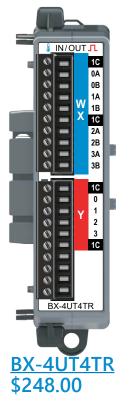
For the latest prices, please check AutomationDirect.com.

1-800-633-0405 **BX-4UT4TR** Universal Temp. Input/ Relay Output



Universal Temperature Input/ Relay Output Expansion Module 4-pt Universal Temperature Input 4-pt Relay Form A (SPST) Output

BX-RTB10 Terminal Blocks Included. The BX-RTB10-1 or BX-RTB10-2 (purchased separately) can also be used.



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

Input Channels 4 Differential Commons 1 Input Impedance >5MQ Resolution 24bit.01% Or F) See Data Range Specifications table 1 All Channel Update Rate 1s max (4 thermocouples enabled) Sample Duration Time 175ms Open Circuit Detection Time Within 5s Maximum Ratings -0.3 V to +5.3 V, <15mA Common Mode Rage -0.3 V to +5.3 V, <20mA Common Mode Rejection 100db@0C, 130db@60Hz Conversion Method Sigma-Delta, 24-bit Thermocouple Input Ranges Type J: -210° to 1200°C [-346° to 2302°F] Type K: -266° to 1000°C [-445' to 2302°F] Type K: -266° to 1000°C [-445' to 2327°F] Type K: -50° to 1768°C [-645' to 272°F] Type K: -266° to 1000°C [-445' to 1324°F] Type K: -266° to 1000°C [-445' to 752°F] Type K: -266° to 1000°C [-445' to 752°F] Type K: -266° to 1000°C [-445' to 752°F] Type K: -266° to 1000°C [-	Universal Tempe	Universal Temperature Input Specifications				
Commons 1 Input Impedance >5MΩ Resolution 24-bit, 0.1°(C or F) See Data Range Specifications table All Channel Update Rate 1s max (4 thermocouples enabled) 700ms max (4 thermocouples enabled) Sample Duration Time 175ms Open Circuit Detection Time Within 5s Maximum Ratings -0.3 V to +5.3 V, <15mA Common Mode Range -0.3 V to +5.3 V, <15mA Common Mode Rejection 100dBg@Cl.30dBg@CHz Conversion Method Sigma-Delta, 24-bit Thermocouple Parameters Type J: -210° to 1200°C [-446° to 2192°F] Type K: -266° to 1302°C [-446° to 2502°F] Type K: -50° to 1788°C [-58° to 3300°C [-445° to 2502°F] Type R: -50° to 1788°C [-58° to 3214°F] Type R: -50° to 1788°C [-58° to 3308°F] Type R: -50° to 1788°C [-58° to 3308°F] Type R: -50° to 1788°C [-58° to 3308°F] Type R: -50° to 1788°C [-58° to 3308°F] Type R: -50° to 1788°C [-58° to 3308°F] Type R: -50° to 1788°C [-58° to 3308°F] Type R: -50° to 1788°C [-58° to 3308°F] Type R: -50° to 1788°C [-58° to 3308°F] Type R: -50° to 1788°C [-58° to 3308°F] Type R: -50° to 1788°C [-58° to 3308°F] Type R: -50° to 1788°C [-445° to 7824°F] Type R: -50° to 1788°C [-445° to 7824°F						
Resolution 24-bit, 0.1°(C or F) See Data Range Specifications table All Channel Update Rate 1s max (4 thermocouples enabled) 700ms max (4RTD/NTXmV enabled) Sample Duration Time 175ms Open Circuit Detection Time Within 5s Maximum Ratings -0.3 V to +5.3 V, 415mA Common Mode Rejection 100dB@DC, 130dB@60Hz Conversion Method Sigma-Delta, 24-bit Thermocouple Parameters Type J: -210° to 1200°C [-346° to 2192°F] Type K: -265° to 1030°C [-445° to 2302°F] Type K: -265° to 1030°C [-445° to 2302°F] Type B: -265° to 1000°C [-445° to 2302°F] Type K: -265° to 1076°C [-58° to 3214°F] Type B: -265° to 1000°C [-445° to 2302°F] Type K: -50° to 1768°C [-58° to 3214°F] Type B: -50° to 1768°C [-58° to 3214°F] Type B: -50° to 1768°C [-58° to 3214°F] Type B: -50° to 1768°C [-58° to 3214°F] Type B: -50° to 1768°C [-68° to 3214°F] Type B: -50° to 1768°C [-58° to 3214°F] Type B: -30° to 1768°C [-68° to 3214°F] Type B: -50° to 1768°C [-58° to 3214°F] Type B: -30° to 1760°C [-445° to 752°F]		1				
