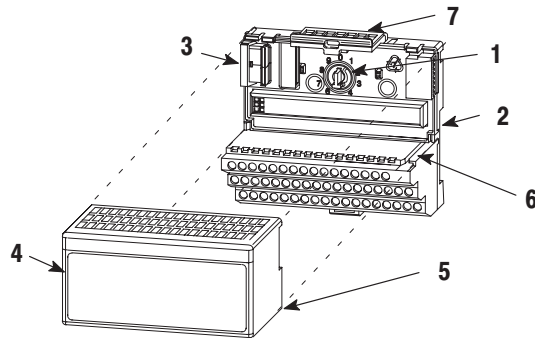




## Installation Instructions

### 24V dc FLEX I/O Thermocouple/RTD Input Module (Cat. No. 1794-IRT8)



#### Module Installation

This module mounts on a 1794 terminal base unit.

1. Rotate keyswitch (1) on terminal base unit (2) clockwise to position 3 as required for this type of module.
2. Make certain the flexbus connector (3) is pushed all the way to the left to connect with the neighboring terminal base/adaptor. **You cannot install the module unless the connector is fully extended.**
3. Make sure that the pins on the bottom of the module are straight so they will align properly with the connector in the terminal base unit.

#### WARNING



If you remove or insert the module while the backplane power is on, an electrical arc can occur. This could cause an explosion in hazardous location installations. Be sure that power is removed or the area is nonhazardous before proceeding.

4. Position the module (4) with its alignment bar (5) aligned with the groove (6) on the terminal base.
5. Press firmly and evenly to seat the module in the terminal base unit. The module is seated when the latching mechanism (7) is locked into the module.

### Important User Information

Because of the variety of uses for the products described in this publication, those responsible for the application and use of these products must satisfy themselves that all necessary steps have been taken to assure that each application and use meets all performance and safety requirements, including any applicable laws, regulations, codes and standards. In no event will Allen–Bradley be responsible or liable for indirect or consequential damage resulting from the use or application of these products.

Any illustrations, charts, sample programs, and layout examples shown in this publication are intended solely for purposes of example. Since there are many variables and requirements associated with any particular installation, Allen–Bradley does not assume responsibility or liability (to include intellectual property liability) for actual use based upon the examples shown in this publication.

Allen–Bradley publication SGI–1.1, Safety Guidelines for Application, Installation, and Maintenance of Solid–State Control (available from your local Allen–Bradley office), describes some important differences between solid–state equipment and electromechanical devices that should be taken into consideration when applying products such as those described in this publication.

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Throughout this publication, notes may be used to make you aware of safety considerations. The following annotations and their accompanying statements help you to identify a potential hazard, avoid a potential hazard, and recognize the consequences of a potential hazard.

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**WARNING**

Identifies information about practices or circumstances that can cause an explosion in a hazardous environment, which may lead to personal injury or death, property damage, or economic loss.

---

**ATTENTION**

Identifies information about practices or circumstances that can lead to personal injury or death, property damage, or economic loss.

---

**IMPORTANT**

Identifies information that is critical for successful application and understanding of the product.

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**ATTENTION**



**Environment and Enclosure**

This equipment is intended for use in a Pollution Degree 2 industrial environment, in overvoltage Category II applications (as defined in IEC publication 60664-1), at altitudes up to 2000 meters without derating.

This equipment is considered Group 1, Class A industrial equipment according to IEC/CISPR Publication 11. Without appropriate precautions, there may be potential difficulties ensuring electromagnetic compatibility in other environments due to conducted as well as radiated disturbance.

This equipment is supplied as “open type” equipment. It must be mounted within an enclosure that is suitably designed for those specific environmental conditions that will be present, and appropriately designed to prevent personal injury resulting from accessibility to live parts. The interior of the enclosure must be accessible only by the use of a tool. Subsequent sections of this publication may contain additional information regarding specific enclosure type ratings that are required to comply with certain product safety certifications.

See NEMA Standards publication 250 and IEC publication 60529, as applicable, for explanations of the degrees of protection provided by different types of enclosures. Also, see the appropriate sections in this publication, as well as the Allen-Bradley publication 1770-4.1, (“Industrial Automation Wiring and Grounding Guidelines”), for additional installation requirements pertaining to this equipment.

