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Allen-Bradley 1734-IE2C POINT IO 2 Current and 2 Voltage Input Analog Modules Instruction Manual

Contents

Allen-Bradley 1734-IE2C POINT IO 2 Current and 2 Voltage Input Analog Modules

Product Information

- The POINT I/O 2 Current and 2 Voltage Input Analog Modules are a series of modules designed for installation in industrial settings.
- They come in various catalog numbers, including 1734-IE2C, 1734-IE2CK, 1734-IE2V, and 1734-IE2VK. The series C modules are conformal coated for added protection.
- These modules provide current and voltage input analog capabilities, allowing for precise monitoring and control of electrical signals. They are equipped with removable terminal blocks for easy installation and maintenance.
- The product is compliant with the CE Low Voltage Directive (LVD) and must be powered from a source compliant with Safety Extra Low Voltage (SELV) or Protected Extra Low Voltage (PELV) to ensure safety.
- The user manual provides detailed instructions on installation, configuration, wiring, and communication with the module. It also includes information on interpreting status indicators and specifications.

Product Usage Instructions

1. **Before You Begin:**
   - Read the user manual and any additional resources listed for installation, configuration, and operation instructions.
   - Familiarize yourself with the installation requirements and applicable laws, codes, and standards.
2. **Install the Mounting Base:**
   - Follow the instructions provided to properly install the mounting base for the module.

3. **Install the I/O Module:**
   - Refer to the user manual for step-by-step instructions on installing the I/O module onto the mounting base.
4. **Install the Removable Terminal Block:**
   - Follow the provided instructions to install the removable terminal block for easy wiring and maintenance.
5. **Remove a Mounting Base:**
   - If needed, refer to the user manual for guidance on removing a mounting base.
6. **Wire the Module:**
   - Follow the wiring instructions provided to properly connect the module to the electrical system.
7. **Communicate with Your Module:**
   - Refer to the user manual for information on how to communicate with the module for monitoring and control purposes.
8. **Interpret Status Indicators:**
   - Learn how to interpret the status indicators on the module by referring to the user manual.

Note: For additional details, specifications, and safety information, please refer to the user manual provided with the product.

Installation Instructions

Original Instructions

- POINT I/O 2 Current and 2 Voltage Input Analog Modules
- Catalog Numbers 1734-IE2C, 1734-IE2CK, 1734-IE2V, 1734-IE2VK, series C
- Catalog numbers with the suffix 'K' are conformal coated and their specifications are the same as non-conformal coated catalogs.

Summary of Changes

- This publication contains the following new or updated information. This list includes substantive updates only and is not intended to reflect all changes.
- **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.
- Activities including 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. If this equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.
- **ATTENTION:** To comply with the CE Low Voltage Directive (LVD), this equipment must be powered from a source compliant with the Safety Extra Low Voltage (SELV) or Protected Extra Low Voltage (PELV).

WARNING:

- Secure any external connections that mate to this equipment by using screws, sliding latches, threaded connectors, or other means provided with this product.
- Do not disconnect equipment unless power has been removed or the area is known to be nonhazardous.

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 help prevent personal injury resulting from accessibility to live parts. The enclosure must have suitable flame-retardant properties to help prevent or minimize the spread of flame, complying with a flame spread rating of 5VA 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.

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.

North American Hazardous Location Approval

- 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, 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.

WARNING: Explosion Hazard

- Do not disconnect equipment unless power has been removed or the area is known to be nonhazardous.
- 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.
- Substitution of components may impair suitability for Class I Division 2.

UK and European Hazardous Location Approval

The following applies to products marked II 3 G:

- Are intended for use in potentially explosive atmospheres as defined by UKEX regulation 2016 No. 1107 and European Union Directive 2014/34/EU and has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of Category 3 equipment that is intended for use in Zone 2 potentially explosive atmospheres, given in Schedule 1 of UKEX and Annex II of this Directive.
- Compliance with the Essential Health and Safety Requirements has been assured by compliance with EN IEC 60079-7 and EN IEC 60079-0.
- Are Equipment Group II, Equipment Category 3, and comply with the Essential Health and Safety Requirements relating to the design and construction of such equipment given in Schedule 1 of UKEX and Annex II of EU Directive 2014/34/EU. See the UKEx and EU Declaration of Conformity at rok.auto/certifications for details.
- The type of protection is Ex ec IIC T4 Gc according to EN IEC 60079-0:2018, EXPLOSIVE ATMOSPHERES – PART 0: EQUIPMENT – GENERAL REQUIREMENTS, Issue Date 07/2018, and CENELEC ENIEC 60079-7:2015+A1:2018, Explosive atmospheres. Equipment protection by increased safety "e".
- Comply with Standard EN IEC 60079-0:2018, EXPLOSIVE ATMOSPHERES – PART 0: EQUIPMENT – GENERAL REQUIREMENTS, Issue Date 07/2018, CENELEC EN IEC 60079-7:2015+A1:2018 Explosive atmospheres. Equipment protection by increased safety "e", reference certificate number DEMKO 04 ATEX 0330347X and UL22UKEX2478X.
- Are intended for use in areas in which explosive atmospheres caused by gases, vapors, mists, or air are unlikely to occur, or are likely to occur only infrequently and for short periods. Such locations correspond to Zone 2 classification according to UKEX regulation 2016 No. 1107 and ATEX directive 2014/34/EU.
- May have catalog numbers followed by a "K" to indicate a conformal coating option.