Resolution See Data Range Specifications table All Channel Update Rate 1s max (4 thermocouples enabled) Sample Duration Time 175ms Open Circuit Detection Time Within 5s Maximum Ratings -0.3 V to +5.3 V Common Mode Range -0.3 V to +5.3 V Common Mode Rejection 1004B@DC, 1304B@60Hz Conversion Method Sigma-Delta, 24-bit Thermocouple Input Ranges Type J: -210° to 1200°C [-445° to 2302°F] Type K: -265° to 1000°C [-445° to 2332°F] Type K: -265° to 1000°C [-445° to 2332°F] Type B: -50° to 1768°C [-58° to 3214°F] Type R: -50° to 1768°C [-58° to 3214°F] Type S: -50° to 1768°C [-58° to 3214°F] Type R: -50° to 1768°C [-58° to 3214°F] Type R: -50° to 1768°C [-58° to 3214°F] Type R: -50° to 1768°C [-58° to 3214°F] Type R: -50° to 1768°C [-58° to 3214°F] Type R: -50° to 1768°C [-58° to 3214°F] Type R: -50° to 1768°C [-58° to 3214°F] Type R: -3125 to 125 mVDC 0 to 1.0 VDC Cold Junction Compensation Automatic Automatic Maximum Inaccuracy- 10,	Input Impedance	>5MΩ				
All Channel Opdate Rate 700ms max (4RTD/NTX/mV enabled) Sample Duration Time 175ms Open Circuit Detection Time Within 5s Maximum Ratings -0.3 V to +5.3 V Common Mode Range -0.3 V to +5.3 V Common Mode Rejection 100dB@DC, 130dB@60Hz Conversion Method Sigma-Delta, 24-bit Thermocouple Parameters Type J: -210° to 1200°C [-445° to 2502°F] Type K: -265° to 130°C [-445° to 2502°F] Type N: -265° to 130°C [-445° to 2502°F] Type R: -50° to 1768°C [-58° to 3214°F] Type N: -265° to 130°C [-445° to 2512°F] Type R: -50° to 1768°C [-58° to 3214°F] Type S: -50° to 1768°C [-58° to 3214°F] Type S: -50° to 1768°C [-45° to 250°C] 100° to 3214°F] Type S: -3125 to 125m VDC -3125 to 125m VDC Cold Junction Compensation Automatic Automatic Automatic Maximum InaccuracyVoltage ±250µV 200µV RTD/Thermistor Parameters Input Ranges (RTD Types) 10, 50, 100, 200, 500, 1000Ω Pt <	Resolution					
Open Circuit Detection Time Within 5s Maximum Ratings -0.3 V to +5.3 V. Common Mode Range -0.3 V to +5.3 V Common Mode Rejection 100dB@DC, 130dB@60Hz Conversion Method Sigma-Dela, 24-bit Thermocouple Parameters Type J: -210° to 1200°C [-346° to 2192°F] Type K: -265° to 1300°C [-445° to 2372°F] Type K: -265° to 1300°C [-445° to 2372°F] Type N: -265° to 1300°C [-445° to 2372°F] Type R: -56° to 1768°C [-58° to 3214°F] Type N: -265° to 1300°C [-445° to 2372°F] Type R: -56° to 1768°C [-58° to 3214°F] Type N: -265° to 1300°C [-445° to 2372°F] Type R: -56° to 1020°C [104° to 3308°F] Type R: -56° to 120°C [-445° to 2372°F] Type R: -265° to 400°C [-445° to 2372°F] Cold Junction Compensation Automatic -31.25 to 125 mVDC 0 to 1.0 VDC Cold Junction Compensation Automatic Maximum Inaccuracy- ±(0.2°C + 3% of °C reading) Maximum Inaccuracy-Voltage ±250 k2 M @ 25°C: -40° to 150°C [-40° to 302°F] 200 Ni Input Ranges 10, 50, 100, 200, 500, 100000 PI Platinum RTD 0.00572 Curve: -	All Channel Update Rate					
Maximum Ratings -0.3 V to +5.3 V, <15mA	Sample Duration Time	175ms				
Common Mode Range -0.3 V to +5.3 V Common Mode Rejection 100dB@DC, 130dB@60Hz Conversion Method Sigma-Delta, 24-bit Thermocouple Parameters Type J: -210° to 1200°C [-346° to 2192°F] Type K: -265° to 1372°C [-445° to 2372°F] Type K: -265° to 1300°C [-445° to 2372°F] Type R: -50° to 1768°C [-58° to 3214°F] Type R: -50° to 1768°C [-58° to 3214°F] Type R: -50° to 1768°C [-58° to 3214°F] Type R: -265° to 400°C [-445° to 3308°F] Type R: -50° to 1768°C [-58° to 3214°F] Type R: -265° to 400°C [-445° to 3308°F] Type R: -265° to 400°C [-445° to 3308°F] Type R: -265° to 400°C [-445° to 3308°F] Type R: -265° to 400°C [-445° to 3308°F] Type R: -265° to 400°C [-445° to 752°F] Linear Voltage Input Ranges -31.25 to 31.25 mVDC -31.25 to 125mVDC -31.25 to 125mVDC Cold Junction Compensation Automatic Maximum Inaccuracy– ±(0.2°C + 3% of °C reading) Maximum Inaccuracy– ±(0.2°C + 3% of °C reading) 100°C [-40° to 3002°F] 10°C [-40° to 500°C [-40° to 3002°F] Input Ranges 10, 50, 100, 20, 20, 500, 10000	Open Circuit Detection Time	Within 5s				
