minimum Output Current	1μA
Maximum Load Current	20mA per Output
Maximum Leakage Current	±20μA
Differential Output Voltage	>3.0 VDC
Status Indicators	Logic Side, Green
OFF to ON Response	<125ns
ON to OFF Response	<125ns
Maximum Switching Frequency	2MHz
Overcurrent, Short Circuit Protection and Short to Ground	Protected
Overcurrent Trip Level	150mA maximum
Fuse Type	User-supplied external fuse

General

Backplane Power Consumption	2.6 W
Heat Dissipation	3.0 W
Weight	85g [3oz]
Software Version Required	Do-more! Designer v2.8 or later

* Class 2 or LPS Power Supply required.

IMPORTANT!



Hot-Swapping Information

Note: This device cannot be Hot Swapped.

BX-HSIO4 High Speed Input/Output, continued

ZIPLink Terminal Block Wiring Connections for BX-HSIO4

Wiring Connections for ZL-RTB40 Terminal Block																					
MODULE	LABELS																				LEVEL
BX-HSIO4	IN 0-	IN 1-	IN 2-	IN 3-	COM	IN 4-	IN 5-	IN 6-	IN 7-	COM	OUT 0-	OUT 1-	OUT 2-	OUT 3-	COM	OUT 4-	OUT 5-	OUT 6-	OUT 7-	COM	UPPER
	IN 0+	IN 1+	IN 2+	IN 3+	COM	IN 4+	IN 5+	IN 6+	IN 7+	COM	OUT 0+	OUT 1+	OUT 2+	OUT 3+	COM	OUT 4+	OUT 5+	OUT 6+	OUT 7+	COM	LOWER

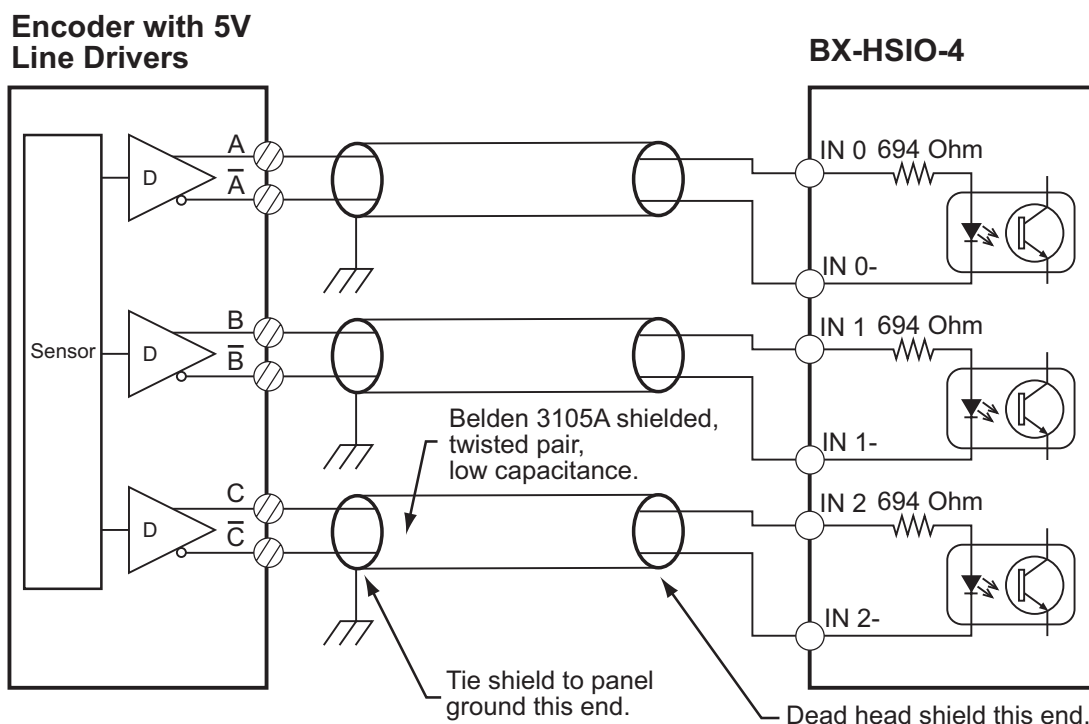
TERMINAL BLOCK LABEL SHEET FOR ZIPLINK CABLE ZL-BX-CBL-40-xS