IEC Hazardous Location Approval

- The following applies to products marked with IECEx certification:
- Are intended for use in areas in which explosive atmospheres caused by gases, vapors, mists, or air are unlikely to occur, or are likely to occur only infrequently and for short periods. Such locations correspond to Zone 2 classification to IEC 60079-0.
- The type of protection is Ex eC IIC T4 Gc according to IEC 60079-0 and IEC 60079-7.

- Comply with Standards IEC 60079-0, Explosive atmospheres – Part 0: Equipment – General requirements, Edition 7, Revision Date 2017 and IEC 60079-7, 5.1 Edition revision date 2017, Explosive atmospheres – Part 7: Equipment protection by increased safety "e", reference IECEx certificate number IECEx UL 20.0072X.
- May have catalog numbers followed by a "K" to indicate a conformal coating option.

WARNING: Special Conditions for Safe Use

- This equipment is not resistant to sunlight or other sources of UV radiation.
- This equipment shall be mounted in an UKEX/ATEX/IECEx Zone 2 certified enclosure with a minimum ingress protection rating of at least IP54 (in accordance with EN/IEC 60079-0) and used in an environment of not more than Pollution Degree 2 (as defined in EN/IEC 60664-1) when applied in Zone 2 environments. The enclosure must be accessible only by the use of a tool.
- This equipment shall be used within its specified ratings that are defined by Rockwell Automation.
- Transient protection shall be provided that is set at a level not exceeding 140% of the peak rated voltage at the supply terminals to the equipment.
- The instructions in the user manual shall be observed.
- This equipment must be used only with UKEX/ATEX/IECEx certified Rockwell Automation backplanes.
- Earthing is accomplished through mounting of modules on rail.
- Devices shall be used in an environment of not more than Pollution Degree 2.
- The secondary of a current transformer shall not be open-circuited when applied in Class I, Zone 2 environments.

ATTENTION:

- If this equipment is used in a manner that is not specified by the manufacturer, the protection that is provided by the equipment may be impaired.
- Read this document and the documents that are 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.
- This equipment is certified for use only within the surrounding air temperature range of -20…+55 °C (-4…+131 °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

- This Series C of the POINT I/O™ 2 current and 2 voltage input analog modules can be used with the following:
- DeviceNet® and PROFIBUS adapters
- ControlNet® and EtherNet/IP™ adapters, using Studio 5000 Logix Designer® application version 20 or later
- See the figures to familiarize yourself with major parts of the module, noting that the wiring base assembly is

one of the following:

- 1734-TB or 1734-TBS POINT I/O two-piece terminal base, which includes the 1734-RTB or 1734-RTBS removable terminal block, and 1734-MB mounting base
- 1734-TOP or 1734-TOPS POINT I/O one-piece terminal base

POINT I/O Module with 1734-TB or 1734-TBS Base
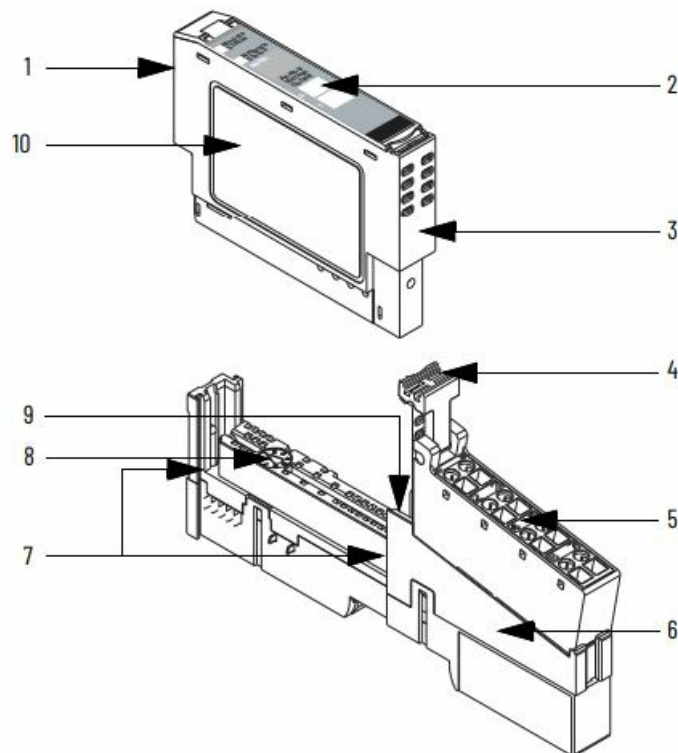
Component Description