Common Mode Rejection 100dB@DC, 130dB@60Hz Conversion Method Sigma-Delta, 24-bit Thermocouple Parameters Type J: Type K: -265° to 1302°C [-346° to 2192°F] Type K: -265° to 1302°C [-445° to 2502°F] Type K: -265° to 1302°C [-445° to 2372°F] Type K: -265° to 100°C [-445° to 2372°F] Type K: -265° to 100°C [-445° to 2372°F] Type K: -50° to 1768°C [-58° to 3214°F] Type S: -50° to 1768°C [-58° to 3214°F] Type S: -50° to 1768°C [-58° to 300°C [-445° to 752°F] Type S: -50° to 100°C [-445° to 752°F] Linear Voltage Input Ranges -31.25 to 31.25 mVDC -31.25 to 10° VOC -31.25 to 10° VOC Cold Junction Compensation Automatic Maximum Inaccuracy— ±(0.2°C + 3% of °C reading) Maximum Inaccuracy— ±(0.2°C + 3% of °C reading) 1000000 Pt Platinum RTD 0.00385 European Curve: Input Ranges (RTD Types) 10, 50, 100, 200, 500, 1000Ω Pt Platinum RTD 0.00385 European Curve: 200°° C Input Ranges (RTD Types) 10, 50, 100, 200, 500, 100072 Curve: 3 kΩ @ 25°C: -40° to 150°C [-40° to 302°F] Sk@ @ 25°C: 40° to 150°C [-40° to 302°F] 3 k	Maximum Ratings	-0.3 V to +5.3 V, <15mA				
Conversion Method Sigma-Delta, 24-bit Thermocouple Parameters Type J: -210° to 1200°C [-346° to 2192°F] Type K: -265° to 1300°C [-445° to 1832°F] Type K: -265° to 1300°C [-445° to 1832°F] Type R: -265° to 1000°C [-445° to 2372°F] Thermocouple Input Ranges Type R: -50° to 1768°C [-58° to 3214°F] Type R: -50° to 1768°C [-58° to 3214°F] Type S: -50° to 1768°C [-58° to 3214°F] Type R: -50° to 1768°C [-58° to 3214°F] Type S: -50° to 1768°C [-58° to 3214°F] Type S: -50° to 1768°C [-58° to 3208°F] Type S: -50° to 1768°C [-58° to 3208°F] Type T: -265° to 400°C [-445° to 752°F] Linear Voltage Input Ranges -31.25 to 31.25 mVDC -31.25 to 125mVDC -31.25 to 31.25 mVDC -31.25 to 125mVDC -31.25 to 62.5 mVDC -31.25 to 125mVDC -31.25 to 62.5 mVDC -0 to 1.0 VDC Cold Junction Compensation Automatic Maximum Inaccuracy- ±(0.2°C + 3% of °C reading) Maximum Inaccuracy- ±250µV RTD/Thermistor Parameters 10, 50, 100, 200, 500, 1000Ω Pt Input Ranges (RTD Types) 1200 Ni NT120 Nickel RTD 0.006772 Curve: -200° to 850°C [-40° to 150°C [-40° to 302°F] 10k-AN Type 3 @ 25°C: -40° to 150°C [-40° to 302°F] 3 kQ @ 25°C: -40° to 150°C [-40° to 302°F]	Common Mode Range	-0.3 V to +5.3 V				
Thermocouple Parameters Type J: -210° to 1200°C [-346° to 2192°F] Type K: -265° to 1372°C [-445° to 2502°F] Type K: -265° to 1372°C [-445° to 2372°F] Type K: -265° to 1300°C [-445° to 2372°F] Type R: -50° to 1768°C [-58° to 3214°F] Type S: -50° to 1768°C [-58° to 3214°F] Type B: -40° to 1820°C [444° to 3308°F] Type B: -50° to 1768°C [-58° to 3214°F] Type S: -50° to 1768°C [-445° to 752°F] Linear Voltage Input Ranges -31.25 to 62.5 mVDC -31.25 to 125 mVDC Thermocouple Linearization Automatic Automatic Maximum Inaccuracy– ±(0.2°C + 3% of °C reading) ±250µV Input Ranges 10, 50, 100, 200, 500, 1000Ω Pt Platatinum RTD 0.00385 European Curve: -200° to 850°C [-40° to	Common Mode Rejection	100dB@DC, 130dB@60Hz				
Thermocouple Input Ranges Type J: Type K: Type K: -265° to 1300°C [-445° to 2502°F] (-445° to 2372°F] Type R: -265° to 1300°C Type N: Type R: -50° to 1768°C [-58° to 3214°F] Type R: -50° to 1768°C [-58° to 3214°F] Type R: -50° to 1768°C Type R: Type R: -50° to 1768°C [-58° to 3214°F] Type R: -50° to 1768°C [-445° to 2502°F] Linear Voltage Input Ranges -31.25 to 182°C [-445° to 752°F] Linear Voltage Input Ranges -31.25 to 31.25 mVDC -31.25 to 125mVDC Cold Junction Compensation Automatic 0 to 1.0 VDC Cold Junction Compensation Automatic Maximum Inaccuracy– thermocouple ±(0.2°C + 3% of °C reading) ±(0.2°C + 3% of °C reading) Maximum Inaccuracy– Thermocouple ±250µV 100, 50, 100, 200, 500, 1000Ω Pt Input Ranges (RTD Types) 10, 50, 100, 200, 500, 1000Ω Pt Platinum RTD 0.00385 European Curve: -200° to 850°C [-40° to 500°F] Linear Input Ranges 10, 50, 100, 200, 500, 1000Ω Pt Platinum RTD 0.00672 Curve: -80° to 260°C [-112° to 500°F] Thermistor Input Ranges 2.252 kΩ @ 25°C: -40° to 150°C [-40° to 302°F] SkQ @ 25°C: -40° to 150°C [-40° to 302°F] 3 kQ @ 25°C: -40° to 150°C [-40° to 302°F] SkQ @ 25°C: -40° to 150°C [-40° to 302°F]	Conversion Method	Sigma-Delta, 24-bit				
