

POINT I/O Cold Junction Compensation Wiring Base Assembly

Catalog Number 1734-TBCJC

Topic	Page
Important User Information	2
Environment and Enclosure	3
Prevent Electrostatic Discharge	4
Special Conditions for Safe Use	4
Electrical Safety Considerations	5
Before You Begin	5
Install the Wiring Base	6
Install the Removable Terminal Block	6
Remove a Mounting Base	8
Specifications	9

Important User Information

Solid-state equipment has operational characteristics differing from those of electromechanical equipment. Safety Guidelines for the Application, Installation and Maintenance of Solid-state Controls (Publication [SGL-1.1](#) available from your local Rockwell Automation sales office or online at <http://www.rockwellautomation.com/literature/>) describes some important differences between solid-state equipment and hard-wired electromechanical devices. Because of this difference, and also because of the wide variety of uses for solid-state equipment, all persons responsible for applying this equipment must satisfy themselves that each intended application of this equipment is acceptable.

In no event will Rockwell Automation, Inc. be responsible or liable for indirect or consequential damages resulting from the use or application of this equipment.

The examples and diagrams in this manual are included solely for illustrative purposes. Because of the many variables and requirements that are associated with any particular installation, Rockwell Automation, Inc. cannot assume responsibility or liability for actual use based on the examples and diagrams.

No patent liability is assumed by Rockwell Automation, Inc. with respect to use of information, circuits, equipment, or software described in this manual.

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Throughout this manual, when necessary, we use notes to make you aware of safety considerations.



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. Attentions help you identify a hazard, avoid a hazard and recognize the consequences.



SHOCK HAZARD: Labels may be on or inside the equipment (for example, drive or motor) to alert people that dangerous voltage may be present.



BURN HAZARD: Labels may be on or inside the equipment (for example, drive or motor) to alert people that surfaces may reach dangerous temperatures.

IMPORTANT

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

Environment and Enclosure



ATTENTION: This equipment is intended for use in a Pollution Degree 2 industrial environment, in overvoltage Category II applications (as defined in EN/IEC 60664-1), at altitudes up to 2000 m (6562 ft) without derating.

This equipment is not intended for use in residential environments and may not provide adequate protection to radio communication services in such environments.

This equipment is supplied as open-type equipment for indoor use. 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 enclosure must have suitable flame-retardant properties to prevent or minimize the spread of flame, complying with a flame spread rating of 5V A or be approved for the application if nonmetallic. The interior of the enclosure must be accessible only by the use of a tool. Subsequent sections of this publication may contain more information regarding specific enclosure type ratings that are required to comply with certain product safety certifications.

In addition to this publication, see the following:

- Industrial Automation Wiring and Grounding Guidelines, publication [1770-4.1](#), for additional installation requirements.
- NEMA Standard 250 and EN/IEC 60529, as applicable, for explanations of the degrees of protection provided by enclosures.



ATTENTION: Read this document and the documents listed in the Additional Resources section about installation, configuration, and operation of this equipment before you install, configure, operate, or maintain this product. Users are required to familiarize themselves with installation and wiring instructions in addition to requirements of all applicable codes, laws, and standards.

Installation, adjustments, putting into service, use, assembly, disassembly, and maintenance are required to be carried out by suitably trained personnel in accordance with applicable code of practice. In case of malfunction or damage, no attempts at repair should be made. The module should be returned to the manufacturer for repair. Do not dismantle the module.

Prevent Electrostatic Discharge



ATTENTION: 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.
 - Use a static-safe workstation, if available.
 - Store the equipment in appropriate static-safe packaging when not in use.
-

Special Conditions for Safe Use



ATTENTION:

- This product is grounded through the DIN rail to chassis ground. Use zinc plated chromate-passivated steel DIN rail to assure proper grounding. The use of other DIN rail materials (for example, aluminum or plastic) that can corrode, oxidize, or are poor conductors, can result in improper or intermittent grounding. Secure DIN rail to mounting surface approximately every 200 mm (7.8 in.) and use end-anchors appropriately. Be sure to ground the DIN rail properly. Refer to Industrial Automation Wiring and Grounding Guidelines, publication [1770-4.1](#), for more information.
 - Do not remove or replace an Adapter Module while power is applied. Interruption of the backplane can result in unintentional operation or machine motion.
 - Do not discard the end cap. Use this end cap to cover the exposed interconnections on the last mounting base on the DIN rail. Failure to do so could result in equipment damage or injury from electric shock.
 - If this equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.
-



At the end of its life, this equipment should be collected separately from any unsorted municipal waste.

Electrical Safety Considerations



ATTENTION:

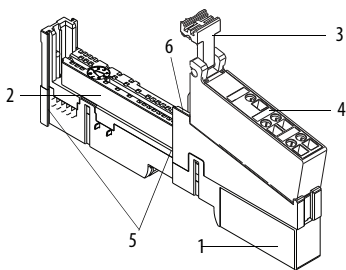
- This equipment is certified for use only within the surrounding air temperature range of $-20 \dots +55 \text{ }^\circ\text{C}$ ($-4 \dots +131 \text{ }^\circ\text{F}$). The equipment must not be used outside of this range.
- Use only a soft dry anti-static cloth to wipe down equipment. Do not use any cleaning agents.