	Description		Description
1	Module locking mechanism	6	1734-TB or 1734-TBS mounting base
2	Slide-in writable label	7	Interlocking side pieces
3	Insertable I/O module	8	Mechanical keying (orange)
4	Removable terminal block (RTB) handle	9	DIN rail locking screw (orange)
5	Removable terminal block with screw (1734-RTB) or spring clamp (1734-RTBS)	10	Module wiring diagram

**POINT I/O Module with 1734-TOP or 1734-TOPS Base**
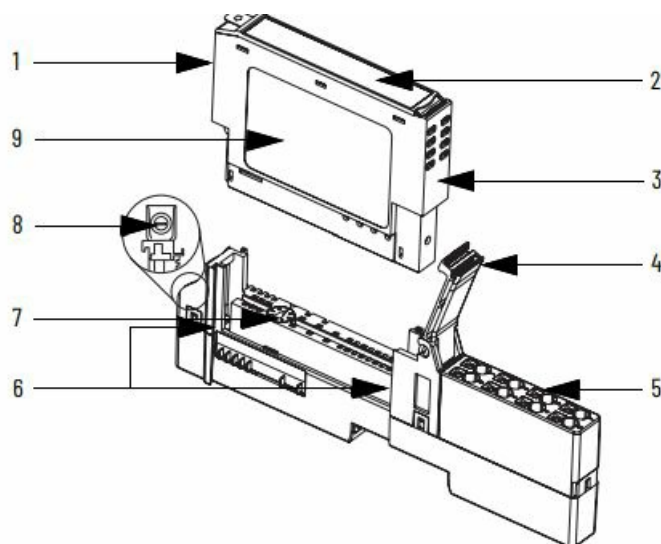
Component Description

	Description		Description
1	Module locking mechanism	6	Interlocking side pieces
2	Slide-in writable label	7	Mechanical keying (orange)
3	Insertable I/O module	8	DIN rail locking screw (orange)
4	Removable terminal block (RTB) handle	9	Module wiring diagram
5	One-piece terminal base with screw (1734-TOP) or spring clamp (1734-TOPS)		

Install the Mounting Base

- To install the mounting base on the DIN rail (Allen-Bradley® part number 199-DR1; 46277-3; EN50022), proceed as follows:
- **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. See Industrial Automation Wiring and Grounding Guidelines, Rockwell Automation publication 1770-4.1, for more information.
- **WARNING:** When used in a Class I, Division 2, hazardous location, this equipment must be mounted in a suitable enclosure with proper wiring method that complies with the governing electrical codes.

1. Position the mounting base vertically above the installed units (adapter, power supply, or existing module).
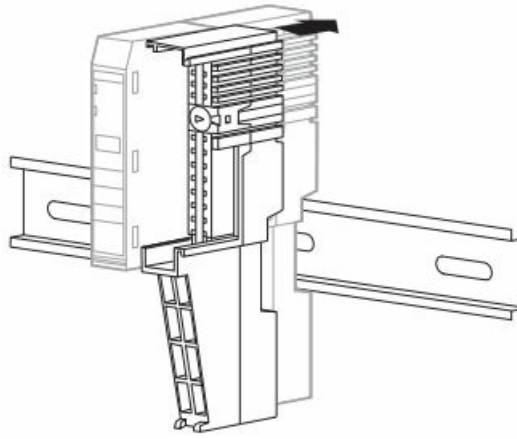
2. Slide the mounting base down allowing the interlocking side pieces to engage the adjacent module or adapter.

3. Press firmly to seat the mounting base on the DIN rail. The mounting base snaps into place.

   - Be sure that the orange DIN rail locking screw is in the horizontal position and that it has engaged the DIN rail.

4. **ATTENTION:** Use the end cap from your adapter or interface module 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.
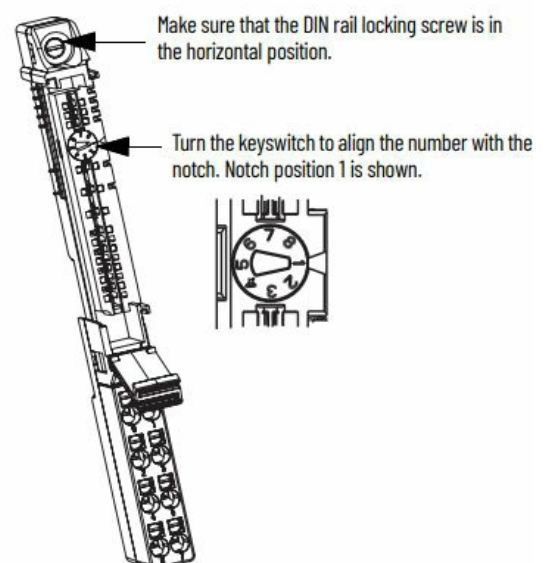
Install the I/O Module