Type K: -265° to 1372°C Î-445° to 2302°F] Type E: -265° to 1000°C [-445° to 1332°F] Type N: -265° to 1300°C [-445° to 1332°F] Type N: -265° to 1300°C [-445° to 1332°F] Type N: -50° to 1768°C [-58° to 3214°F] Type S: -50° to 1768°C [-445° to 752°F] Linear Voltage Input Ranges -31.25 to 31.25 mVDC -31.25 to 125mVDC -31.25 to 62.5 mVDC 0 to 1.0 VDC Cold Junction Compensation Automatic Maximum Inaccuracy- Thermocouple ±(0.2°C + 3% of °C reading) #10.50, 100, 200, 500, 10000 Pt Maximum Inaccuracy-Voltage ±250µV #100, 100, 200, 500, 10000 Pt Input Ranges (RTD Types) 10, 50, 100, 200, 500, 10000 Pt Platinum RTD 0.00872 Curve: -80° to 260°C [-112° to 500°F] Input Ranges (RTD Types) 1200 Ni N120 Nickel RTD 0.00672 Curve: -80° to 150°C [-40° to 302°F] SkQ @ 25°C: -40° to 150°C [-40° to 302°F]	Thermocouple Parameters					
Linear Voltage Input Ranges -31.25 to 62.5 mVDC 0 to 1.0 VDC Cold Junction Compensation Automatic Thermocouple Linearization Automatic Maximum Inaccuracy- Thermocouple ±(0.2°C + 3% of °C reading) Maximum Inaccuracy- Voltage ±250µV RTD/Thermistor Parameters 10, 50, 100, 200, 500, 1000Ω Pt Platinum RTD 0.00385 European Curve: -200° to 850°C [-328° to 1562°F] Input Ranges (RTD Types) 120Ω Ni N120 Nickel RTD 0.00672 Curve: -80° to 260°C [-112° to 500°F] Linearization Input Ranges 2.252 kΩ @ 25°C: -40° to 150°C [-40° to 302°F] 3 kΩ @ 25°C: -40° to 150°C [-40° to 302°F] Thermistor Input Ranges RTD 10, 100, 120, 200: 1mA RTD 500: 500µA RTD 10, 100, 120, 200: 1mA RTD 1000: 250µA RTD Excitation Current NTC 2.252k, NTC 3k: 10µA NTC 2.50k; NTC 10k: 5µA NTC 30k: 1µA RTD/Thermistor Linearization Automatic	Thermocouple Input Ranges	Type K: -265° to 1372°C [-445° to 2502°F] Type E: -265° to 1000°C [-445° to 1832°F] Type N: -265° to 1300°C [-445° to 2372°F] Type R: -50° to 1768°C [-58° to 3214°F] Type S: -50° to 1768°C [-58° to 3214°F] Type B: 40° to 1820°C [104° to 3308°F]				
Thermocouple Linearization Automatic Maximum Inaccuracy- Thermocouple ±(0.2°C + 3% of °C reading) Maximum Inaccuracy-Voltage ±250µV RTD/Thermistor Parameters 10, 50, 100, 200, 500, 1000Ω Pt Platinum RTD 0.00385 European Curve: -200° to 850°C [-328° to 1562°F] Input Ranges (RTD Types) 120Ω Ni N120 Nickel RTD 0.00672 Curve: -80° to 260°C [-112° to 500°F] Learning 2.252 kΩ @ 25°C: -80° to 260°C [-40° to 302°F] SkΩ @ 25°C: -40° to 150°C [-40° to 302°F] SkΩ @ 25°C: -40° to 150°C [-40° to 302°F] SkΩ @ 25°C: -40° to 150°C [-40° to 302°F] SkΩ @ 25°C: -40° to 150°C [-40° to 302°F] SkΩ @ 25°C: -40° to 150°C [-40° to 302°F] SkΩ @ 25°C: -40° to 150°C [-40° to 302°F] SkΩ @ 25°C: -40° to 150°C [-40° to 302°F] SkΩ @ 25°C: -40° to 150°C [-40° to 302°F] SkΩ @ 25°C: -40° to 150°C [-40° to 302°F] RTD Excitation Current RTD 10, 100, 120, 200: 1mA RTD 500: StΩ @ 250µA 10µA RTD 1000: 250µA RTD 75k, NTC 10k: 5µA NTC 30k: 1µA RTD/Thermistor Linearization Automatic	Linear Voltage Input Ranges					
Maximum Inaccuracy- Thermocouple ±(0.2°C + 3% of °C reading) Maximum Inaccuracy-Voltage ±250µV RTD/Thermistor Parameters 10, 50, 100, 200, 500, 1000Ω Pt Platinum RTD 0.00385 European Curve: -200° to 850°C [-328° to 1562°F] Input Ranges (RTD Types) 10, 50, 100, 200, 500, 1000Ω Pt Platinum RTD 0.00385 European Curve: -200° to 850°C [-328° to 1562°F] Thermistor Input Ranges 120Ω Ni N120 Nickel RTD 0.00672 Curve: -80° to 260°C [-112° to 500°F] Thermistor Input Ranges 2.252 kΩ @ 25°C: -40° to 150°C [-40° to 302°F] 3 kΩ @ 25°C: -40° to 150°C [-40° to 302°F] Thermistor Input Ranges RTD 10, 100, 120, 200: RTD 500: RTD Excitation Current RTD 10, 100, 120, 200: RTD 1000: 250µA 1mA RTD 500: S00µA RTD 1000: 250µA NTC 2.252k, NTC 3k: NTC 30k: NTC 30k: NTC 30k: 1µA RTD/Thermistor Linearization Automatic	Cold Junction Compensation	Automatic				