**ATTENTION**



FLEX I/O is grounded through the DIN rail to chassis ground. Use zinc plated, yellow chromated steel DIN rail to assure proper grounding. Using other DIN rail materials (e.g. aluminum, plastic, etc.) which can corrode, oxidize or are poor conductors can result in improper or intermittent platform grounding.

**ATTENTION**



**Preventing Electrostatic Discharge**

This equipment is sensitive to electrostatic discharge, which can cause internal damage and affect normal operation. Follow these guidelines when you handle this equipment:

- Touch a grounded object to discharge potential static.
- Wear an approved grounding wriststrap.
- Do not touch connectors or pins on component boards.
- Do not touch circuit components inside the equipment.
- If available, use a static-safe workstation.
- When not in use, keep modules in appropriate static-safe packaging.

**ATTENTION**



Remove field-side power before removing or inserting this module. This module is designed so you can **remove and insert it under backplane power**. When you remove or insert a module with field-side power applied, an electrical arc may occur. An electrical arc can cause personal injury or property damage by:

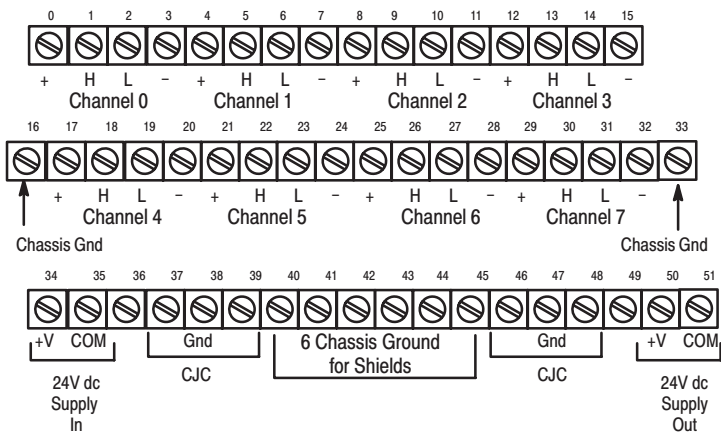
- sending an erroneous signal to your system's field devices causing unintended machine motion
- causing an explosion in a hazardous environment

Repeated electrical arcing causes excessive wear to contacts on both the module and its mating connector. Worn contacts may create electrical resistance.


**Connecting Wiring to a 1794-TB3G or 1794-TB3GS Terminal Base**

Connect wiring to the terminal base as shown below.


**Connections for terminal Base 1794-TB3G shown**




**ATTENTION** To reduce susceptibility to noise, power analog modules and digital modules from separate power supplies. Do not exceed a length of 33 ft (10m) for dc power cabling.



**ATTENTION** Do not daisy chain power or ground from this terminal base unit to any ac or dc digital module terminal base units.

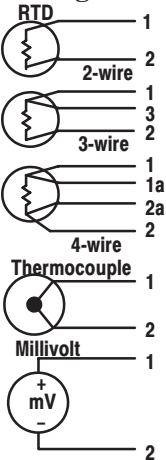


**ATTENTION** Total current draw through the terminal base unit is limited to 10A. Separate power connections to the terminal base unit may be necessary.



Refer to the tables on page 6 and 7 for complete wiring connections for various input devices.

**Wiring Connections for the Thermocouple/RTD Module**



Type of Input	Connect the following:				
	H	L	+	-	Shield <sup>1</sup>
RTD – 2-wire			1	2	
RTD – 3-wire		3	1	2	
RTD – 4-wire	1a	2a	1	2	
Thermocouple		1		2	
Millivolt		1		2	

<sup>1</sup> Terminals 37, 38 and 39 and 46, 47 and 48 are for cold junction compensation (with 38 and 47 chassis GND).

Input	CJC Sensor			
	+	Chassis Ground	-	CJC Tail <sup>1</sup>
CJC1	37	38	39	5 (22)
CJC2	46	47	48	12 (29)

<sup>1</sup> Use pins 5 and 12 when channels 0-7 are configured as thermocouples. Use pins 12 and 29 when only channels 4-7 are configured as thermocouples.