- The module can be installed before or after base installation. Make sure that the mounting base is correctly keyed before installing the module into the mounting base.
- In addition, make sure that the mounting base locking screw is positioned horizontal referenced to the base.
- **WARNING:** When you insert or remove the module while backplane power is on, an electric 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.
- Repeated electrical arcing causes excessive wear to contacts on both the module and its mating connector. Worn contacts may create electrical resistance that can affect module operation.
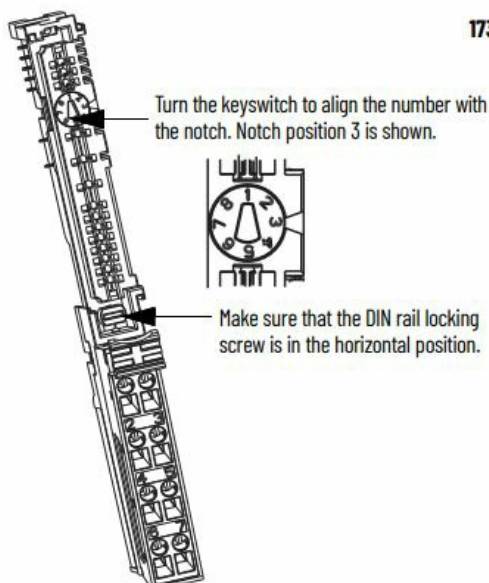

To install the module, proceed as follows

1. Use a bladed screwdriver to rotate the keyswitch on the mounting base clockwise until the number required for

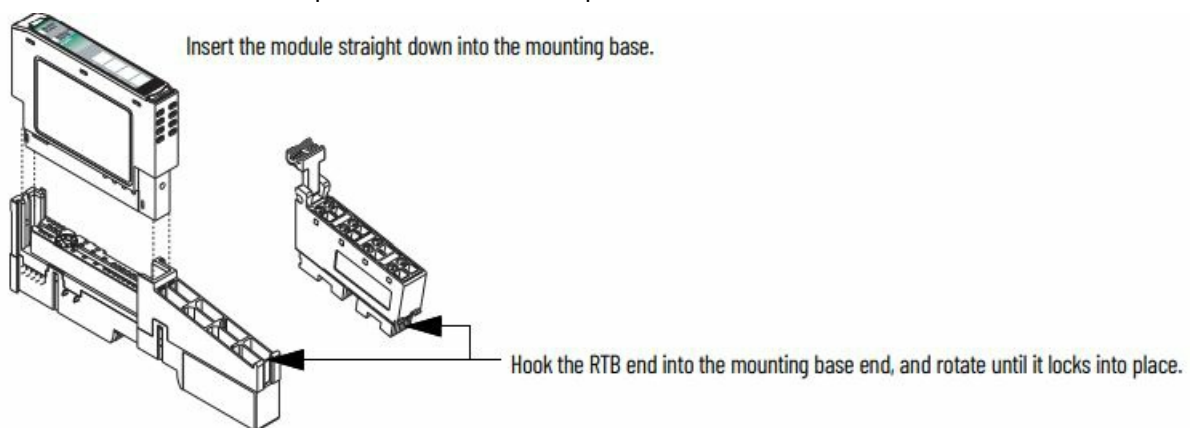the type of module you are installing aligns with the notch in the base.

2. Verify that the DIN rail locking screw is in the horizontal position. You cannot insert the module if the locking mechanism is unlocked.

3. Insert the module straight down into the mounting base and press to secure. The module locks into place.
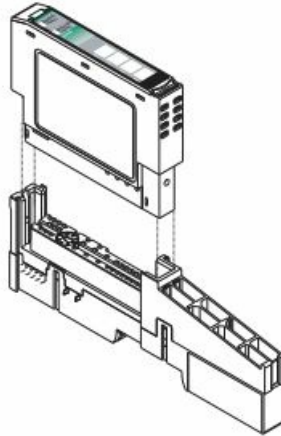

Install the Removable Terminal Block

- An 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 wiring.
- To reinsert the Removable Terminal Block, proceed as follows.
- **WARNING:** When you connect or disconnect the RTB with field-side power applied, an electric 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.

Insert the module straight down into the mounting base.

Hook the RTB end into the mounting base end, and rotate until it locks into place.

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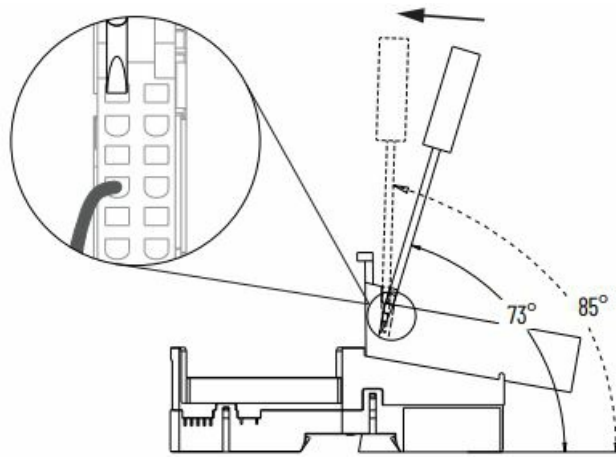
WARNING: For 1734-TOPS and 1734-TOP3S, to latch and unlatch the wire, insert a bladed screwdriver (catalog number 1492-N90 – 3 mm diameter blade) into the opening at approximately 97° (blade surface is parallel with top surface of the opening) and press in (do not push up or down).
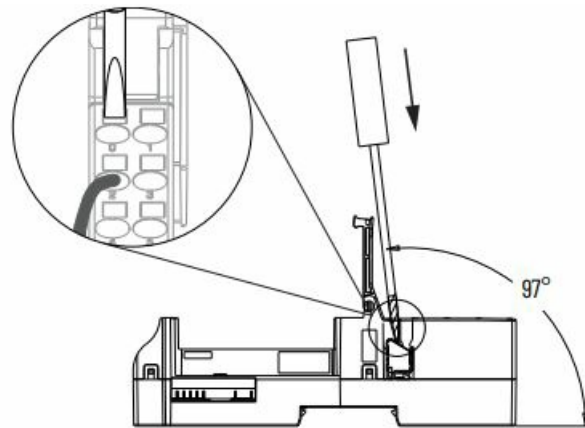
Remove a Mounting Base

