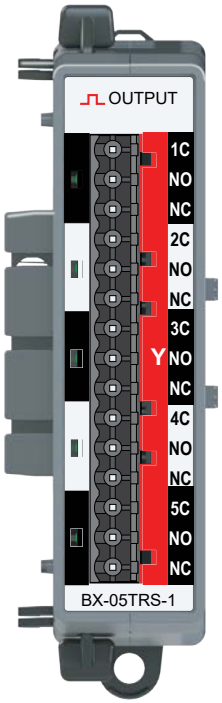
BX-05TRS-1 Relay Output Module



Terminal Blocks Sold Separately

BX-05TRS-1

Output Module 5-pt,
Relay Form C (SPDT)

Discrete Output Specifications	
Output Type	Relay, Form C (SPDT)
Outputs per Module	5
Commons	5 Isolated
Maximum Current per Common	8A
Nominal Voltage Range	5–48 VDC, 24–240 VAC
Operating Voltage Range	5–120 VDC, 18–264 VAC
Peak Voltage	120VDC, 264VAC
Minimum Output Current	0.1 mA @ 24VDC
Maximum Output Current	
@30VDC Resistive Load	8A
@50VDC Resistive Load	3A
@120VDC Resistive Load	0.5 A
@120VAC Resistive Load	8A
@240VAC Resistive Load	5A
@120VAC Inductive 0.4 Power Factor	5A
@240VAC Inductive 0.4 Power Factor	2A
Maximum Inrush Current	15A for 50ms
Maximum Leakage Current	10µA
ON Voltage Drop	0.2 Vmax
ON-OFF Response	<10ms
OFF-ON Response	<10ms
Fuse Type	N/A
Maximum Switching Frequency	10Hz
Relay Cycle Life	
Mechanical Endurance	5 Million Operations
Electrical Endurance	120,000 Operations
Status Indicators	Logic Side, Green
Software Version Required	Do-more! Designer version 2.8 or later

NOTE: This device does not support ***ZIP***Link Wiring Systems

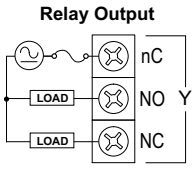
IMPORTANT!

Hot-Swapping Information

Note: This device cannot be Hot Swapped.

NOTE: When using relay expansion modules, adding more than 32 relay points requires you to perform a power budget calculation. See Appendix B in the Hardware Manual for more information.

Relay Output Wiring Diagram



BRX Discrete Expansion Modules

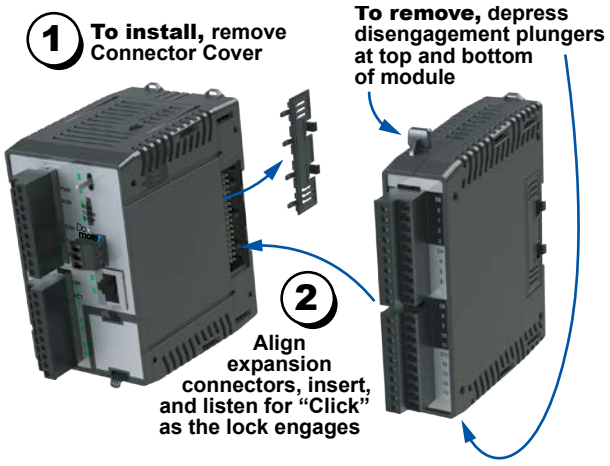
Overview

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 in place and is added to the project, it instantly adds I/O to the MPU with little to no additional setup required.

The expansion modules give you the ability to add discrete I/O as needed and are identified as an input module, output module or combination input/output module. On the front panel of the discrete I/O expansion modules, a color scheme and a symbol are used to denote the module type.

Most modules are available in 5, 8, 12 or 16 point variations consisting of sink/source DC inputs/outputs, AC inputs/outputs, relay outputs and combination modules. Some are available with 32 points.

The modules ship without wiring terminals. This allows you to select the termination style that best fits your application. Several wiring options are available, including screw terminal connectors, spring clamp terminal connectors and pre-wired ***ZIP***Link cable solutions.



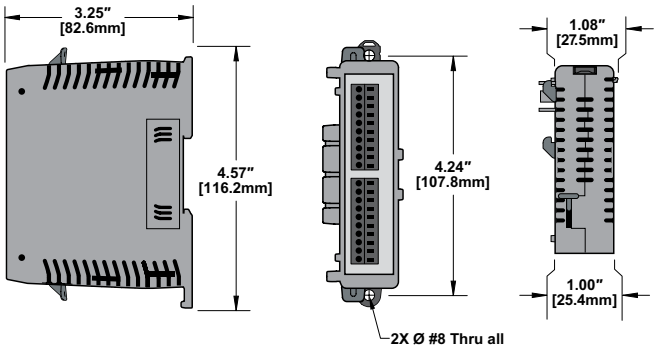
Hot-Swapping Information
Note: This device cannot be Hot Swapped.

