



ArmorBlock Dual-port EtherNet/IP 4-point Thermocouple and RTD Input Modules

Catalog Numbers 1732E-IT4IM12R, 1732E-IR4IM12R

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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. Translated versions are not always available for each revision.

Topic	Page
Added grounding tip for installation	5
Corrected I/O connector descriptions	7
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Overview

The EtherNet/IP™ ArmorBlock® is a 24V DC I/O module that communicates via EtherNet/IP. The sealed IP65, IP67 and IP69K housing of these modules requires no additional enclosure. Note that environmental requirements other than IP65, IP67 and IP69K may require an additional appropriate enclosure. I/O connectors are micro, A-coded M12 style.

EtherNet/IP networks use advanced network technology, for example, producer/consumer communication, to increase network functionality and throughput.

To learn more about features, configuration requirements, and calibration process for the 1732E-IT4IM12R and 1732E-IR4IM12R modules, see the 1732E ArmorBlock Dual-Port EtherNet/IP 4-Point Thermocouple and RTD Input Modules User Manual, publication [1732E-UM004](#).



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.

注意: 在安装、配置、操作和维护本产品前，请阅读本文档以及“其他资源”部分列出的有关设备安装、配置和操作的相应文档。除了所有适用规范、法律和标准的相关要求之外，用户还必须熟悉安装和接线说明。

安装、调整、投运、使用、组装、拆卸和维护等各项操作必须由经过适当训练的专业人员按照适用的操作规范实施。

如果未按照制造商指定的方式使用该设备，则可能会损害设备提供的保护。

ATENCIÓN: Antes de instalar, configurar, poner en funcionamiento o realizar el mantenimiento de este producto, lea este documento y los documentos listados en la sección Recursos adicionales acerca de la instalación, configuración y operación de este equipo. Los usuarios deben familiarizarse con las instrucciones de instalación y cableado y con los requisitos de todos los códigos, leyes y estándares vigentes.

El personal debidamente capacitado debe realizar las actividades relacionadas a la instalación, ajustes, puesta en servicio, uso, ensamblaje, desensamblaje y mantenimiento de conformidad con el código de práctica aplicable. Si este equipo se usa de una manera no especificada por el fabricante, la protección provista por el equipo puede resultar afectada.

ATENÇÃO: Leia este e os demais documentos sobre instalação, configuração e operação do equipamento que estão na seção Recursos adicionais antes de instalar, configurar, operar ou manter este produto. Os usuários devem se familiarizar com as instruções de instalação e fiação além das especificações para todos os códigos, leis e normas aplicáveis.

É necessário que as atividades, incluindo instalação, ajustes, colocação em serviço, utilização, montagem, desmontagem e manutenção sejam realizadas por pessoal qualificado e especializado, de acordo com o código de prática aplicável.

Caso este equipamento seja utilizado de maneira não estabelecida pelo fabricante, a proteção fornecida pelo equipamento pode ficar prejudicada.

ВНИМАНИЕ: Перед тем как устанавливать, настраивать, эксплуатировать или обслуживать данное оборудование, прочитайте этот документ и документы, перечисленные в разделе «Дополнительные ресурсы». В этих документах изложены сведения об установке, настройке и эксплуатации данного оборудования. Пользователи обязаны ознакомиться с инструкциями по установке и прокладке соединений, а также с требованиями всех применимых норм, законов и стандартов.

Все действия, включая установку, наладку, ввод в эксплуатацию, использование, сборку, разборку и техническое обслуживание, должны выполняться обученным персоналом в соответствии с применимыми нормами и правилами.

Если оборудование используется не предусмотренным производителем образом, защита оборудования может быть нарушена.