- To remove a mounting base, you must remove any installed module and the module installed in the base to the right. Remove the removable terminal block, if wired.
- **WARNING:** When you insert or remove the module while backplane power is on, an electric 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. Repeated electrical arcing causes excessive wear to contacts on both the module and its mating connector.
- Worn contacts may create electrical resistance that can affect module operation.
- **WARNING:** When you connect or disconnect the Removable Terminal Block (RTB) with field side power applied, an electric 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.

1. Unlatch the RTB handle on the I/O module.
2. Pull on the RTB handle to remove the removable terminal block.
3. Press the module lock on the top of the module.
4. Pull on the I/O module to remove from the base.
5. Repeat steps 1, 2, 3, and 4 for the module to the right.
6. Use a small-bladed screwdriver to rotate the orange base locking screw to a vertical position. This releases the locking mechanism.
7. Lift straight up to remove.

Wire the Module

To wire the module, see the diagrams and tables.

WARNING: If you connect or disconnect wiring while the field-side power is on, an electric arc installations. Be sure that power is removed or the area is nonhazardous before proceeding.

POINT I/O 2 Current and 2 Voltage Output Analog Modules
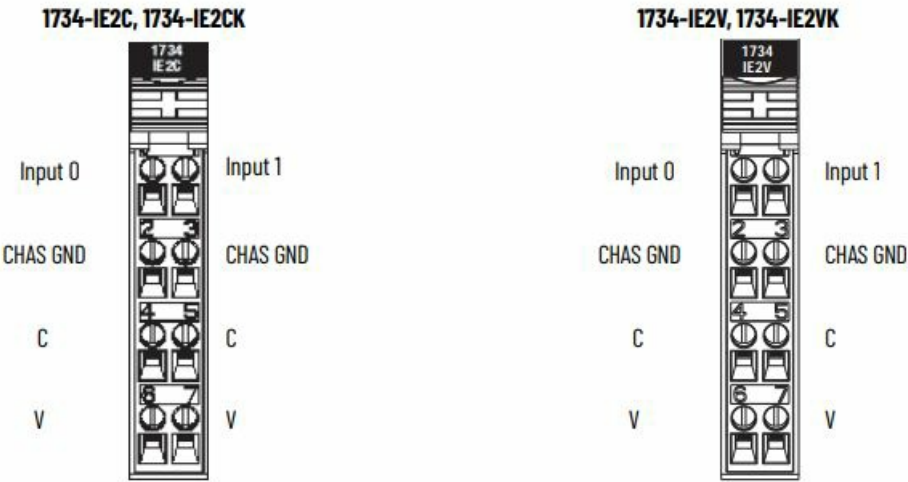
- **CHAS GND =** Chassis ground
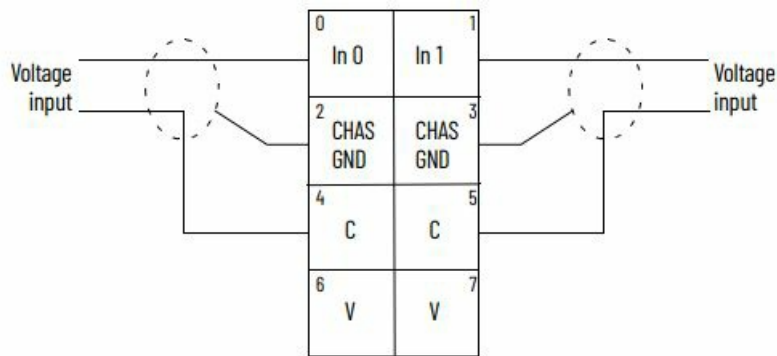- **C =** Common
- **V =** Supply