General Specifications

All BRX discrete expansion 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 Help File
Agency Approvals	UL 61010-2 - UL File # E185989 Canada and USA CE Compliant EN61131-2

Dimensions, inches[mm]

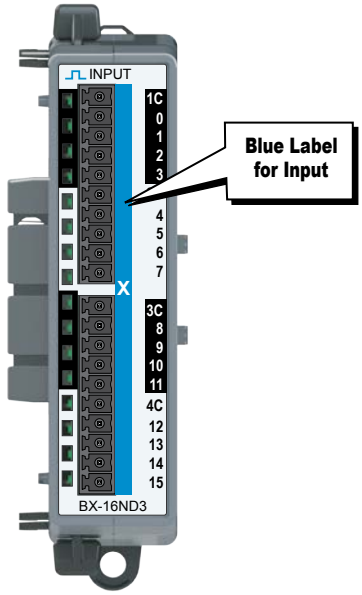


NOTE: When removing an expansion module make sure there is room for the module to slide away from the system. Failure to do so will result in difficulty in removing the module.

BRX Discrete Expansion Modules

Discrete Input Modules

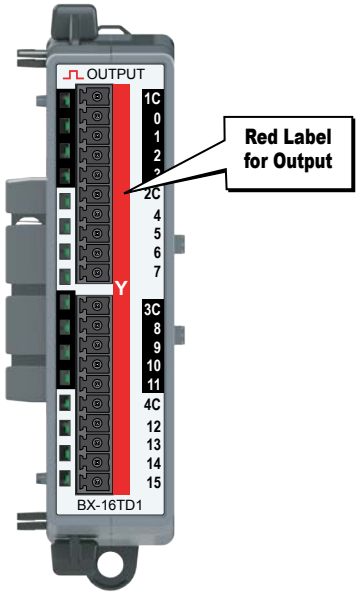
Thirteen (13) discrete input modules are available in various DC and AC voltage ranges. Input module faceplates have a blue terminal bar and symbol ⎍ for easy distinction from other module types.



Discrete Input Modules			
Part Number	***Points***	***Input Type***	***Price***
BX-08NF3	8	3 – 5 VDC Sink / Source	
BX-08ND3		12 – 24 VDC Sink / Source	
BX-08NB		24VAC	
BX-08NA		120VAC	
BX-08SIM		Simulator	
BX-12ND3	12	12 – 24 VDC Sink / Source	
BX-12NB		24VAC	
BX-12NA		120VAC	
BX-16NF3	16	3–5 VDC Sink/Source	
BX-16ND3		12 – 24 VDC Sink / Source	
BX-16NB		24VAC	
BX-16NA		120VAC	
BX-32ND3	32	12 – 24 VDC Sink / Source	

Discrete Output Modules

Eighteen (18) discrete output modules are available in DC sinking, DC sourcing, AC voltage and Relay type outputs. Output module faceplates have a red terminal bar and symbol ⎍ for easy distinction from other module types.

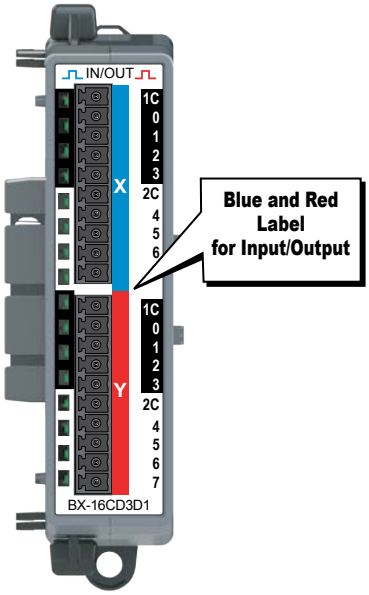


Discrete Output Modules			
Part Number	***Points***	***Output Type***	***Price***
BX-05TRS	5	Relay Form C (SPDT)	
BX-05TRS-1		Relay Form C (SPDT)	
BX-08TD1	8	12 – 24 VDC Sinking	
BX-08TD2		12 – 24 VDC Sourcing	
BX-08TR		Relay Form A (SPST)	
BX-08TA		120 – 240 VAC Triac	
BX-08TRZ		Relay Form A (SPST), no surge suppression	
BX-12TD1	12	12 – 24 VDC Sinking	
BX-12TD2		12 – 24 VDC Sourcing	
BX-12TR		Relay Form A (SPST)	
BX-12TA		120 – 240 VAC Triac	
BX-16TD1	16	12 – 24 VDC Sinking	
BX-16TD2		12 – 24 VDC Sourcing	
BX-16TF2		3–5 VDC Sourcing	
BX-16TR		Relay Form A (SPST)	
BX-16TRZ		Relay Form A (SPST), no surge suppression	
BX-32TD1	32	12 – 24 VDC Sinking	
BX-32TD2		12 – 24 VDC Sourcing	

BRX Discrete Expansion Modules

Discrete Combo Input / Output Modules

Six discrete input/output combo modules are available with DC sink/source inputs and sink/source/relay outputs. The Input/Output faceplate terminal bar is in blue and red, making it easy to distinguish between inputs and outputs and from other module types.