注意: 本製品を設置、構成、稼働または保守する前に、本書および本機器の設置、設定、操作についての参考資料の該当箇所に記載されている文書に目を通してください。ユーザーは、すべての該当する条例、法律、規格の要件に加えて、設置および配線の手順に習熟している必要があります。

設置調整、運転の開始、使用、組立て、解体、保守を含む諸作業は、該当する実施規則に従って訓練を受けた適切な作業員が実行する必要があります。

本機器が製造メーカーにより指定されていない方法で使用されている場合、機器により提供されている保護が損なわれる恐れがあります。

ACHTUNG: Lesen Sie dieses Dokument und die im Abschnitt „Weitere Informationen“ aufgeführten Dokumente, die Informationen zu Installation, Konfiguration und Bedienung dieses Produkts enthalten, bevor Sie dieses Produkt installieren, konfigurieren, bedienen oder warten. Anwender müssen sich neben den Bestimmungen aller anwendbaren Vorschriften, Gesetze und Normen zusätzlich mit den Installations- und Verdrahtungsanweisungen vertraut machen.

Arbeiten im Rahmen der Installation, Anpassung, Inbetriebnahme, Verwendung, Montage, Demontage oder Instandhaltung dürfen nur durch ausreichend geschulte Mitarbeiter und in Übereinstimmung mit den anwendbaren Ausführungsvorschriften vorgenommen werden.

Wenn das Gerät in einer Weise verwendet wird, die vom Hersteller nicht vorgesehen ist, kann die Schutzfunktion beeinträchtigt sein.

ATTENTION: Lisez ce document et les documents listés dans la section Ressources complémentaires relatifs à l'installation, la configuration et le fonctionnement de cet équipement avant d'installer, configurer, utiliser ou entretenir ce produit. Les utilisateurs doivent se familiariser avec les instructions d'installation et de câblage en plus des exigences relatives aux codes, lois et normes en vigueur. Les activités relatives à l'installation, le réglage, la mise en service, l'utilisation, l'assemblage, le démontage et l'entretien doivent être réalisées par des personnes formées selon le code de pratique en vigueur.

Si cet équipement est utilisé d'une façon qui n'a pas été définie par le fabricant, la protection fournie par l'équipement peut être compromise.

주의: 본 제품 설치, 설정, 작동 또는 유지 보수하기 전에 본 문서를 포함하여 설치, 설정 및 작동에 관한 참고 자료 섹션의 문서들을 반드시 읽고 숙지하십시오. 사용자는 모든 관련 규정, 법규 및 표준에서 요구하는 사항에 대해 반드시 설치 및 배선 지침을 숙지해야 합니다.

설치, 조정, 가동, 조립, 분해, 유지보수 등 모든 작업은 관련 규정에 따라 적절한 교육을 받은 사용자를 통해서만 수행해야 합니다.

본 장비를 제조사가 명시하지 않은 방법으로 사용하면 장비의 보호 기능이 손상될 수 있습니다.

ATTENZIONE: Prima di installare, configurare ed utilizzare il prodotto, o effettuare interventi di manutenzione su di esso, leggere il presente documento ed i documenti elencati nella sezione "Altre risorse", riguardanti l'installazione, la configurazione ed il funzionamento dell'apparecchiatura. Gli utenti devono leggere e comprendere le istruzioni di installazione e cablaggio, oltre ai requisiti previsti dalle leggi, codici e standard applicabili.

Le attività come installazione, regolazioni, utilizzo, assemblaggio, disassemblaggio e manutenzione devono essere svolte da personale adeguatamente addestrato, nel rispetto delle procedure previste.

Qualora l'apparecchio venga utilizzato con modalità diverse da quanto previsto dal produttore, la sua funzione di protezione potrebbe venire compromessa.

DİKKAT: Bu ürünün kurulumu, yapılandırılması, işletilmesi veya bakımı öncesinde bu dokümanı ve bu ekipmanın kurulumu, yapılandırılması ve işletimi ile ilgili İlave Kaynaklar bölümünde yer listelenmiş dokümanları okuyun. Kullanıcılar yürürlükteki tüm yönetmelikler, yasalar ve standartların gereksinimlerine ek olarak kurulum ve kablolama talimatlarını da öğrenmek zorundadır.

Kurulum, ayarlama, hizmete alma, kullanma, parçaları birleştirmek, parçaları sökme ve bakım gibi aktiviteler sadece uygun eğitimli almış kişiler tarafından yürürlükteki uygulama yönetmeliklerine uygun şekilde yapılabilir.