Figure 1 – POINT I/O 2 Current Input Analog Module Wiring – 1734-IE2C, 1734-IE2CK
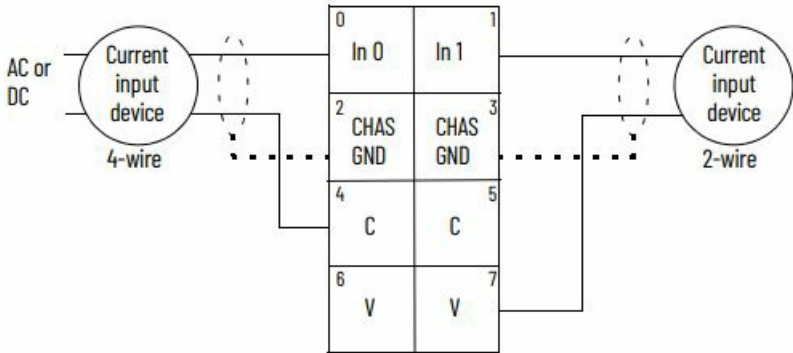
- **In** = Input channel
- **CHAS GND =** Chassis ground
- **C** = Common
- **V** = 12/24V DC supply
- **Note:** Not protected, 0.3 A max

Channel	Current Input	Chassis Ground	Common	Supply
0	0	2	4	6
1	1	3	5	7

Figure 2 – POINT I/O 2 Voltage Input Analog Module Wiring – 1734-IE2V, 1734-IE2VK

- In = Input channel
  - CHAS GND = Chassis ground
- **C =** Common
  - **V =** 12/24V DC supply
- **Note:** Not protected, 0.3 A max

Channel	Voltage Input	Chassis Ground	Common	Supply
0	0	2	4	6
1	1	3	5	7

- 12/24V DC is provided by the internal field power bus.
- **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. See Industrial Automation Wiring and Grounding Guidelines, Rockwell Automation publication 1770-4.1, for more information.

Communicate with Your Module

- POINT I/O modules send (produce) and receive (consume) I/O data (messages). You map this data onto the processor memory. These modules produce 6 bytes of input data (scanner Rx) and fault status data. These modules do not consume I/O data (scanner Tx).

Default Data Map

- **Message size:** 6 Bytes

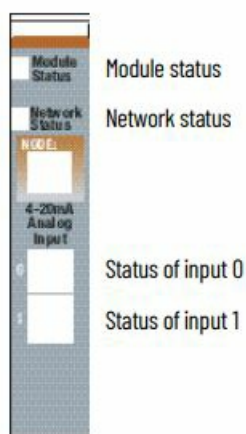|	15	14	13	12	11	10	09	08	07 06	0	05	04	03	02	01	00
Produces (scanner Rx)	Input channel 0 – high byte								Input channel 0 – low byte							
	Input channel 1 – high byte								Input channel 1 – low byte							
	Status byte for channel 1								Status byte for channel 0							
	OR	UR	HHA	LLA	HA	LA	CM	CF	OR	UR	HHA	LLA	HA	LA	CM	CF
Consumes (scanner Tx)	No consumed data															

Where:

- **OR** = Overrange; 0 = No error, 1 = Fault
- **UR** = Underrange; 0 = No error, 1 = Fault
- **HHA** = High/High Alarm; 0 = No error, 1 = Fault
- **LLA** = Low/Low Alarm; 0 = No error, 1 = Fault
- **HA** = High Alarm; 0 = No error, 1 = Fault
- **LA** = Low Alarm; 0 = No error, 1 = Fault
- **CM** = Calibration Mode; 0 = Normal, 1 = Calibration mode
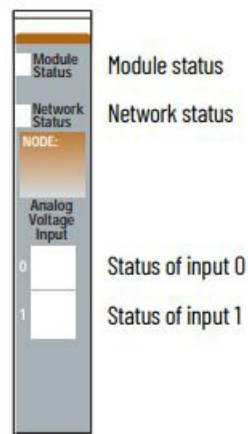- **CF** = Channel Fault Status; 0 = No error, 1 = Fault

Interpret Status Indicators

- The following diagram and table show information on how to interpret the status indicators.

1734-IE2C, 1734-IE2CK

- Module status
- Network status
- 4-20mA Analog Input
- Status of input 0
- Status of input 1

1734-IE2V, 1734-IE2VK

- Module status
- Network status
- Analog Voltage Input
- Status of input 0
- Status of input 1

Indicator Status for Modules

Indicator	Status	Description
Module status	Off	No power is applied to device.
	Green	Device is operating normally.
	Flashing green	Device needs commissioning due to missing, incomplete, or incorrect configuration.
	Flashing red	Recoverable fault is present.
	Red	Unrecoverable fault occurred. Self-test failure present (checksum failure, or ram test failure at cycle power). Firmware fatal error present.
	Flashing red/green	Device is in self-test mode.
Network status	Off	Device is not online: • Device has not completed dup_MAC-id test. • Device is not powered – Check the module status indicator.
	Flashing green	Device is online but has no connections in the established state.
	Green	Device is online and has connections in the established state.
	Flashing red	One or more I/O connections are in timed-out state.
	Red	Critical link failure – Failed communication device. The device has detected an error that prevents it from communicating on the network.
	Flashing red/green	Communication faulted device – The device has detected a network access error and is in communication faulted state. Device has received and accepted an Identity Communication Faulted Request – Long protocol message.

