

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	UL61010-2 - UL File # E185989 Canada and USA CE Compliant EN61131-2*
Noise Immunity	NEMA ICS3-304
EU Directive	See the "EU Directive" topic in the Help File
Heat Dissipation	5.7W
Weight	85g (3 oz)
Software Version	Do-more! Designer 2.5 or later

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

Input Specifications	
Input Type	Sink/Source
Total Inputs per Module	8
Commons	2 (4 points/common) Isolated
Nominal Voltage Range	12 - 24 VDC
Input Voltage Range	9 - 30 VDC
Maximum Voltage	30 VDC
DC Frequency	0 - 250KHz
Minimum Pulse Width	0.5µs
Input Impedance	3kΩ @ 24VDC
Input Current (typical)	4mA @ 24 VDC
Maximum Input Current	8mA @ 30 VDC
ON Voltage Level	> 9.0 VDC
OFF Voltage Level	< 2.0 VDC
Minimum ON Current	3.0mA (9V required to guarantee ON state)
Maximum OFF Current	1.5mA
Status Indicators	Logic Side, Green
OFF to ON Response	< 2us
ON to OFF Response	< 2us

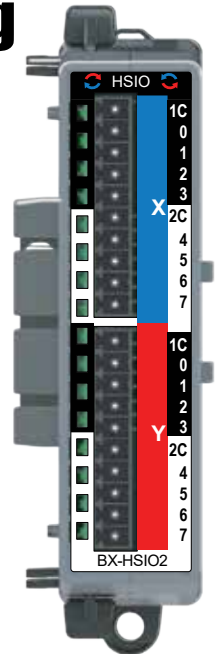
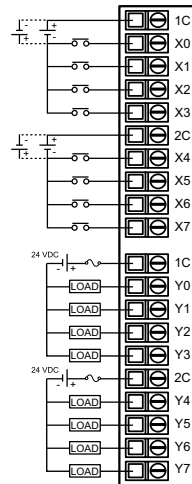
Output Specifications	
Output Type	Sourcing
Total Outputs per Module	8
Commons	2 (4 points/common) Isolated
Maximum Current per Common	2A
Nominal Voltage Range	12 - 24 VDC
Operating Voltage Range	5 - 36 VDC
Maximum Voltage	36 VDC
Minimum Output Current	0.1mA @ 24 VDC
Maximum Load Current	0.5A per output No derating over temperature range
Maximum Inrush Current	5A for 50ms
Maximum Leakage Current	10µA
ON Voltage Drop	0.5 VDC
Status Indicators	Logic Side, Green
OFF to ON Response	< 2us
ON to OFF Response	< 2us
Maximum Switching Frequency	250KHz (1m cable), 100KHz (10m cable)
Overcurrent, Short Circuit Protection and Short to Ground	Protected by common group of 4 outputs. If tripped, Common terminal Red LED will be ON, others OFF. Self-Resetting.
Overcurrent Trip Level per Com	4A minimum, 8A maximum
Fuse Type	User-supplied external fuse

BX-HSIO2 Sourcing Outputs

High Speed Input/Output Module

In: 8-pt 12-24VDC Sink/Source

Out: 8-pt 12-24VDC Sourcing



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

WARNING: To minimize the risk of potential safety problems, you should follow all applicable local and national codes that regulate the installation and operation of your equipment. These codes vary from area to area and it is your responsibility to determine which codes should be followed, and to verify that the equipment, installation, and operation are in compliance with the latest revision of these codes.

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-HSIO2



IMPORTANT!



Hot-Swapping Information

Note: This device cannot be Hot Swapped.

Document Name	Edition/Revision	Date
BX-HSIO2	1st Ed.	2/11/2019

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High Speed Input (HSI) Functions

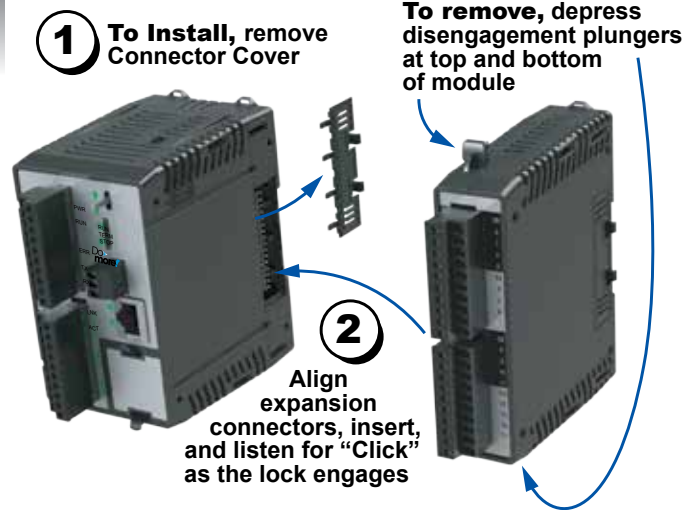
Input Function	Inputs Required		BX-HSIO2
High-Speed Counting Position Scaling Frequency Measurement	1	Up counters	Up to (4)
	1	Down counters	
	2	Up/Down counters	
	2	Pulse/Direction (Bidirectional) counters	
	2	Quadrature (A and B) counters	
Interval Measurement	3	Quadrature (A and B with Z) counters	Up to (4)
	1	Single Input (Edge) timers	
Duration Measurement	2	Dual Input (Dual Edge) timers	Up to (4)
	1	Single Input (Edge) timers	
Table-Driven Output(s) ¹		Programmable limit switches	Up to (4)
		Preset tables	
Interrupt(s)	1	Input interrupts	Up to (4)
		Timer interrupts	
		Match register interrupts	

1. 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.