Bu ekipman üretici tarafından belirlenmiş amacın dışında kullanılırsa, ekipman tarafından sağlanan koruma bozulabilir.

注意事項: 在安装、設定、操作或維護本產品前，請先閱讀此文件以及列於「其他資源」章節中所有有關安裝、設定與操作此設備的文件。使用者必須熟悉安裝和配線指示，並符合所有法規、法律和標準要求。

包括安裝、調整、交付使用、使用、組裝、拆卸和維護等動作都必須交由已經過適當訓練的人員進行，以符合適用的實作法規。

如果將設備用於非製造商指定的用途時，可能會造成設備所提供的保護功能受損。

POZOR: Než začnete instalovat, konfigurovat či provozovat tento výrobek nebo provádět jeho údržbu, přečtěte si tento dokument a dokumenty uvedené v části Dodatečné zdroje ohledně instalace, konfigurace a provozu tohoto zařízení. Uživatelé se musejí vedle požadavků všech relevantních vyhlášek, zákonů a norem nutně seznámit také s pokyny pro instalaci a elektrické zapojení.

Činnosti zahrnující instalaci, nastavení, uvedení do provozu, užívání, montáž, demontáž a údržbu musí vykonávat vhodně proškolený personál v souladu s příslušnými prováděcími předpisy.

Pokud se toto zařízení používá způsobem neodpovídajícím specifikaci výrobce, může být narušena ochrana, kterou toto zařízení poskytuje.

UWAGA: Przed instalacją, konfiguracją, użytkowaniem lub konserwacją tego produktu należy przeczytać niniejszy dokument oraz wszystkie dokumenty wymienione w sekcji Dodatkowe źródła omawiające instalację, konfigurację i procedury użytkowania tego urządzenia. Użytkownicy mają obowiązek zapoznać się z instrukcjami dotyczącymi instalacji oraz oprzewodowania, jak również z

obowiązującymi kodeksami, prawem i normami.

Działania obejmujące instalację, regulację, przekazanie do użytkowania, użytkowanie, montaż, demontaż oraz konserwację muszą być wykonywane przez odpowiednio przeszkolony personel zgodnie z obowiązującym kodeksem postępowania.

Jeśli urządzenie jest użytkowane w sposób inny niż określony przez producenta, zabezpieczenie zapewniane przez urządzenie może zostać ograniczone.

OBBS! Läs detta dokument samt dokumentet, som står listat i avsnittet Övriga resurser, om installation, konfiguration och drift av denna utrustning innan du installerar, konfigurerar eller börjar använda eller utföra underhållsarbete på produkten. Användare måste bekanta sig med instruktioner för installation och kabeldragning, förutom krav enligt gällande koder, lagar och standarder.

Åtgärder som installation, justering, service, användning, montering, demontering och underhållsarbete måste utföras av personal med lämplig utbildning enligt lämpligt bruk.

Om denna utrustning används på ett sätt som inte anges av tillverkaren kan det hända att utrustningens skyddsanordningar försätts ur funktion.

LET OP: Lees dit document en de documenten die genoemd worden in de paragraaf Aanvullende informatie over de installatie, configuratie en bediening van deze apparatuur voordat u dit product installeert, configureert, bedient of onderhoudt. Gebruikers moeten zich vertrouwd maken met de installatie en de bedringsinstructies, naast de vereisten van alle toepasselijke regels, wetten en normen.

Activiteiten zoals het installeren, afstellen, in gebruik stellen, gebruiken, monteren, demonteren en het uitvoeren van onderhoud mogen uitsluitend worden uitgevoerd door hiervoor opgeleid personeel en in overeenstemming met de geldende praktijkregels.

Indien de apparatuur wordt gebruikt op een wijze die niet is gespecificeerd door de fabrikant, dan bestaat het gevaar dat de beveiliging van de apparatuur niet goed werkt.