Discrete Combo Input / Output Modules					
Part Number	Points		Input Type	Output Type	Price
	Input	Output			
BX-08CD3R	4	4	12–24 VDC Sink / Source	Relay Form A (SPST)	
BX-12CD3D1	8	4		12–24 VDC Sinking	
BX-12CD3D2				12–24 VDC Sourcing	
BX-16CD3D1	8	8		12–24 VDC Sinking	
BX-16CD3D2				12–24 VDC Sourcing	
BX-16CF3F2			3–5 VDC Sink/Source	3–5 VDC Sourcing	

Expansion Module Support by Controller	
Controller Type	# Expansion Modules
BX-DM1E-M	8
BX-DM1-10	2
BX-DM1E-10	2
BX-DM1-18	4
BX-DM1E-18	8
BX-DM1-36	4
BX-DM1E-36	8
BX-DMIO*	8
BX-EBC100*	8
BX-MBIO*	8

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

BRX Wiring Termination Options

Terminal Block Connectors

The terminal block connectors are provided in kits of multiple connectors that are ordered as a single part number. There are 2 different types of kits to choose from; one kit for the five (5), eight (8) and 12-point discrete, and one kit for the analog modules and 16-point discrete modules. The five (5), eight (8) and 12-point discrete module kits each have (3) 5-pin 5mm connectors. The 8-point modules will use only 2 of the 5-pin connectors.

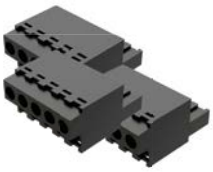
The five (5) and 12-point modules will use all three connectors. The analog and 16-point digital module kits include (2) 10-pin 3.81 mm connectors.

Terminal Block Connectors, 5, 8 and 12-Point Discrete Modules

Terminal Block Kits for 5-point, 8-point and 12-point Expansion Modules

BX-RTB08 (Kit - 3 pieces)

BX-RTB08-1 (Kit - 3 pieces)



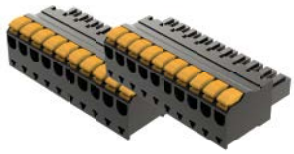
BX-RTB08-2 (Kit - 3 pieces)

Terminal Block Specifications 5-, 8- & 12-Point Type			
Part Number Single Block Set of 3 Blocks	***BX-RTB05 BX-RTB08***	***BX-RTB05-1 BX-RTB08-1***	***BX-RTB05-2 BX-RTB08-2***
Price (Single Block)			
Price (Kit)			
Connector Type	Screw Type - 90-degree	Spring Clamp Type - 180-degree	Screw Type - 180-degree
Wire Exit	180-degree	180-degree	180-degree
Pitch	5.0 mm	5.0 mm	5.0 mm
Screw Size	M2.5	N/A	M2.5
Screw Torque Recommended	< 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 (Dual Wire)	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-05P-BK	5ESDSR-05P-BK	5ESDF-05P-BK

Terminal Block Connectors, Analog Modules and 16-Point Discrete Modules

Terminal Block Kits for Analog and 16-point Discrete Expansion Modules

BX-RTB10 (Kit - 2 pieces)



BX-RTB10-1 (Kit - 2 pieces)

BX-RTB10-2 (Kit - 2 pieces)

Terminal Block Specifications 16-Point Type			
Part Number	***BX-RTB10***	***BX-RTB10-1***	***BX-RTB10-2***
Price (Kit)			
Connector Type	Screw Type 90-degree	Spring Clamp Type 180-degree	Screw Type 180-degree
Wire Exit	180-degree	180-degree	180-degree
Pitch	3.81 mm	3.81 mm	3.81 mm
Screw Size	M2	N/A	M2
Screw Torque Recommended	<1.77 lb·in (0.2 N·m)	N/A	<1.77 lb·in (0.2 N·m)
Screwdriver Blade Width	2.5 mm	2.5 mm	2.5 mm
Wire Gauge (Single Wire)	28–16 AWG	26–18 AWG	30–16 AWG
Wire Gauge (Dual Wire)	28–18 AWG	30–20 AWG (Dual Wire Ferrule Required)	30–18 AWG
Wire Strip Length	0.24 in (6mm)	0.35 in (9mm)	0.26 in (6.5 mm)
Equiv. Dinkle P/N	EC381V-10P-BK	ESC381V-10-BK	EC381F-10P-BK

NOTE: BX-RTB10 terminal blocks are included with Temperature Input modules.