Indicator	Status	Description
Channel status	Off	Module is in CAL mode.
	Solid green	Normal operation is present with channel scanning inputs.
	Flashing green	Channel is being calibrated.
	Solid red	Major channel fault is present.
	Flashing red	Channel is at end of range (0 mA or 21 mA) for 1734-IE2C, 1734-IE2CK. Channel is at end of range (over or under) for 1734-IE2V, 1734-IE2VK.

Specifications

Input Specifications

Attribute	1734-IE2C, 1734-IE2CK	1734-IE2V, 1734-IE2VK
Number of inputs	2 single-ended, non-isolated, current	2 single-ended, non-isolated, voltage
Resolution	16 bits – over 0…21 mA 0.32 µA/cnt	15 bits plus sign 320 µA/cnt in unipolar or bipolar mode
Input current	4…20 mA 0…20 mA	–
Input voltage	–	0…10V user configurable (-0.0V under, +0.5V over) ±10V user configurable (-0.5V under, +0.5V over)
Absolute accuracy(1)	0.1% Full Scale @ 25 °C (77 °F)	
Accuracy drift with temp	30 ppm/°C	5 ppm/°C
Input update rate (per module)	120 ms @ Notch = 50 Hz 100 ms @ Notch = 60 Hz (default) 24 ms @ Notch = 250 Hz 12 ms @ Notch = 500 Hz	
Input step response (per channel)	80 ms @ Notch = 50 Hz 70 ms @ Notch = 60 Hz (default) 16 ms @ Notch = 250 Hz 8 ms @ Notch = 500 Hz	
Digital filter time constant	0…10,000 ms (default = 0 ms)	
Input impedance	60 Ω	100 kΩ
Input resistance	60 Ω	200 kΩ
Conversion type	Delta Sigma	
Common mode rejection ratio	120 dB	
Normal mode rejection ratio	-60 dB	
Notch filter	-3 dB settable at the following: 13.1 Hz @ Notch = 50 Hz 15.7 Hz @ Notch = 60 Hz 65.5 Hz @ Notch = 250 Hz 131 Hz @ Notch = 580 Hz	

Data format	Signed integer
Maximum overload	Fault protected to 28.8V DC
Calibration	Factory calibrated

1. Includes offset, gain, non-linearity, and repeatability error terms.

General Specifications

Attribute	1734-IE2C, 1734-IE2CK	1734-IE2V, 1734-IE2VK
Terminal base	1734-TB, 1734-TBS, 1734-TOP, or 1734-TOPS	
Terminal base screw torque	0.6 N•m (7 lb•in)	
Indicators, logic side	1 green/red – module status 1 green/red – network status 2 green/red – input status	
Keyswitch position	3	
POINTBus™ current, max	75 mA @ 5V DC	
Power dissipation, max	0.6 W @ 28.8V DC	0.75 W @ 28.8V DC
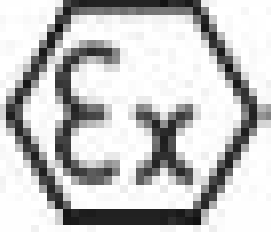
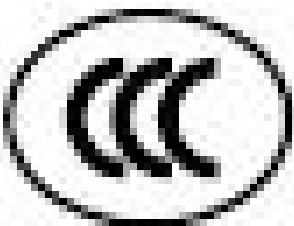| Attribute	1734-IE2C, 1734-IE2CK	1734-IE2V, 1734-IE2VK	
Thermal dissipation, max	2.0 BTU/hr @ 28.8V DC	2.5 BTU/hr @ 28.8V DC	
Isolation voltage	50V continuous No isolation between individual channels Tested to withstand 2550V DC for 60 s	50V continuous No isolation between individual channels Tested to withstand 2200V DC for 60 s	
External DC power			
Supply voltage, nom	24V DC	24V DC	
Voltage range	10…28.8V DC	10…28.8V DC	
Supply current	10 mA @ 24V DC	15 mA @ 24V DC	
Dimensions (HxWxD), approx.	56 x 12 x 75.5 mm (2.21 x 0.47 x 2.97 in.)		
Weight, approx.	33 g (1.16 oz.)		
Wiring category(1) (2)	1 – on signal ports		
Wire size	0.25…2.5 mm2 (22…14 AWG) solid or stranded shielded copper wire rated at 75 °C (167 °F) or greater 1.2 mm (3/64 in.) insulation max		
Enclosure type rating	None (open-style)		
North American temp code	T5	T4A	
UKEX/ATEX temp code	T4		
IECEx temp code	T4		

1. Use this conductor category information for planning conductor routing as described in Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1.
2. Use this Conductor Category information for planning conductor routing as described in the appropriate System Level Installation Manual.