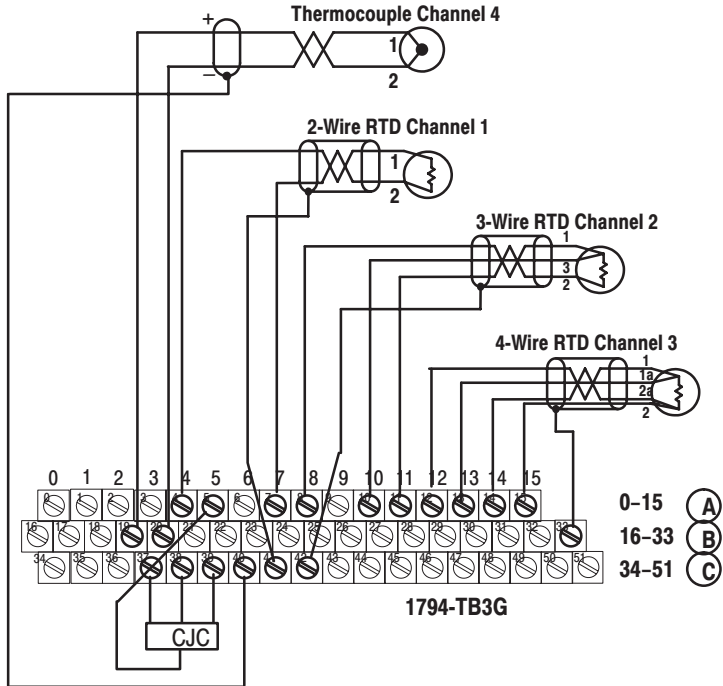
RTD or Thermocouple Channel	1794-TB3G and -TB3GS Terminal Base Units			
	High Signal Terminal (H)	Low Signal Terminal (L)	RTD Source Current (+)	Signal Return <sup>1</sup> (-)
0	1	2	0	3
1	5	6	4	7
2	9	10	8	11
3	13	14	12	15
4	18	19	17	20
5	22	23	21	24
6	26	27	25	28
7	30	31	29	32
+24V dc Power	34 and 50			
24V dc Common	35 and 51			

1 Terminals 37, 38 and 39 and 46, 47 and 48 are for cold junction compensation (with 38 and 47 chassis GND).

2 Terminals 16, 33 and 40 thru 45 are chassis ground.

3 Connect tail of CJC1 to terminal 5 and CJC2 to 12 if channels 0-3 or 0-7 are thermocouples. Connect tail of CJC1 to terminal 22 and CJC2 to 29 **ONLY** if channels 4-7 are thermocouples.

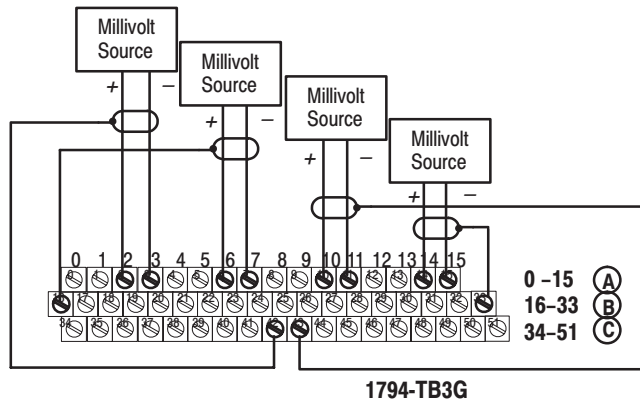
**Example of 2-, 3- and 4-wire RTD and Thermocouple Wiring to a 1794-TB3G Terminal Base Unit**