Thermocouple ±(0.2 °C + 3 % 01 °C reading) Maximum Inaccuracy–Voltage ±250μV RTD/Thermistor Parameters 10, 50, 100, 200, 500, 1000Ω Pt Platinum RTD 0.00385 European Curve: -200° to 850°C [-328° to 1562°F] Input Ranges (RTD Types) 120Ω Ni N120 Nickel RTD 0.00672 Curve: -80° to 260°C [-112° to 500°F] Learning 2.252 kΩ @ 25°C: -40° to 150°C [-40° to 302°F] Thermistor Input Ranges 2.252 kΩ @ 25°C: -40° to 150°C [-40° to 302°F] Thermistor Input Ranges RTD Thermistor Linearization RTD Excitation Current RTD 10, 100, 120, 200: RTD 100; 1mA RTD 500; S00µA RTD 1000; 250µA NTC 2.52k, NTC 3k; 10µA NTC 30k; 1µA RTD/Thermistor Linearization Automatic	Thermocouple Linearization	Automatic				
RTD/Thermistor Parameters Input Ranges (RTD Types) 10, 50, 100, 200, 500, 1000Ω Pt Platinum RTD 0.00385 European Curve: -200° to 850°C [-328° to 1562°F] 120Ω Ni N120 Nickel RTD 0.00672 Curve: -80° to 260°C [-112° to 500°F] 120Ω Ni N120 Nickel RTD 0.00672 Curve: -80° to 260°C [-112° to 500°F] Thermistor Input Ranges 2.252 kΩ @ 25°C: -40° to 150°C [-40° to 302°F] 3 kΩ @ 25°C: -40° to 150°C [-40° to 302°F] Thermistor Input Ranges 8.25°C: -40° to 150°C [-40° to 302°F] RTD Excitation Current RTD 10, 100, 120, 200: RTD 10, 100, 120, 200: 1mA RTD 500: 500µA RTD 1000: RTD Thermistor Excitation Current NTC 2.252k, NTC 3k: NTC 50, NTC 10k: 10µA NTC 5µA NTC 30k: RTD/Thermistor Linearization Automatic		±(0.2°C + 3% of °C reading)				
Input Ranges (RTD Types) 10, 50, 100, 200, 500, 1000Ω Pt Platinum RTD 0.00385 European Curve: -200° to 850°C [-328° to 1562°F] 120Ω Ni 120Ω Ni N120 Nickel RTD 0.00672 Curve: -80° to 260°C [-112° to 500°F] 2.252 kΩ @ 25°C: -40° to 150°C [-40° to 302°F] 3 kΩ @ 25°C: -40° to 150°C [-40° to 302°F] 3 kΩ @ 25°C: -40° to 150°C [-40° to 302°F] Thermistor Input Ranges 2.252 kΩ @ 25°C: -40° to 150°C [-40° to 302°F] 3 kΩ @ 25°C: -40° to 150°C [-40° to 302°F] 3 kΩ @ 25°C: -40° to 150°C [-40° to 302°F] 3 kΩ @ 25°C: -40° to 150°C [-40° to 302°F] 3 kΩ @ 25°C: -40° to 150°C [-40° to 302°F] 8TD Excitation Current RTD 10, 100, 120, 200: 1mA RTD 500: 500µA S00µA RTD 1000: 250µA YTC 5k, NTC 3k: 10µA NTC 2.252k, NTC 3k: 10µA NTC 5µA RTD/Thermistor Linearization Automatic	Maximum Inaccuracy–Voltage	±250µV				
Input Ranges (RTD Types) Platinum RTD 0.00385 European Curve: -200° to 850°C [-328° to 1562°F] 120Ω Ni 120Ω Ni N120 Nickel RTD 0.00672 Curve: -80° to 260°C [-112° to 500°F] 2.252 kΩ @ 25°C: -40° to 150°C [-40° to 302°F] 3 kΩ @ 25°C: -40° to 150°C [-40° to 302°F] 3 kΩ @ 25°C: -40° to 150°C [-40° to 302°F] 3 kΩ @ 25°C: -40° to 150°C [-40° to 302°F] 10k-AN Type 3 @ 25°C: -40° to 150°C [-40° to 302°F] 30 kΩ @ 25°C: -40° to 150°C [-40° to 302°F] 8TD Excitation Current RTD 10, 100, 120, 200: RTD 1000: 250µA RTD 1000: 250µA NTC 2.52k, NTC 3k: 10µA NTC 5k, NTC 10k: 5µA NTC 30k: 1µA RTD/Thermistor Linearization Automatic	RTD/Thermistor Parameters					
Image: Thermistor Input Ranges 2.252 kΩ @ 25°C: -40° to 150°C [-40° to 302°F] 3 kΩ @ 25°C: -40° to 150°C [-40° to 302°F] 5 kΩ @ 25°C: -40° to 150°C [-40° to 302°F] 10k-AN Type 3 @ 25°C: -40° to 150°C [-40° to 302°F] 30 kΩ @ 25°C: -40° to 150°C [-40° to 302°F] 30 kΩ @ 25°C: -40° to 150°C [-40° to 302°F] RTD Excitation Current RTD 10, 100, 120, 200: RTD 1000: 250µA 1mA RTD 1000: 250µA Thermistor Excitation Current NTC 2.252k, NTC 3k: NTC 5k, NTC 10k: 5µA 10µA RTD/Thermistor Linearization Automatic		Platinum RTD 0.00385 European Curve: -200° to 850°C [-328° to 1562°F] 120Ω Ni N120 Nickel RTD 0.00672 Curve:				
RTD Excitation Current RTD 500: RTD 1000: 500μA 250μA Thermistor Excitation Current NTC 2.252k, NTC 3k: NTC 5k, NTC 10k: 10μA 5μA NTC 30k: RTD/Thermistor Linearization Automatic	Thermistor Input Ranges	2.252 kΩ @ 25°C: -40° to 150°C [-40° to 302°F] 3 kΩ @ 25°C: -40° to 150°C [-40° to 302°F] 5 kΩ @ 25°C: -40° to 150°C [-40° to 302°F] 10k-AN Type 3 @ 25°C: -40° to 150°C [-40° to 302°F]				
Thermistor Excitation Current NTC 5k, NTC 10k: 5μA NTC 30k: 1μA RTD/Thermistor Linearization Automatic	RTD Excitation Current	RTD 500: 500µA				
	Thermistor Excitation Current	NTC 5k, NTC 10k: 5µA				
Maximum Inaccuracy ±0.2°C	RTD/Thermistor Linearization	Automatic				
	Maximum Inaccuracy	±0.2°C				