Wiring Connections for ZL-RTB40-1 Terminal Block																	
MODULE	LABELS																LEVEL
BX-HSIO4	COM		COM		COM		COM		COM		COM		COM		COM		UPPER
	IN 0-	IN 1-	IN 2-	IN 3-	IN 4-	IN 5-	IN 6-	IN 7-	OUT 0-	OUT 1-	OUT 2-	OUT 3-	OUT 4-	OUT 5-	OUT 6-	OUT 7-	MIDDLE
	IN 0+	IN 1+	IN 2+	IN 3+	IN 4+	IN 5+	IN 6+	IN 7+	OUT 0+	OUT 1+	OUT 2+	OUT 3+	OUT 4+	OUT 5+	OUT 6+	OUT 7+	LOWER

TERMINAL BLOCK LABEL SHEET FOR ZIPLINK CABLE ZL-BX-CBL-40-xS

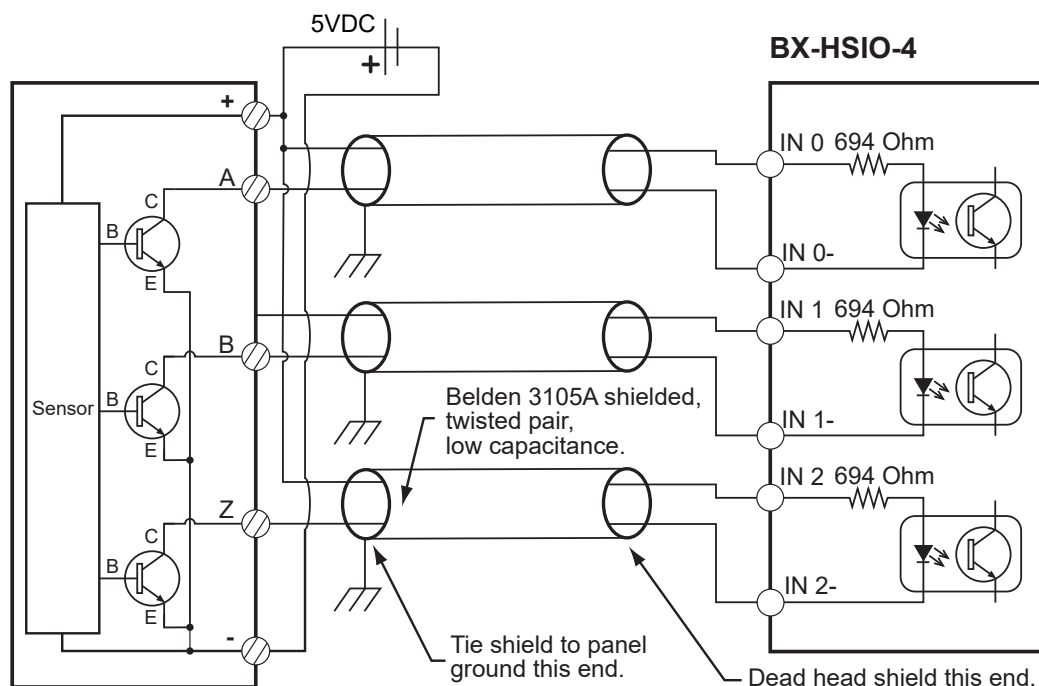
Differential 5V Encoder Input to BX-HSIO4