**Attention:** Keep exposed area of inner conductor as short as possible.

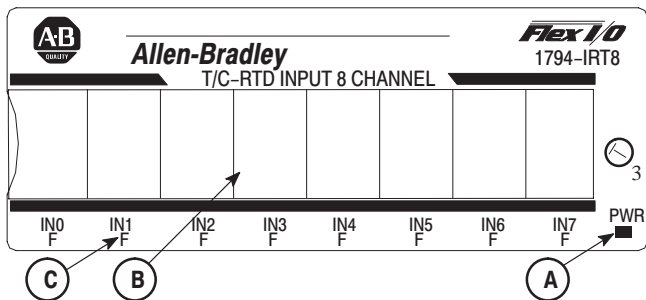


**Example of Millivolt Wiring to a 1794-TB3G Terminal Base Unit**



**Attention:** Keep exposed area of inner conductor as short as possible.

**Indicators**



- A** = Power indicator – indicates power applied to module.
- B** = Insertable label for writing individual I/O assignments.
- C** = Status indicators for individual channels.

**Block Transfer Read and Write**

The following block transfer read and write word bit information is presented for experienced users only. Refer to the user manual (publication 1794-6.5.12) for this product for complete information on programming and configuring your module.

**Input Mapping**

Bit ⇒	15	14	13	12	11	10	09	08	07	06	05	04	03	02	01	00
Word ↓	Read															
0	Channel 0 Input Data															
1	Channel 1 Input Data															
2	Channel 2 Input Data															
3	Channel 3 Input Data															
4	Channel 4 Input Data															
5	Channel 5 Input Data															
6	Channel 6 Input Data															
7	Channel 7 Input Data															
8	Overrange Alarm Bits (channel 0 = bit 08, etc)								Underrange Alarm Bits (channel 0 = bit 00, etc)							
9	Ch 7 Flt	Ch 6 Flt	Ch 5 Flt	Ch 4 Flt	Ch 3 Flt	Ch 2 Flt	Ch 1 Flt	Ch 0 Flt		C/JC 2 Alm	C/JC 1 Alm					Diagnostic Status
10	EDT command response								EDT response data							

**Output Mapping**

Bit⇒	15	14	13	12	11	10	09	08	07	06	05	04	03	02	01	00
Word↓	Write															
0									Data Format	Flt Mode Ch 4-7	Flt Mode Ch 0-3	Reference Jct.				Filter Cutoff
1	TC/RTD Ch. 4-7		Sensor Mode Ch. 4-7		Sensor Type Ch. 4-7			TC/RTD Ch. 0-3			Sensor Mode Ch. 0-3		Sensor Type Ch. 0-3			
2	RTD Offset Ch 7		RTD Offset Ch 6		RTD Offset Ch 5	RTD Offset Ch 4		RTD Offset Ch 3			RTD Offset Ch 2		RTD Offset Ch 1	RTD Offset Ch 0		
3	EDT command								EDT command data							

**Data Format for All Channels - Write Word 0**

Bit	11	10	09	08	Data type for channels 0-7
	0	0	0	0	°C (implied decimal point XXXX.X)
	0	0	0	1	°F (implied decimal point XXXX.X)
	0	0	1	0	°K (implied decimal point XXXX.X)
	0	0	1	1	-32767 to +32767
	0	1	0	0	0 to 65535

0101 through 1111 not used

Module defaults to -4000 to 10,000 in millivolt mode, and 0 to 5000 in ohms mode with implied decimal points (i.e. -40.00mV, 0.01Ω) whenever °C, °F or °K, is selected.

**Fault Mode - Write Word 0**

Bit	06	Fault enable for channels 0-3
	07	Fault enable for channels 4-7
		0 = disabled 1 = enable wire-off detection

**“Add-on” Filter Selections - Write Word 0**

Bit	02	01	00	Filter Time Constants - Actual filtering depends on the module's mode of operation.
	0	0	0	Hardware filtering only (default filtering)
	0	0	1	25ms
	0	1	0	100ms
	0	1	1	250ms
	1	0	0	500ms
	1	0	1	1s
	1	1	0	2s
	1	1	1	5s

**Reference Junction Selection – Write Word 0**

Bits 03–05	<b>Reference Junction</b> – used when sensor select is set to thermocouple and sensor mode is set to internal compensation. Sets a fixed reference junction to compensate all thermocouple channels.				
	Bit	05	04	03	<b>Reference Junction</b>
		0	0	0	0°C
		0	0	1	20°C
		0	1	0	25°C
		0	1	1	30°C
		1	0	0	40°C
		1	0	1	50°C
		1	1	0	60°C
		1	1	1	70°C