Module General Specifications Weight 98g [3.5 oz] Heat Dissipation 3.6 W 2.5 W **Backplane Power Consumption** Agency Approvals UL 61010-2 File E185989, Canada and USA Software Version Required Do-more! Designer 2.7 or later

IMPORTANT!



1-800-633-0405 **BX-4UT4TR** Universal Temp. Input/ Relay Output

Voltage Relay Output Specifications					
	<u>BX-4UT4TR</u>				
Outputs per Module	4				
Commons	1				
Maximum Current per Common	8A				
Nominal Voltage	5-48VDC, 24-240VAC				
Operating Voltage Range	5-60VDC, 18-264VAC				
Peak Voltage	60VDC, 264VAC				
Minimum Output Current	0.1 mA @ 24VDC				
Maximum Output Current	2A				
Maximum Inrush Current	5A for 50ms				
Maximum Leakage Current	1µA				
ON Voltage Drop	0.2 V maximum				
Fuses, Overcurrent Protection	N/A				
OFF-ON Response	<10ms				
ON-OFF Response	<10ms				
Relay Cycle Life Mechanical Endurance Electrical Endurance	5 Million Operations 120,000 Operations				
Status Indicators	Logic Side, Green				

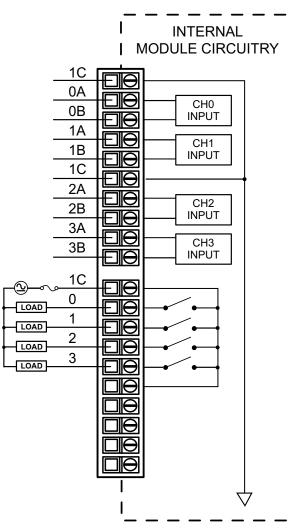
Data Range Specifications						
		Resolution				
Thermocouple Selection	Temperature Range	WXn	RXn			
Туре Ј	−210 to 1200 °C −346 to 2192 °F					
Туре К	−265 to 1372 °C −445 to 2502 °F					
Type E	−265 to 1000 °C −445 to 1832 °F					
Type R	−50 to 1768 °C −58 to 3214 °F	Degrees x10 (One Implied Decimal) ¹	24-Bit Floating ¹			
Type S	−50 to 1768 °C −58 to 3214 °F					
Туре В	40 to 1820 °C 104 to 3308 °F ³					
Туре Т	−265 to 400 °C −445 to 752 °F					
Voltage Selection	Voltage Range	WXn ²	RXn			
-31.25 to 31.25 mVDC	Bipolar 31.25 mVDC	0.95 µV per count (-32768 to 32767)				
-31.25 to 62.5 mVDC	Bipolar 62.5 mVDC	1.9 µV per count (-16384 to 32767)	User Scaled			
-31.25 to 125 mVDC	Bipolar 125 mVDC	3.8 µV per count (-8192 to 32767)	User Scaled			
0 to 1.0 VDC	Unipolar 1.0 VDC	30.5 µV per count (0 to 32767)				
RTD Selection	Temperature Range	WXn	RXn			
10, 50, 100, 200, 500, 1000Ω Pt Platinum RTD 0.00385 European Curve	−200 to 850 °C −328 to 1562 °F					
120Ω Ni N120 Nickel RTD 0.00672 Curve	−80 to 260 °C −112 to 500 °F	Degrees x10 (One Implied Decimal) ¹	24-Bit Floating ¹			
Thermistor Selection	Temperature Range	WXn	RXn			
Thermistor 2.252 kΩ @25°C						
Thermistor 2.252 kΩ @25°C	-40 to 150 °C	Degrees x10 (One Implied Decimal) ¹	24-Bit Floating ¹			
Thermistor 2.252 kΩ @25°C Thermistor 3kΩ @25°C	−40 to 150 °C −40 to 302 °F	Degrees x10 (One Implied Decimal) ¹	24-Bit Floating ¹			

1. Temperatures reported in rounded integer to WXn and as scaled floating point 24bits resolution to RXn.

Raw Counts = -32768 to 32767.
 Maximum value displayed in WXn is 32767. RXn will display the full range of 3308.0.

1-800-633-0405 **BX-4UT4TR** Universal Temp. Input/ Relay Output

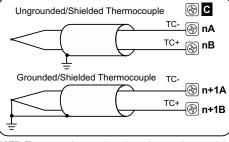
Universal Temperature Input/Relay Output Wiring



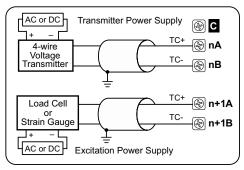
For the latest prices, please check AutomationDirect.com. 1-800-633-0405 **BX-4UT4TR** Universal Temp. Input/ Relay Output

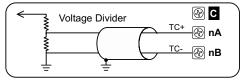
Universal Temperature Input Circuits

Thermocouple and Voltage Sensors



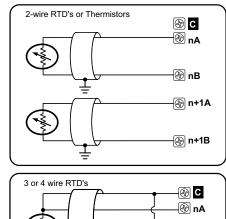
NOTE: Thermocouple extension wire and proper thermocouple terminal blocks must be used to extend thermocouples. AutomationDirect thermocouple wire is recommended.



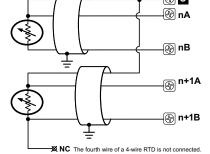


NOTE: Shield should be connected only at one end, to ground at the source device.