To prevent damage to 5V inputs,
do not exceed 6.8V or 30 mA on inputs

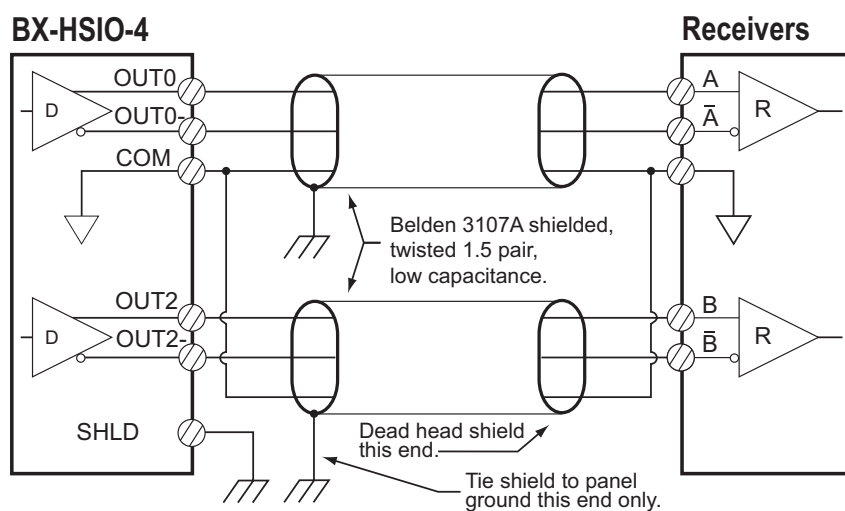


BX-HSIO4 High Speed Input/Output, continued

Single-Ended 5V Encoder Input to BX-HSIO4

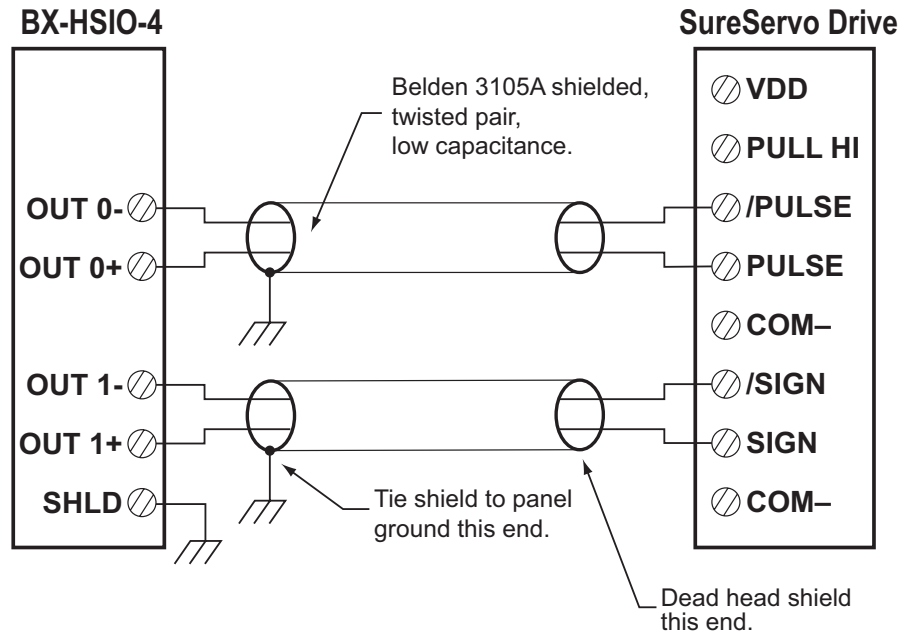


Line Driver Pulse Output from BX-HSIO4

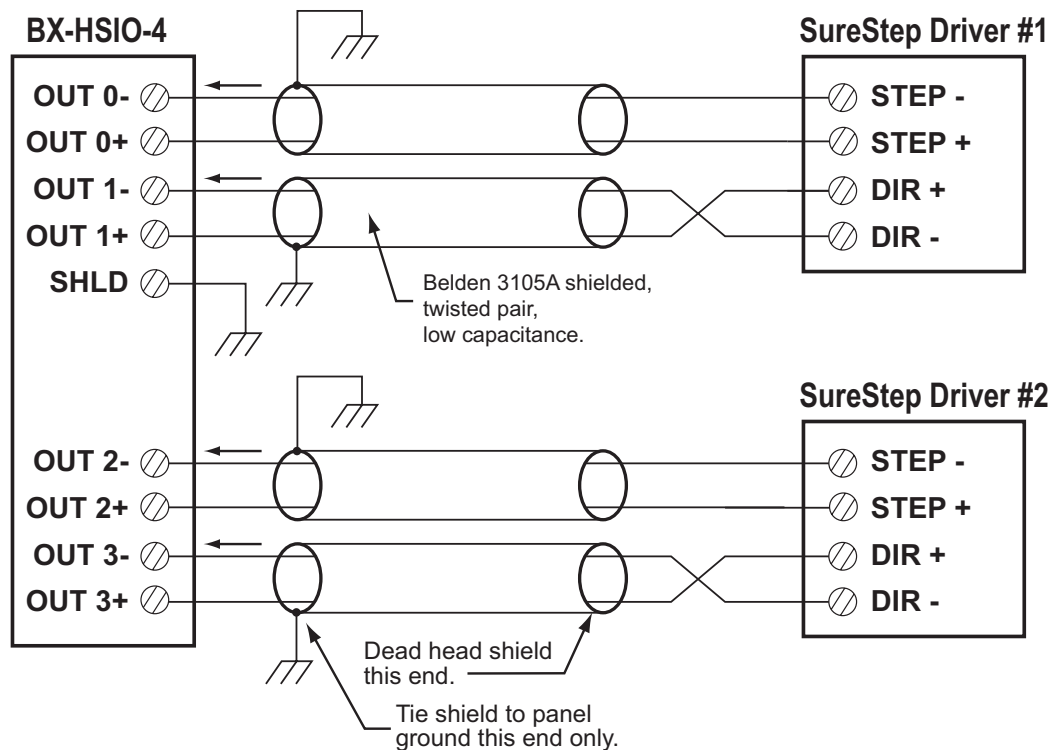


BX-HSIO4 High Speed Input/Output, continued

BX-HSIO4 to SureServo



BX-HSIO4 to SureStep



BRX Motion Control, Communications and Specialty Expansion Modules

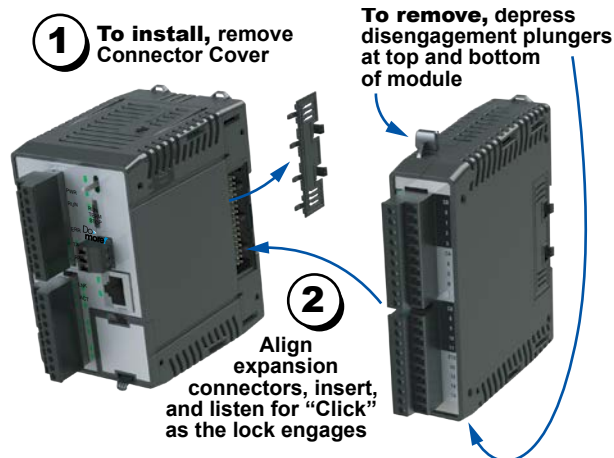
Overview

One of the unique features of the BRX platform is its ability to expand its capability to fit your application solution. One of the ways the BRX platform can do this is by using expansion modules that conveniently "snap on" to the side of any BRX MPU. Once the expansion module has been snapped into place and is added to the project, it instantly adds I/O to the MPU with little to no additional setup required.