**Sensor Mode Select – Write Word 1**

Bit	05	04	Sensor mode for channels 0 through 3
Bit	13	12	Sensor mode for channels 4 through 7
<b>Thermocouple</b>			
	0	0	External compensation – uses cold junction sensors ( <b>Both CJC sensors must be used when external compensation is selected.</b> )
	0	1	Internal compensation – uses the value selected for “reference junction selection”
	1	0	No compensation (Data is referenced to 0°C.)
	1	1	Differential measurement between 2 channels (0–1, 2–3, 4–5, 6–7)
<b>RTD</b>			
	0	0	2-wire RTD no compensation
	0	1	2-wire RTD with user selected compensation
	1	0	3-wire RTD
	1	1	4-wire RTD

**Input Type Selection - Write Word 1**

Bit	07	06	Input type for channels 0-3
Bit	15	14	Input type for channels 4-7
	0	0	Thermocouple
	0	1	RTD
	1	0	Not used
	1	1	Not used

**RTD Offset Select - Write Word 2**


Bit	01	00	RTD Offset Select Bits - Channel 0
Bit	03	02	RTD Offset Select Bits - Channel 1
Bit	05	04	RTD Offset Select Bits - Channel 2
Bit	07	06	RTD Offset Select Bits - Channel 3
Bit	09	08	RTD Offset Select Bits - Channel 4
Bit	11	10	RTD Offset Select Bits - Channel 5
Bit	13	12	RTD Offset Select Bits - Channel 6
Bit	15	14	RTD Offset Select Bits - Channel 7
	0	0	Use channel loop compensation value stored during calibration procedure for 2-wire RTD (Default = 0Ω) - 15Ω maximum (Note: Functional up to RTD = 484 ohms maximum with total lead resistance = 15Ω)
	0	1	5Ω (total lead resistance)
	1	0	10Ω (total lead resistance)
	1	1	15Ω (total lead resistance)

**Sensor Type Select - Write Word 1**

RTD Type					
Bit	03	02	01	00	Sensor type for channels 0 through 3
Bit	11	10	09	08	Sensor type for channels 4 through 7
	0	0	0	0	Resistance (Default = mV)
	0	0	0	1	100 ohm Pt $\alpha = 0.00385$ Euro (-200 to +870°C)
	0	0	1	0	200 ohm Pt $\alpha = 0.00385$ Euro (-200 to +400°C)
	0	0	1	1	100 ohm Pt $\alpha = 0.003916$ U.S. (-200 to +630°C)
	0	1	0	0	100 ohm Pt $\alpha = 0.003916$ U.S. (-200 to +400°C)
	0	1	0	1	100 ohm Nickel (-60 to +250°C)
	0	1	1	0	200 ohm Nickel (-60 to +200°C)
	0	1	1	1	120 ohm Nickel (-80 to +320°C)
	1	0	0	0	10 ohm Copper (-200 to +260°C)
1001 through 1111 not used					
Thermocouple Type					
Bit	03	02	01	00	Sensor type for channels 0 through 3
Bit	11	10	09	08	Sensor type for channels 4 through 7
	0	0	0	0	mV (default)
	0	0	0	1	B      300 to 1800°C      (572 to 3272°F)
	0	0	1	0	E      -270 to 1000°C      (-454 to 1832°F)
	0	0	1	1	J      -210 to 1200°C      (-346 to 2192°F)
	0	1	0	0	K      -270 to 1372°C      (-454 to 2502°F)
	0	1	0	1	TXK/XK(L)-200 to 800°C      (-328 to 1472°F)
	0	1	1	0	N      -270 to 1300°C      (-450 to 2372°F)
	0	1	1	1	R      -50 to 1768°C      (-58 to 3214°F)
	1	0	0	0	S      -50 to 1768°C      (-58 to 3214°F)
	1	0	0	1	T      -270 to 400°C      (-454 to 752°F)
1010 through 1111 not used					


**The following information applies when operating this equipment in hazardous locations:**

Products marked "CL I, DIV 2, GP A, B, C, D" are suitable for use in Class I Division 2 Groups A, B, C, and D Hazardous Locations and nonhazardous locations only. Each product is supplied with markings on the rating nameplate indicating the hazardous location temperature code. When combining products within a system, the most adverse temperature code (lowest "T" number) may be used to help determine the overall temperature code of the system. Combinations of equipment in your system are subject to investigation by the local Authority Having Jurisdiction at the time of installation.