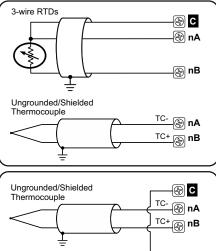
TC+ Ð For maximum accuracy: Jumper unused inputs. TC-Ð

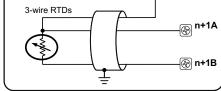


Resistive and Thermistor Sensors



Mixed Resistive and Thermocouple Sensors





Notes for maximum accuracy:

- 1. All wires to an RTD must be equal length and type. Refer to RTD manufacturer's recommendations.
- 2. Do not use cable shield as sensing wire. 3. When applicable, connect shield to
- <u>nA</u> RTD common only, otherwise connect to module common only. Do not connect shield to both ends. n<u>B</u>
- 4. Jumper unused inputs.

BRX - Programmable Controller

tBRX-153

1-800-633-0405 For the lates BRX Analog Expansion Modules

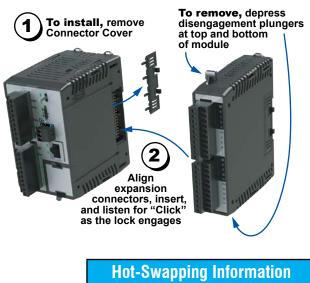
Overview

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

Analog modules are available with current inputs or outputs, unipolar/bipolar voltage inputs or outputs, thermocouple inputs, RTD inputs and thermistor inputs. Input/output combination modules are also available.

With the exception of temperature input modules, 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.



Note: This device cannot be Hot Swapped.

General Specifications

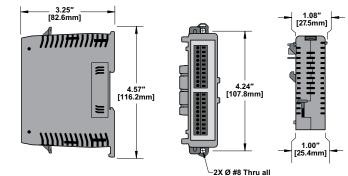
All BRX analog input and output modules and temperature input modules have the same general specifications listed in the table below.

G	General Specifications					
Storage Temperature	-20° to 70°C [-4° to 158°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 (unless otherwise noted on individual module specifications)	UL 61010-1 and UL 61010-2-201 File E139594, Canada and USA CE (EN 61131-2 EMC, EN 61010-1 and EN 61010-2-201 Safety)					

Operating	Operating Temperature Range					
Operating Temperature	0° to 45°C [32° to 113°F]	0° to 60°C [32° to 140°F]				
Module	Module R	evision*				
BX-08AD-1						
BX-08AD-2B	Rev A	Rev B				
<u>BX-04THM</u>	(Prior to May 2018)	(After May 2018)				
BX-08DA-1						
<u>BX-08DA-2B</u>	Rev B (Prior to May 2018)	Rev C (After May 2018)				
All other Analog and Temperature Expansion Module part numbers	N/A	Rev A (After May 2018)				

* Module Revision can be found in the last letter (last or second-to-last character) of the module serial number.

Dimensions



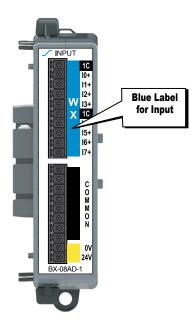


NOTE: When removing an expansion module, make sure there is room for the module to slide away from the system. Failure to do so will result in difficulty removing the module.

BRX Analog Expansion Modules

Analog Input Modules

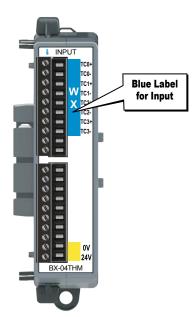
Nine (9) analog input modules are available, with current or voltage inputs. Analog input module faceplates have a blue terminal bar to distinguish them as inputs, with symbols \checkmark or \checkmark to signify current or voltage, respectively.



Analog Input Modules							
Part Number	Points	Points Input Type Resolution					
<u>BX-04ADM-1</u>	4	Current Sink 0–20 mA, 4–20 mA	14-bit	\$182.00			
<u>BX-04AD-1</u>	4			\$230.00			
<u>BX-08AD-1</u>	8	Current Sink 0–20 mA. 4–20 mA	16-bit	\$255.00			
<u>BX-16AD-1</u>	16	0 20 110 (, 4 20 110 (\$363.00			
BX-04AD-2B	4	Voltage		\$230.00			
BX-08AD-2B	8	± 10VDC, ± 5VDC,	16-bit	\$255.00			
<u>BX-16AD-2B</u>	16	0–5 VDC, 0–10 VDC		\$363.00			
<u>BX-04AD-3</u>	4	Current Sink 0–20mA, 4–20mA	16-bit	\$193.00			
<u>BX-08AD-3</u>	8	Voltage ±10VDC, ±5VDC, 0–5VDC, 0–10VDC	TO-DIL	\$225.00			

Temperature Input Module

Six (6) temperature input modules are available, with thermocouple, RTD, and/or thermistor inputs. The thermocouple input modules can also be configured for millivolt-level voltage inputs, and the RTD input module can also be configured for resistance input. Temperature module faceplates have a blue terminal bar to distinguish them as inputs, and \$ symbol to signify temperature.



Temperature Input Modules						
Part Number Points Input Type F						
BX-04THM	4	Thermocouple	\$241.00			
<u>BX-08THM</u>	8	Thermocouple	\$269.00			
BX-06RTD	6	RTD	\$255.00			
<u>BX-08NTC</u>	8	Thermistor	\$269.00			
<u>BX-04UT</u>	4	Universal Temperature (Thermocouple, RTD, Thermistor supported)	\$223.00			
<u>BX-08UT</u>	6	Universal Temperature (Thermocouple, RTD, Thermistor supported)	\$248.00			

BRX Analog Expansion Modules

Temperature/Analog Combo Module

Three (3) combination modules are available, with thermocouple, RTD or universal temperature inputs and current sourcing outputs. The thermocouple input modules can also be configured for millivolt-level voltage inputs, and the RTD input module can also be configured for resistance input. The Input/Output faceplate terminal bar is in blue and red, making it easy to distinguish between inputs and outputs, and the l and \checkmark symbols signify temperature and current, respectively.