Environment and Enclosure



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

This equipment is considered Group 1, Class A industrial equipment according to IEC/CISPR 11. Without appropriate precautions, there may be difficulties with electromagnetic compatibility in residential and other environments due to conducted and radiated disturbances.

This equipment is supplied as enclosed equipment. It should not require additional system enclosure when used in locations consistent with the enclosure type ratings stated in the Specifications section of this publication. Subsequent sections of this publication may contain additional information regarding specific enclosure type ratings, beyond what this product provides, that are required to comply with certain product safety certifications.

In addition to this publication, see:

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

Preventing 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.

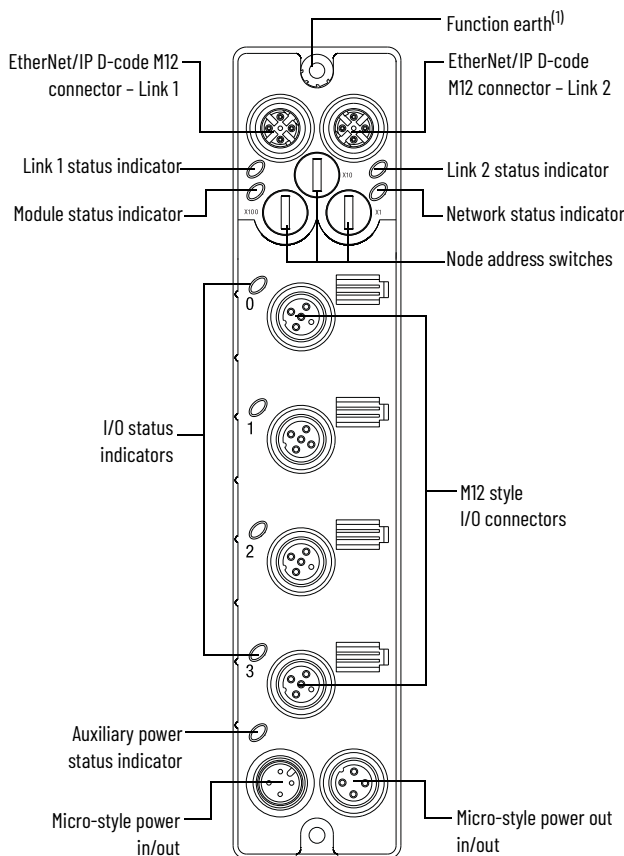
Additional Resources

Resource	Description
1732E ArmorBlock Dual-Port EtherNet/IP 4-Point Analog Modules Wiring Diagrams 1732E-WD003	Pinout guide wiring diagram for the ArmorBlock dual-port EtherNet/IP 4-Point Analog modules (1732E-1F4M12R, 1732E-0F4M12R, 1732E-1T4IM12R, 1732E-1R4IM12R).
1732E ArmorBlock Dual-Port EtherNet/IP 4-Point Thermocouple and RTD Input Modules User Manual 1732E-UM004	A detailed description of module functionality, configuration, installation procedure and information on how to use the ArmorBlock dual-port EtherNet/IP 4-Point Thermocouple and RTD modules (1732E-1T4IM12R, 1732E-1R4IM12R).
Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1	More information on proper wiring and grounding techniques.

If you would like a manual, you can:

- download a free electronic version from the Internet: rok.auto/literature.
- purchase a printed manual by contacting your local Allen-Bradley® distributor or Rockwell Automation representative

Module Identification



(1) Function Earth grounds the I/O block's EtherNet/IP communication circuitry which is designed to mitigate the effect of noise on the network. The device requires a solid earth ground connection, either through a metal screw to a grounded metal panel or through a wire. See [Ethernet Connector](#) on page 7 for connections.

Optional Accessories

The following table identifies optional accessories that you can use with the modules that have to be ordered separately.

Option	Catalog Number
Snap-in individual marker card ⁽¹⁾	1492-MD6X9
Cold Junction Compensation Terminal Chamber (with embedded thermistor) ⁽²⁾	871A-TS4CJC-DM or 871A-TR4CJC-DM

(1) Provides field labeling for the channels to allow for easy identification and description.
 (2) Recommended for use with the 1732E-IT4IM12R module.