<b>WARNING</b> 	<b>EXPLOSION HAZARD -</b> <ul style="list-style-type: none"><li>• Do not disconnect equipment unless power has been removed or the area is known to be nonhazardous.</li><li>• Do not disconnect connections to this equipment unless power has been removed or the area is known to be nonhazardous. Secure any external connections that mate to this equipment by using screws, sliding latches, threaded connectors, or other means provided with this product.</li><li>• Substitution of components may impair suitability for Class I, Division 2.</li><li>• If this product contains batteries, they must only be changed in an area known to be nonhazardous.</li></ul>
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Informations sur l'utilisation de cet équipement en environnements dangereux:

Les produits marqués CL I, DIV 2, GP A, B, C, D ne conviennent que une utilisation en environnements de Classe I Division 2 Groupes A, B, C, D dangereux et non dangereux. Chaque produit est livré avec des marquages sur sa plaque d'identification qui indiquent le code de température pour les environnements dangereux. Lorsque plusieurs produits sont combinés dans un système, le code de température le plus défavorable (code de température le plus faible) peut être utilisé pour déterminer le code de température global du système. Les combinaisons d'équipements dans le système sont sujettes à inspection par les autorités locales qualifiées au moment de l'installation.

<b>AVERTISSEMENT</b> 	<b>RISQUE D'EXPLOSION -</b> <ul style="list-style-type: none"><li>• Couper le courant ou s'assurer que l'environnement est classé non dangereux avant de débrancher l'équipement.</li><li>• Couper le courant ou s'assurer que l'environnement est classé non dangereux avant de débrancher les connecteurs. Fixer tous les connecteurs externes reliés à cet équipement à l'aide de vis, loquets coulissants, connecteurs filetés ou autres moyens fournis avec ce produit.</li><li>• La substitution de composants peut rendre cet équipement inadapté à une utilisation en environnement de Classe 1, Division 2.</li><li>• S'assurer que l'environnement est classé non dangereux avant de changer les piles.</li></ul>
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<b>Specifications - 1794-IRT8 RTD/Thermocouple Input Module</b>			
Number of Inputs	8 Channels (2 groups of 4)		
Module Location	Cat. No. 1794-TB3G, -TB3GS Terminal Base Unit		
Nominal Input Voltage Ranges	-40 to +100mV dc for thermocouples 0 to 325mV dc for RTDs		
Supported Thermocouple Types	Type	Range °C	Range °F
	B:	300 to 1800°C	(572 to 3272°F)
	E:	-270 to 1000°C	(-454 to 1832°F)
	J:	-210 to 1200°C	(-346 to 2192°F)
	K:	-270 to 1372°C	(-454 to 2502°F)
	TXK/XK(L)	-200 to 800°C	(-328 to 1472°F)
	N:	-270 to 1300°C	(-454 to 2372°F)
	R:	-50 to 1768°C	(-58 to 3214°F)
	S:	-50 to 1768°C	(-58 to 3214°F)
	T:	-270 to 400°C	(-454 to 752°F)
Supported RTD Types	Resistance: 100 ohm Pt $\alpha = 0.00385$ Euro (-200 to +870°C) 200 ohm Pt $\alpha = 0.00385$ Euro (-200 to +400°C) 100 ohm Pt $\alpha = 0.003916$ U.S. (-200 to +630°C) 200 ohm Pt $\alpha = 0.003916$ U.S. (-200 to +400°C) 100 ohm Nickel $\alpha = 0.00618$ (-60 to +250°C) 200 ohm Nickel $\alpha = 0.00618$ (-60 to +200°C) 120 ohm Nickel $\alpha = 0.00672$ (-80 to +320°C) 10 ohm Copper $\alpha = 0.00427$ (-200 to +260°C)		
Resolution	14 bits		
Accuracy vs. filter Cutoff	0.05% of full range in millivolt mode with filtering selected Hardware only = 0.10% of full range in millivolt mode		
Data Format	°C (implied decimal point XXX.X) °F (implied decimal point XXX.X) °K (implied decimal point XXX.X) -32767 to +32767 0-65535 0-5000 (ohms mode) (implied decimal point XXX.X) -4000 to +10000 (millivolt mode) (implied decimal point XXX.XX)		
Common Mode Rejection	-80db @ 5V peak-to-peak 50-60Hz		
Common Mode Input Range	±4V minimum		
Isolation Voltage	1500V ac (rms) or 2550V dc for 1.0s between customer and system		