The specialty expansion modules give you the ability to add additional high-speed I/O or serial communications as needed. On the front panel of the expansion modules a color scheme and a symbol are used to denote the module type.

High-speed I/O modules have 8-point sinking/sourcing inputs and are available with 8-point sinking or sourcing outputs, all with switching frequencies up to 250kHz. The serial communications modules have 4 serial ports.

The high-speed I/O modules ship without wiring terminals. This allows you to select the termination style that best suits your application. Several wiring options are available, including screw terminal connectors and spring clamp terminal connectors. The serial communications modules ship with a terminal connector installed in each port.



Hot-Swapping Information

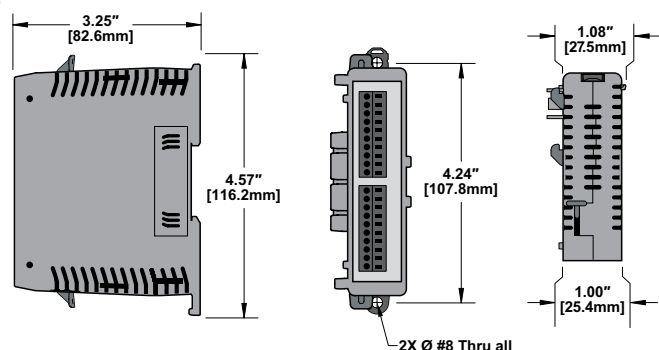
Note: This device cannot be Hot Swapped.