Catalog Number Explanation

Refer to the table for a description of the module catalog numbers.

Catalog Number	Description	Network Connector	Power Connector
1732E-IT4IM12R	24V DC power, 4-point isolated thermocouple Input, dual-port EtherNet/IP module	Dual D-coded M12	Dual 4-pin micro A-coded M12
1732E-IR4IM12R	24V DC power, 4-point isolated RTD input, dual-port EtherNet/IP module		

Install the Module

To install the module:

- Set the network address
- Mount the module
- Connect the Functional Ground and Module power/Auxiliary power cables
- Connect the I/O and Network cables to the module



Functional/fault ground is required to provide a path for network surge and ESD events.

Set the Network Address

The I/O block ships with the rotary switches set to 999 and DHCP enabled.

To change the network address, you can do one of the following:

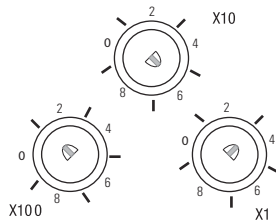
- adjust the switches on the front of the module.
- use a Dynamic Host Configuration Protocol (DHCP) server, such as Rockwell Automation® BootP/DHCP.
- retrieve the IP address from nonvolatile memory.

The I/O block reads the switches first to determine if the switches are set to a valid number. To set the network address:

1. Remove power.
2. Remove the switch dust caps.
3. Rotate the three (3) switches on the front of the module using a small blade screwdriver.
4. Line up the small notch on the switch with the number setting you wish to use. Valid settings range from 001...254.
5. Replace switch dust caps. Make sure not to over tighten.
6. Reapply power.
7. Record IP address on product label found on the side of enclosure.

Set Network Address

Example shows the node address switches at **163**, which sets the module IP address to 192.168.1.163.



Note: You need to remove the protective switch dust caps before you can adjust the address settings.

When the switches are set to a valid number, the I/O block's IP address is 192.168.1.xxx, where xxx represents the number set on the switches. The I/O block's subnet mask is 255.255.255.0 and default gateway address is set to 192.168.1.1.

When the I/O block uses the network address set on the switches, the I/O block does not have a host name assigned to it or use any Domain Name Server.

If the switches are set to an invalid number (for example, 000 or a value greater than 254 excluding 888), the I/O block checks to see if DHCP is enabled. If DHCP is enabled, the I/O block asks for an address from a DHCP server. The DHCP server also assigns other Transport Control Protocol (TCP) parameters. The modules are shipped with the network switches set to 999.

If DHCP is not enabled, the I/O block uses the IP address (along with other TCP configurable parameters) stored in nonvolatile memory.

Network Address Switch value 001

The module IP address cannot be the same as the gateway address. If the address switches are set to 001, the module IP address becomes 192.168.1.1, which is the same as the default gateway address. In this case, the module gateway address will be set to 0.0.0.0.

Default Factory Configuration

The switch value 888 resets the module to default factory configuration on power up. The module will not operate properly when powered up with this setting. The switches must be set to a different (and valid) value and then power cycled after a reset.

While in reset state, the module LED flashes red and the network LED goes off.