**Specifications continued on next page.**

**Specifications - 1794-IRT8 RTD/Thermocouple Input Module**

System Throughput (8 channels scanned) - add 0.5ms if filtering is selected	Typical module timing is shown here. For maximum throughput, short circuit all unused channels. 7.4ms - millivolt 8.0ms - ohms - 2-wire RTD 10.0ms - ohms - 3-wire RTD 10.4ms - ohms - 4-wire RTD 8.4ms - 2-wire RTD (°F) 10.4ms - 4-wire RTD (°F) 8.8ms - 2-wire RTD (°C), (°K) 10.8ms - 4-wire RTD (°C), (°K) 9.8ms - 3-wire RTD (°F) 10.0ms - 3-wire RTD (°C), (°K) 9.0ms - Thermocouples (°F) 9.4ms - Thermocouples (°C), (°K)
Open Circuit Detection	Defaults to maximum value
Open Input Detection Time	0 to 3.8s for revision D or earlier Immediate detection (maximum 1 scan) for revision E or later
Overvoltage Capability	7V dc continuous @ 25°C
RFI Immunity	Error of less than 1% of range at 10V/M 27 to 1000MHz
Overall Drift with Temperature	150ppm/°C of span (maximum)
Cold Junction Compensation range	0 to 70°C for firmware revision D or earlier -20 to 100°C for firmware revision E or later
Cold Junction Compensator	A-B Cat. No. 1794-CJC2
Indicators	1 green power status indicator
Flexbus Current	40mA
Power Dissipation	3W maximum @ 31.2V dc
Thermal Dissipation	Maximum 10.2 BTU/hr @ 31.2V dc
Keyswitch Position	3
External dc Power Supply Voltage Voltage Range Supply Current	24V dc nominal 19.2 to 31.2V dc (includes 5% ac ripple) 85mA @ 24V dc

**Specifications continued on next page.**

**Specifications - 1794-IRT8 RTD/Thermocouple Input Module****General Specifications**

Dimensions Inches (Millimeters)	1.8H x 3.7W x 2.1D (45.7 x 94.0 x 53.3)
Environmental Conditions	
Operating Temperature	IEC 60068-2-1 (Test Ad, Operating Cold) IEC 60068-2-2 (Test Bd, Operating Dry Heat) IEC 60068-2-14 (Test Nb, Operating Thermal Shock) 32 to 131°F (0 to 55°C)
Storage Temperature	IEC 60068-2-1 (Test Ab, Unpackaged, Nonoperating Cold) IEC 60068-2-2 (Test Bb, Unpackaged, Nonoperating Dry Heat) IEC 60068-2-14 (Test Na, Unpackaged, Nonoperating Thermal Shock) -40 to 185°F (-40 to 85°C)
Relative Humidity	IEC 60068-2-30 (Test Db, Unpackaged, Nonoperating Damp Heat) 5 to 95%, noncondensing
Shock Operating Nonoperating	IEC 60068-2-27 (Test Ea, Unpackaged Shock) 30g 50g
Vibration	IEC 60068-2-6 (Test Fc, Operating) 5g @ 10-500Hz
ESD Immunity	IEC 61000-4-2 4kV contact discharges 8kV air discharges
Radiated RF Immunity	IEC 61000-4-3 10V/m with 1kHz sine-wave 80% AM from 27MHz to 1000MHz 10V/m with 200Hz 50% Pulse 100%AM at 900MHz
EFT/B Immunity	IEC 61000-4-4 ±2kV @ 5kHz on signal ports
Surge Transient Immunity	IEC 61000-4-5 ±1kV line-line (DM) and ±2kV line-earth (CM) on signal ports
Conducted RF Immunity	IEC 61000-4-6 10V rms with 1kHz sine wave 80% AM from 150kHz to 80MHz
Emissions	CISPR 11 Group 1, Class A (with appropriate enclosure)

**Specifications – 1794-IRT8 RTD/Thermocouple Input Module**

Specifications continued on next page.