Before You Begin

The wiring base consists of a base (1) and a removable terminal block (Catalog Number 1734-RTBCJC) (4). The 1734-TBCJC wiring base uses screw-clamp termination.

Use this diagram to identify the external features of the module.

POINT I/O™ Cold Junction Compensation Wiring Base Assembly



			3
		Shield	
4	0 +	0 -	5
6	1 +	1 -	7

For use with 1734-IT2I Thermocouple Input Module

	Description		Description
1	Wiring base	4	Removable Wiring Block (RTB)
2	Mechanical keying (orange)	5	Interlocking side pieces
3	RTB removal handle	6	DIN rail locking screw (orange)

Install the Wiring Base

1. Position the wiring base vertically above the installed units (adapter, power supply, or existing module).
2. Slide the wiring base down allowing the interlocking side pieces to engage the adjacent module or adapter.
3. Press firmly to seat the mounting base on the DIN rail. The mounting base snaps into place.
4. To remove the wiring base from the DIN rail, remove the module, and use a small bladed screwdriver to rotate the base locking screw to a vertical position. This releases the locking mechanism. Then lift straight up to remove.

Install the Removable Terminal Block

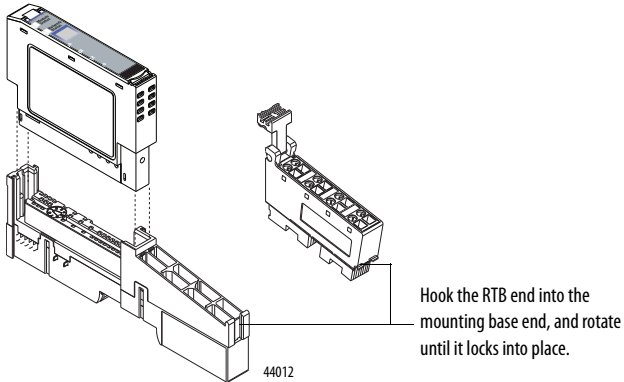
A Removable Terminal Block (RTB) is supplied with your wiring base assembly. To remove, pull up on the RTB handle. This allows the mounting base to be removed and replaced as necessary without removing any of the wirings. To reinsert the Removable Terminal Block, proceed as follows.



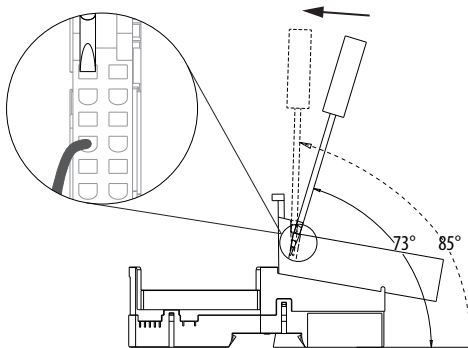
WARNING: When you connect or disconnect the Removable Terminal Block (RTB) with field-side power applied, an electrical arc can occur. This can cause an explosion in hazardous location installations.
Be sure that power is removed or the area is nonhazardous before proceeding.

1. Insert the end opposite the handle into the base unit.
This end has a curved section that engages with the wiring base.
2. Rotate the terminal block into the wiring base until it locks itself in place.

3. If an I/O module is installed, snap the RTB handle into place on the module.

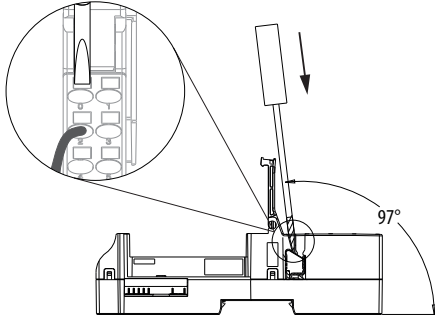


WARNING: For 1734-RTBS and 1734-RTB3S, to latch and unlatch the wire, insert a bladed screwdriver (catalog number 1492-N90 – 3 mm diameter blade) into the opening at approximately 73° (blade surface is parallel with top surface of the opening) and push up gently.





WARNING: For 1734-TOPS and 1734-TOP3S, to latch and unlatch the wire, insert a bladed screwdriver (catalog number 1492-N90 – 3 mm diameter) into the opening at approximately 97° (blade surface is parallel with top surface of the opening) and press in (do not push up or down).



Remove a Mounting Base

To remove a wiring base, you must remove any module installed in the base and any installed module to the right of the base. Remove the removable terminal block (if wired).

1. Snap open the RTB removal handle, or remove the removable terminal block.
2. Squeeze the module locking mechanism and pull up to remove the module(s).
3. Turn the wiring base locking screw to a vertical position to unlock the base from the DIN rail.
4. Slide the wiring base up to release it from its mating units.

Refer to the user manual for keying information, specifications, and information on how to configure your module.