General Specifications

All BRX high-speed input/output modules and serial communications modules have the same general specifications listed in the table below.

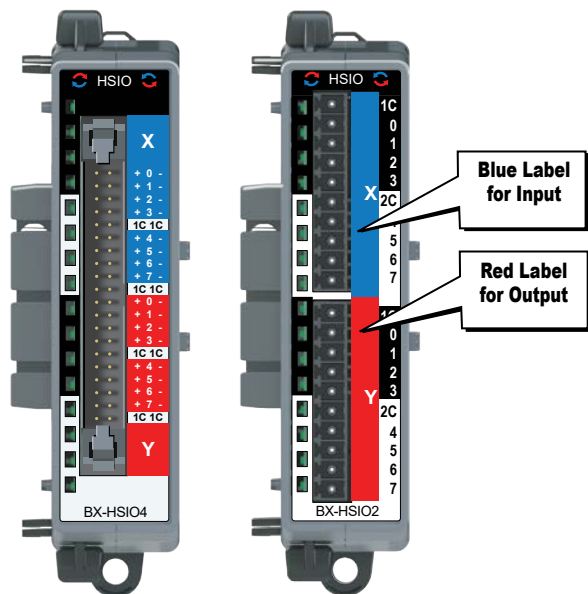
General Specifications	
Operating Temperature	0° to 60°C [32° to 140°F]
Storage Temperature	-20° to 85°C [-4° to 185°F]
Humidity	5% to 95% (non-condensing)
Environmental Air	No corrosive gases permitted
Vibration	IEC60068-2-6 (Test Fc)
Shock	IEC60068-2-27 (Test Ea)
Enclosure Type	Open Equipment
Noise Immunity	NEMA ICS3-304
EU Directive	See the "EU Directive" topic in the BRX Help File
Agency Approvals	UL 61010-2 File E185989, Canada and USA, CE Compliant EN61131-2

Dimensions



NOTE: When removing an expansion module make sure there is room for the module to slide away from the system. Failure to do so will result in difficulty removing the module.

BRX Motion Control, Communications and Specialty Expansion Modules



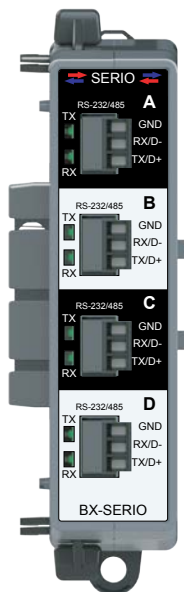
High-speed Input/Output Modules

Three (3) high-speed input/output modules are available, with eight inputs and eight outputs each. High-speed I/O module faceplates have blue and red terminal bar sections to distinguish input and output terminals, respectively, and have the  symbol to signify high-speed I/O.

High-Speed Input/Output Modules					
Part Number	Input Points	Output Points	Output Type	Switching Speed	Price
<u>BX-HSIO1</u>	8	8	12–24 VDC Sinking	Up to 250kHz	\$0447u:
<u>BX-HSIO2</u>	8	8	12–24 VDC Sourcing	Up to 250kHz	\$0447v:
<u>BX-HSIO4</u>	8	8	2.5–5 VDC Sinking/Sourcing	Up to 2MHz	\$,040l0:

Serial Communications Module

Three (3) serial communications modules are available, with four serial ports each. Serial communications module faceplates have black and white terminal sections to distinguish serial terminals, and have the  symbol to signify serial I/O.