Enclosure Type Rating	None (open-style)
Conductors Thermocouple Millivolt Category	Use appropriate shielded thermocouple wire <sup>1</sup> Belden 8761 2 <sup>2</sup>
Power Conductors Wire Size Category	12 gauge (4mm <sup>2</sup> ) maximum stranded copper wire rated at 75°C or greater 3/64 inch (1.2mm) insulation maximum 2 <sup>2</sup>
Agency Certification (when product is marked)	<ul style="list-style-type: none"> <li>UL UL Listed Industrial Control Equipment</li> <li>UL UL Listed for Class I, Division 2 Group A, B, C and D Hazardous Locations</li> <li>CSA CSA Certified Process Control Equipment for Class I, Division 2 Group A, B, C, D Hazardous Locations</li> <li>EEx<sup>3</sup> European Union 94/9/EEC ATEX Directive, compliant with EN 50021; Potentially Explosive Atmospheres, Protection “n”</li> <li>CE<sup>3</sup> European Union 89/336/EEC EMC Directive, compliant with: EN 50081-2, Industrial Emissions EN 50082-2, Industrial Immunity EN 61326, Meas./Control/Lab., Industrial Requirements EN 61000-6-2, Industrial Immunity</li> <li>C-Tick<sup>3</sup> Australian Radiocommunications Act, compliant with AS/NZS 2064, Industrial Emissions</li> </ul>
User Manual	Publication 1794-UM012

1 Refer to thermocouple manufacturer for proper thermocouple extension.  
 2 Use this conductor category information for planning conductor routing. Refer to publication 1770-4.1, “Industrial Automation Wiring and Grounding Guidelines.”  
 3 See the Product Certification link at [www.ab.com](http://www.ab.com) for Declarations of Conformity, Certificates and other certification details

### European Zone 2 Certification

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This equipment is intended for use in potentially explosive atmospheres as defined by European Union Directive 94/9/EC.

The LCIE (Laboratoire Central des Industries Electriques) certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of Category 3 equipment intended for use in potentially explosive atmospheres, given in Annex II to this Directive. The examination and test results are recorded in confidential report No. 28 682 010.

Compliance with the Essential Health and Safety Requirements has been assured by compliance with EN 50021 (1999).

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### **IMPORTANT**

Observe the following additional Zone 2 certification requirements:

- This equipment is not resistant to sunlight or other sources of UV radiation.
  - The secondary of a current transformer shall not be open-circuited when applied in Class I, Zone 2 environments.
  - Equipment of lesser Enclosure Type Rating must be installed in an enclosure providing at least IP54 protection when applied in Class I, Zone 2 environments.
  - This equipment shall be used within its specified ratings defined by Allen-Bradley.
  - Provision shall be made to prevent the rated voltage from being exceeded by transient disturbances of more than 40% when applied in Class I, Zone 2 environments.
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### User Manuals

Thank you for purchasing this product. This product has a user manual associated with it. If you would like a manual, you can:

- download a free electronic version from the internet:  
[www.ab.com/manuals](http://www.ab.com/manuals) or  
[www.theautomationbookstore.com](http://www.theautomationbookstore.com)
- purchase a printed manual by:
  - contacting your local distributor or Rockwell Automation representative,
  - visiting [www.theautomationbookstore.com](http://www.theautomationbookstore.com) and placing your order
  - calling 1.800.963.9548 (USA/Canada) or 001.330.725.1574 (Outside USA/Canada)

The publication number of the user manual for your product is listed under “Specifications” in this installation instruction.





With major offices worldwide. 

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