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 °C ≤ Ta ≤ +55 °C (-4 °F ≤ Ta ≤ +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	IEC60068-2-6 (Test Fc, Operating): 5 g @ 10…500 Hz
Shock, operating	EC 60068-2-27 (Test Ea, Unpackaged Shock): 30 g
Shock, nonoperating	EC 60068-2-27 (Test Ea, Unpackaged Shock): 50 g
Emissions	IEC 61000-6-4
ESD immunity	IEC6100-4-2: 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…6000 MHz
EFT/B immunity	IEC 61000-4-4: ±3 kV at 5 kHz on signal ports
Surge transient immunity	IEC 61000-4-5: ±2 kV line-earth (CM) on shielded ports
Conducted RF immunity	IEC61000-4-6: 10V rms with 1 kHz sine-wave 80% AM from 150 kHz…80 MHz

Certifications

Certification (when product is marked)(1)	Value
c-UL-us	UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E65584. UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada. See UL File E194810.
UK and CE	UK Statutory Instrument 2016 No. 1091 and European Union 2014/30/EU EMC Directive, compliant with: 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) UK Statutory Instrument 2016 No. 1101 and European Union 2014/35/EU LVD, compliant with: EN 61131-2; Programmable Controllers (Clause 11) UK Statutory Instrument 2012 No. 3032 and European Union 2011/65/EU RoHS, compliant with: EN IEC 63000; Technical documentation
Ex	UK Statutory Instrument 2016 No. 1107 and European Union 2014/34/EU ATEX Directive, compliant with: EN IEC 60079-0; General Requirements EN IEC 60079-7; Explosive Atmospheres, Protection "e" II 3 G Ex ec IIC T4 Gc DEMKO 04 ATEX 0330347X UL22UKEX2478X
RCM	Australian Radiocommunications Act, compliant with: AS/NZS CISPR11; Industrial Emissions.
IECEx	IECEx System, compliant with IEC 60079-0; General Requirements IEC 60079-7; Explosive Atmospheres, Protection "e" II 3 G Ex ec IIC T4 Gc IECEx UL 20.0072X
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with: Article 58-2 of Radio Waves Act, Clause 3
EAC	Russian Customs Union TR CU 020/2011 EMC Technical Regulation Russian Customs Union TR CU 004/2011 LV Technical Regulation
Morocco	Arrêté ministériel n° 6404-15 du 1 er muharram 1437 Arrêté ministériel n° 6404-15 du 29 ramadan 1436

CCC	
	CNCA-C23-01:2019 CCC Implementation Rule Explosion-Proof Electrical Products, compliant with: GB/T 3836.1-2021 Explosive atmospheres—Part 1:Equipment—General requirements GB/T 3836.3-2021 Explosive atmospheres—Part 3:Equipment protection by increased safety "e" CCC 2020122309111607 (APBC)
UKCA	2016 No. 1091 – Electromagnetic Compatibility Regulations 2016 No. 1101 – Electrical Equipment (Safety) Regulations 2012 No. 3032 – Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations

See the Product Certification link at rok.auto/certifications for Declaration of Conformity, Certificates, and other certification details.

Additional Resources

For more information on the products that are described in this publication, use these resources. You can view or download publications at rok.auto/literature.

Resource	Description
POINT I/O Modules Selection Guide, publication 1734-SG001	Provides POINT I/O adapters and module specifications.
POINT I/O Digital and Analog Modules and POINTBlock I/O Modules User Manual, publication 1734-UM001	Provides a detailed description of module functionality, configuration, and usage for POINT I/O digital and analog modules and POINTBlock I/O modules.
Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1	Provides general guidelines for installing a Rockwell Automation industrial system.
Product Certifications website, rok.auto/certifications	Provides declarations of conformity, certificates, and other certification details.

Rockwell Automation Support

Use these resources to access support information.

Technical Support Center	Find help with how-to videos, FAQs, chat, user forums, Knowledge base, and product notification updates.	**rok.auto/support**
Local Technical Support Phone Numbers	**Locate the telephone number for your country.**	**rok.auto/phonesupport**
Technical Documentation Center	**Quickly access and download technical specifications, installation instructions, and user manuals.**	**rok.auto/techdocs**
Literature Library	**Find installation instructions, manuals, brochures, and technical data publications.**	**rok.auto/literature**
Product Compatibility and Download Center (PCDC)	**Download firmware, associated files (such as AOP, EDS, and DTM), and access product release notes.**	**rok.auto/pcdc**

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Waste Electrical and Electronic Equipment (WEEE)

- At the end of life, this equipment should be collected separately from any unsorted municipal waste.
- Rockwell Automation maintains current product environmental compliance information on its website at **rok.auto/pec**.
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- ASIA PACIFIC: Rockwell Automation SEA Pte Ltd, 2 Corporation Road, #04-05, Main Lobby, Corporation Place, Singapore 618494, Tel: (65) 6510 6608, FAX: (65) 6510 6699
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Documents / Resources

	Allen-Bradley 1734-IE2C POINT IO 2 Current and 2 Voltage Input Analog Modules [pdf] Instruction Manual 1734-IE2C POINT IO 2 Current and 2 Voltage Input Analog Modules, 1734-IE2C, POINT IO 2 Current and 2 Voltage Input Analog Modules, Current and 2 Voltage Input Analog Modules, Input Analog Modules, Analog Modules, Modules

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