En Te	Temperature Input / Analog Output Combo Modules					
	F	oints	frank Trans	Output Turns		
R0+ Part Number R0-	Input	Output	Input Type	Output Type	Price	
10 R1+ R1- 20	-1 4	4	Resistance Temperature Detector (RTD)	Current Source 0–20mA, 4–20mA	\$472.00	
R2+ R2- 3C	-1 4	4	Thermocouple	Current Source 0–20mA, 4–20mA	\$472.00	
R3- R3- 4C	<u> </u>	4	Universal Temperature	Current Source: 0–20mA, 4–20mA Voltage:±10VDC, ±5VDC, 0–5VDC, 0–10VDC	\$436.00	



12+

13+

 S
 5C

 0V
 0V

 24V

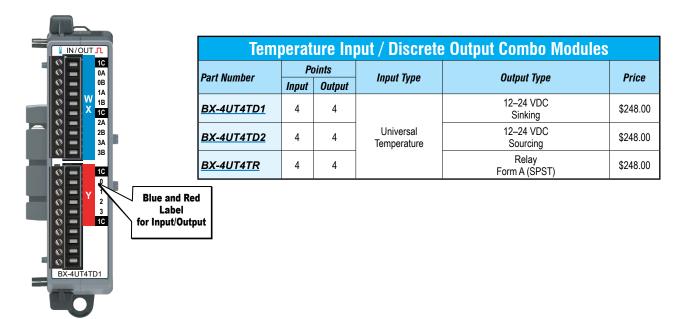
 BX-4RTD4DA-1

Blue and Red

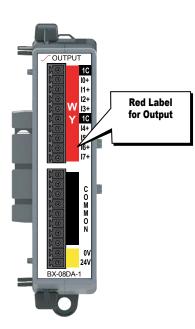
Label

for Input/Output

Three (3) combination modules are available with universal temperature inputs and DC sinking, sourcing or relay outputs. The thermocouple inputs can also be configured for millivolt-level voltage inputs, and the RTD inputs can also be configured for resistance input. The Input/Output faceplate terminal bar is in blue and red, making it easy to distinguish between inputs and outputs, and the $\$ and Π symbols signify temperature and discrete signals, respectively.



1-800-633-0405 For the lates BRX Analog Expansion Modules



Analog Output Modules

Six (6) analog output modules are available, in current and voltage outputs. Analog output module faceplates have a red terminal bar to distinguish them as outputs, with symbols \checkmark or \checkmark to signify current or voltage, respectively.

Analog Output Modules						
Part Number	Points	Output Type	Price			
<u>BX-04DA-1</u>	4	Current Source	\$269.00			
BX-08DA-1	8	0–20 mA, 4–20 mA	\$350.00			
BX-04DA-2B	4	Voltage	\$269.00			
<u>BX-08DA-2B</u>	8	± 10VDC, ± 5VDC, 0–5 VDC, 0–10 VDC	\$350.00			
<u>BX-04DA-3</u>	4	Current Source 0–20mA, 4–20mA	\$244.00			
<u>BX-08DA-3</u>	8	Voltage ±10VDC, ±5VDC, 0–5VDC, 0–10VDC	\$311.00			

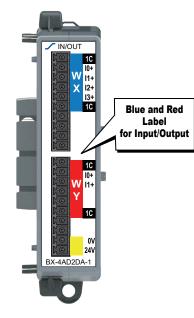
Analog Combo Input / Output Modules

Six (6) analog input/output combo modules are available with current or voltage inputs and outputs. The Input/Output faceplate terminal bar is in blue and red, making it easy to distinguish between inputs and outputs. Symbols \checkmark and \checkmark signify current and voltage, respectively.

Analog Combo Input / Output Modules						
Part Number	Points			Output Tuno	Drico	
Part Number	Input	Output	Input Type	Output Type	Price	
<u>BX-2AD2DA-1</u>	2	2	Current Sink	Current Source	\$309.00	
BX-4AD2DA-1	4	2	0–20mA, 4–20mA	0–20mA, 4–20mA	\$378.00	
BX-2AD2DA-2B	2	2	Voltage	Voltage	\$309.00	
BX-4AD2DA-2B	4	2	±10VDC, ±5VDC, 0–5VDC, 0–10VDC	±10VDC, ±5VDC, 0–5VDC, 0–10VDC	\$378.00	
<u>BX-2AD2DA-3</u>	2	2	Current Source 0–20mA, 4–20mA	Current Source 0–20mA, 4–20mA	\$284.00	
BX-4AD4DA-3	4	4	Voltage ±10VDC, ±5VDC, 0–5VDC, 0–10VDC	Voltage ±10VDC, ±5VDC, 0–5VDC, 0–10VDC	\$349.00	

Expansion Module Support by Controller				
Controller Type	# Expansion Modules			
BX-DM1E-M	8			
BX-DM1-10	8			
BX-DM1E-10	8			
BX-DM1-18	8			
BX-DM1E-18	8			
BX-DM1-36	8			
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	<u>BX-RTB05</u> BX-RTB08	<u>BX-RTB05-1</u> BX-RTB08-1	<u>BX-RTB05-2</u> BX-RTB08-2				
Price (Single Block)	\$9.00	\$7.50	\$8.50				
Price (Kit)	\$16.00	\$15.00	\$16.00				
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 Specifications 16-Point Type			
Part Number	<u>BX-RTB10</u>	<u>BX-RTB10-1</u>	BX-RTB10-2
Price (Kit)	\$22.50	\$25.00	\$23.50
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: <u>BX-RTB10</u> terminal blocks are included with Temperature Input 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)