Serial Communications Module			
Part Number	Ports	Port Type	Price
<u>BX-SERIO</u>	4	RS-232 / RS-485	\$010ch:
<u>BX-SERIO-2</u>	4	RS-232 with Flow Control	\$,04gi1:
<u>BX-SERIO-4</u>	4	RS-422	\$,04gi2:

Expansion Module Support by Controller	
Controller Type	# Expansion Modules
<u>BX-DM1E-M</u>	8
<u>BX-DM1-10</u>	8
<u>BX-DM1E-10</u>	8
<u>BX-DM1-18</u>	8
<u>BX-DM1E-18</u>	8
<u>BX-DM1-36</u>	8
<u>BX-DM1E-36</u>	8
<u>BX-DMIO*</u>	8
<u>BX-EBC100*</u>	8
<u>BX-MBIO*</u>	8

* Remote I/O controllers do not support Motion Control and Communications Modules.

BRX Wiring Termination Options

16-Point BRX Discrete Expansion Module ZIPLink Selector					
Expansion Module Part No.	ZIPLink Module	ZIPLink Module Part No.	Qty Needed	ZIPLink Cable Part No. *	Qty Needed
<u>BX-16ND3</u>	Sensor	<u>ZL-LTB16-24-1</u>	1	<u>ZL-BXEM-CBL20</u> <u>ZL-BXEM-CBL20-1</u> <u>ZL-BXEM-CBL20-2</u>	1
<u>BX-16NF3</u>	Feedthrough	<u>ZL-RTB20</u> (Standard) OR <u>ZL-RTB20-1</u> (Compact)	1		
<u>BX-16NA</u>	Feedthrough				
<u>BX-16NB</u>	Feedthrough				
<u>BX-16TD1</u>	Feedthrough				
<u>BX-16TD1</u>	Relay (Sourcing)	<u>ZL-RRL16-24-1</u> , <u>ZL-RRL16W-24-1</u> , <u>ZL-RRL16F-24-1</u> ,	1		
<u>BX-16TD2</u>	Relay (Sinking)	<u>ZL-RRL16-24-2</u> , <u>ZL-RRL16W-24-2</u> , <u>ZL-RRL16F-24-2</u> ,	1		
	Feedthrough	<u>ZL-RTB20</u> (Standard) OR <u>ZL-RTB20-1</u> (Compact)	1		
<u>BX-16TF2</u>	Feedthrough				
<u>BX-16TR**</u>					
<u>BX-16TRZ**</u>					
<u>BX-16CD3D1</u>					
<u>BX-16CD3D2</u>					
<u>BX-16CF3F2</u>					

* Select cable length: Blank = 0.5 m, -1 = 1.0m, -2 = 2.0m.

Available pigtail cables: ZL-BXEM-CBL20-1P = 1.0 m, ZL-BXEM-CBL20-2P = 2.0 m.

** The relay outputs are derated not to exceed 2A per common when used with the ZIPLink wiring system.

32-Point BRX Discrete Expansion Module ZIPLink Selector					
Expansion Module Part No.	ZIPLink Module	ZIPLink Module Part No.	Qty Needed	ZIPLink Cable Part No.*	Qty Needed
<u>BX-32ND3</u>	Sensor	<u>ZL-LTB32-24-1</u>	1	<u>ZL-D24-CBL40</u> <u>ZL-D24-CBL40-1</u> <u>ZL-D24-CBL40-2</u>	1
	Feedthrough	<u>ZL-RTB40</u> (Standard) OR <u>ZL-RTB40-1</u> (Compact)	1		
<u>BX-32TD1</u>	Feedthrough				
<u>BX-32TD2</u>					

* Select cable length: Blank = 0.5 m, -1 = 1.0m, -2 = 2.0m.

Available pigtail cables: ZL-D24-CBL40-1P = 1.0 m, ZL-D24-CBL40-2P = 2.0 m.

Suffix -X indicates 45° cable connector angle. Non -X indicates 180° cable connector angle.

16-Point BRX High Speed Expansion Module ZIPLink Selector					
Expansion Module Part No.	ZIPLink Module	ZIPLink Module Part No.	Qty Needed	ZIPLink Cable Part No. *	Qty Needed
<u>BX-HSIO4</u>	Feedthrough	<u>ZL-RTB40</u> (Standard) OR <u>ZL-RTB40-1</u> (Compact)	1	<u>ZL-BX-CBL40-S</u> <u>ZL-BX-CBL40-1S</u>	1