High Speed Output (HSO) Functions

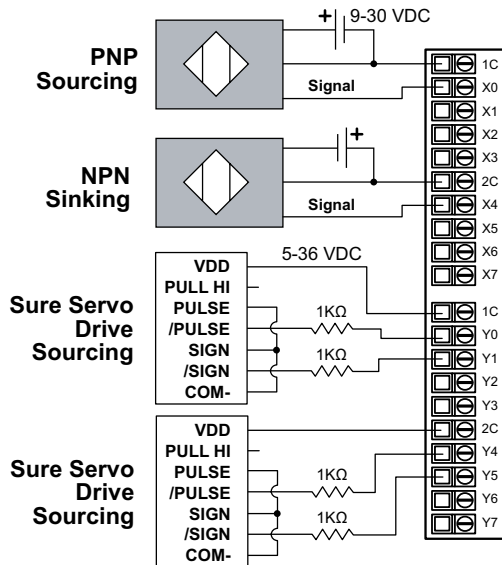
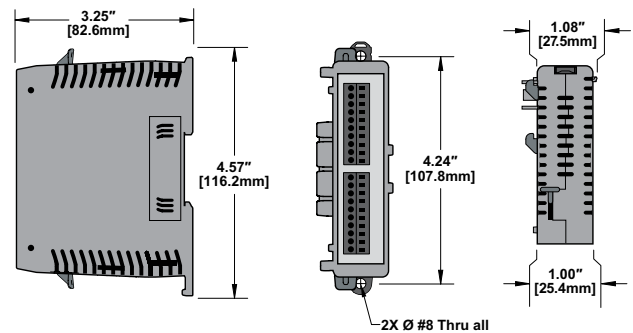
	Outputs Required	Function	BX-HSIO2
Pulse Mode	0	Virtual axis	Up to (4)
	2	PTO linear step/direction outputs	Up to (3)
	2	PTO rotary clockwise/counter-clockwise (CW/CCW) outputs	
	2	PTO quadrature (A and B) output	
	1	PWM pulse width modulation outputs	Up to (4)
Axis Profile		Relative/Absolute positioning, Velocity mode, Trapezoid, S-curve, Electronic gearing, Camming, Following, Homing, Jogging	

Module Installation

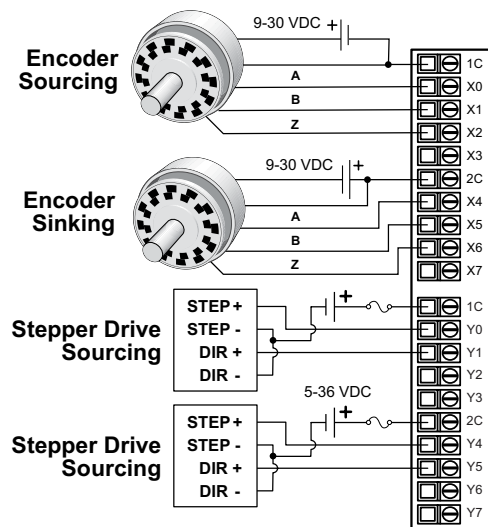


Dimensional Information

Note: Drawings are for reference only. Shown without terminal blocks.



Note: VDD = 24VDC – 1KΩ resistor is needed for servo to handle this voltage. The 1KΩ resistors are not needed if a 5VDC source is used.



Connector Options

Part Number	Terminal Block Kit, 90-degree screw type. For use with BRX 10-point PLCs and BRX 16-point discrete expansion modules. Kit includes (2) 10-pin 3.8mm plugs.
BX-RTB10	
BX-RTB10-1	Terminal Block Kit, 180-degree spring clamp type. For use with BRX 10-point PLCs and BRX 16-point discrete expansion modules. Kit includes (2) 10-pin 3.8mm plugs.
BX-RTB10-2	Terminal Block Kit, 180-degree screw type. For use with BRX 10-point PLCs and BRX 16-point discrete expansion modules. Kit includes (2) 10-pin 3.8mm plugs.

Terminal Block Connector Specifications

Part Number	BX-RTB10	BX-RTB10-1	BX-RTB10-2
Connector Type	Screw Type-90°	Spring Clamp Type-180°	Screw Type-180°
Wire Exit	180°	180°	180°
Pitch	3.81mm	3.81mm	3.81mm
Screw Size	M2	N/A	M2
Recommended Screw torque	<1.77 lb-in (0.2 N·m)	N/A	<1.77 lb-in (0.2 N·m)
Screwdriver Blade Width	2.5mm	2.5mm	2.5mm
Wire Gauge (Single Wire)	28-16 AWG	28-18 AWG	30-16 AWG
Wire Gauge (Two Wires)	28-18 AWG	30-20 AWG (Dual Wire Ferrule Required)	30-18 AWG
Wire Strip Length	0.24in (6mm)	0.35in (9mm)	0.26in (6.5mm)
Equiv. Dinkle part #	EC381V-10P-BK	ESC381V-10-BK	EC381F-10P-BK