Specifications

General Specifications

Attribute	Value
Terminal base screw torque	0.5...0.6 N·m (5...7 lb-in.)
Supply voltage	28.8V DC, 120/240V AC
Supply current	10 A maximum
Dimensions, approx., HxWxD	65 x 12 x 133.4 mm (2.56 x 0.472 x 5.25 in.)
Wire category ⁽¹⁾	2 - on signal ports
Wire size	0.25...2.5 mm ² (24...14 AWG) thermocouple wire 1.2 mm (3/64 in.) insulation maximum
Mass	97.5 g (3.44 oz)

- (1) Use this Conductor Category information for planning conductor routing as described in the appropriate System Level Installation Manual. Also refer to Industrial Automation Wiring and Grounding Guidelines, publication [1770-4.1](#), for more information.

Environmental Specifications

Attribute	Value
Temperature, operating	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): -20...+55 °C (-4...+131 °F)
Temperature, surrounding air, max.	55 °C (131 °F)
Temperature, nonoperating	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...+85 °C (-40...+185 °F)
Relative humidity	IEC 60068-2-30 (Test Db, unpackaged damp heat): 5...95% noncondensing
Vibration	IEC 60068-2-6 (Test Fc, operating): 5 g @ 10...500Hz
Shock, operating	IEC 60068-2-27 (Test Ea, unpackaged shock): 30 g

Environmental Specifications

Attribute	Value
Shock, nonoperating	IEC 60068-2-27 (Test Ea, unpackaged shock): 50 g
Emissions	IEC 61000-6-4
ESD immunity	IEC 61000-4-2: 6 kV contact discharges 8 kV air discharges
Radiated RF immunity	IEC 61000-4-3: 10V/m with 1 kHz sine-wave 80% AM from 80...2000 MHz 10V/m with 200 Hz 50% pulse 100% AM @ 900 MHz 10V/m with 200 Hz 50% pulse 100% AM @ 1890 MHz 10V/m with 1 kHz sine-wave 80% AM from 2000...2700 MHz
EFT/B Immunity	IEC 61000-4-4: ± 2 kV at 5 kHz on power ports ± 2 kV at 5 kHz on signal ports
Surge transient immunity	IEC 61000-4-5: ± 1 kV line-line (DM) and ± 2 kV line-earth (CM) on signal ports
Conducted RF immunity	IEC 61000-4-6: 10V rms with 1 kHz sine-wave 80% AM from 150 kHz . . . 80 MHz
Enclosure type rating	None (open-style)

Certifications

Certification (When Product Is Marked) ⁽¹⁾	Value
c-UL-us	Terminal blocks – Component UL recognized. See UL File E195367.
CE	European Union 2014/30/EU EMC Directive, compliant with: <ul style="list-style-type: none"> • EN 61326-1; Measurement/Control/Laboratory use, Industrial requirements • EN 61000-6-2; Industrial Immunity • EN 61000-6-4; Industrial Emissions • EN 61131-2; Programmable Controllers (Clause 8, Zone A & B) European Union 2011/65/EU RoHS, compliant with: <ul style="list-style-type: none"> • EN 50581; Technical documentation European Union 2014/35/EU LVD, compliant with: <ul style="list-style-type: none"> • EN 61131-2; Programmable Controllers (Clause 11)
RCM	Australian Radiocommunications Act, compliant with: <ul style="list-style-type: none"> • AS/NZS CISPR 11; Industrial Emissions
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with: <ul style="list-style-type: none"> • Article 58-2 of Radio Waves Act, Clause 3
EAC	<ul style="list-style-type: none"> • Russian Customs Union TR CU 020/2011 EMC Technical Regulation • Russian Customs Union TR CU 004/2011 LV Technical Regulation

(1) See the Product Certification link at <http://www.rockwellautomation.com/global/certification/overview.page> for Declaration of Conformity, Certificates, and other certification details.

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Rockwell Automation Support

Use the following resources to access support information.

Technical Support Center	Knowledgebase Articles, How-to Videos, FAQs, Chat, User Forums, and Product Notification Updates.	www.rockwellautomation.com/knowledgebase
Local Technical Support Phone Numbers	Locate the phone number for your country.	www.rockwellautomation.com/global/support/get-support-now.page
Direct Dial Codes	Find the Direct Dial Code for your product. Use the code to route your call directly to a technical support engineer.	www.rockwellautomation.com/global/support/direct-dial.page
Literature Library	Installation Instructions, Manuals, Brochures, and Technical Data.	www.rockwellautomation.com/literature
Product Compatibility and Download Center (PCDC)	Get help determining how products interact, check features and capabilities, and find associated firmware.	www.rockwellautomation.com/global/support/pcdc.page

Documentation Feedback

Your comments will help us serve your documentation needs better. If you have any suggestions on how to improve this document, complete the How Are We Doing? form at http://literature.rockwellautomation.com/idc/groups/literature/documents/du/ra-du002_-en-e.pdf.

Rockwell Automation maintains current product environmental information on its website at <http://www.rockwellautomation.com/rockwellautomation/about-us/sustainability-ethics/product-environmental-compliance.page>.

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