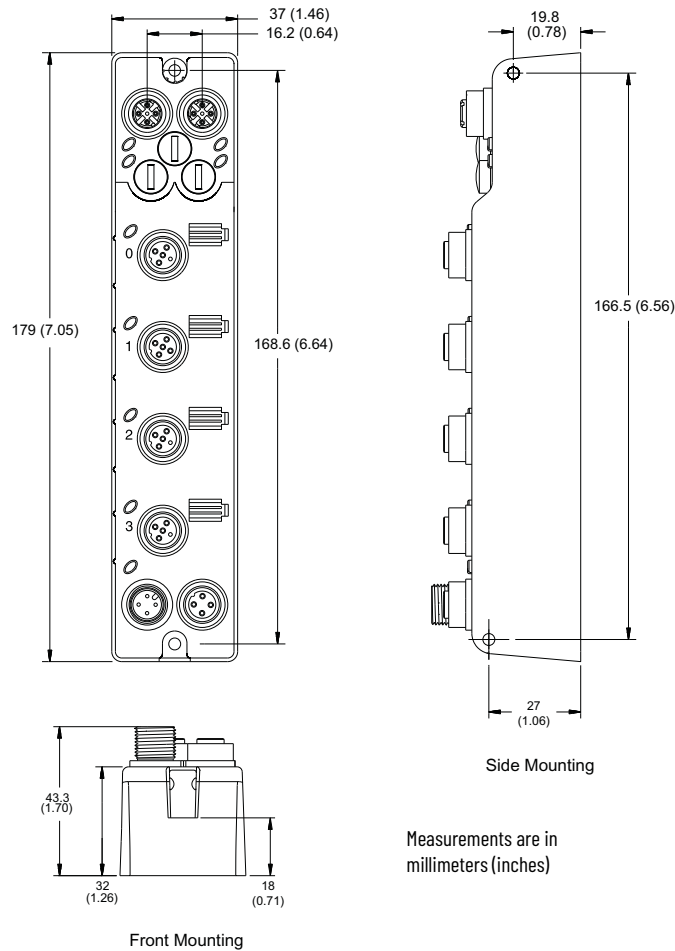
Mount the Module

Two sets of mounting holes are used to mount the module directly to a panel or machine. Mounting holes accommodate #6 (M3) pan head screws. The torque specification is 0.68 N•m (6 lb•in.).

Product Dimensions

See the mounting dimensions illustration to help you mount the module.

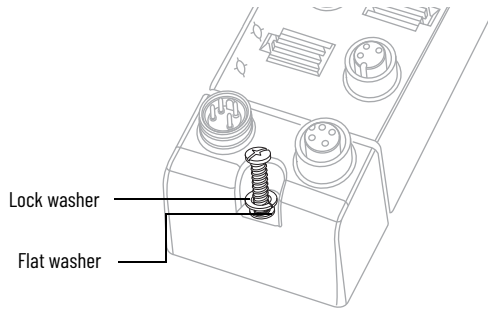
Module Dimensions



Mount the Module in High Vibration Areas

If you mount the module in an area that is subject to shock or vibration, we recommend you use a flat and a lock washer to mount the module. Mount the flat and the lock washer as shown in the mounting illustration. Torque the mounting screws to 0.68 N•m (6 lb•in.).

High Vibration Area Mounting



Connect the I/O, Network and Auxiliary Cables to the Module

The 1732E-IT4IM12R and 1732E-IR4IM12R modules have 5-pin micro-style, A-coded M12 connectors. We provide caps to cover the unused connectors on your module. Connect the quick-disconnect cord sets you selected for your module to the appropriate ports.

I/O Connectors

Figure 1 - Micro-style M12 5-Pin Input Female Connector - 1732E-IT4IM12R

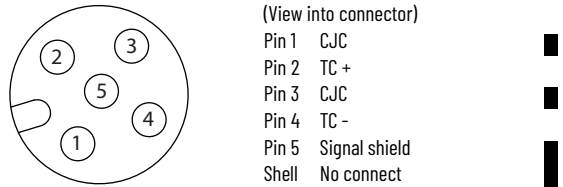
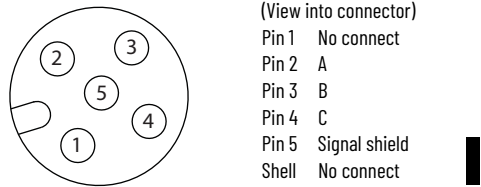
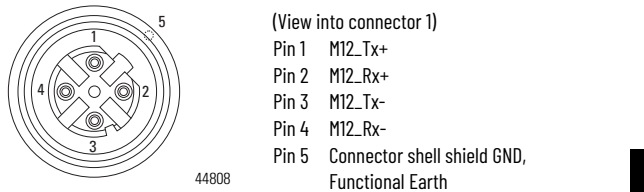


Figure 2 - Micro-style M12 5-Pin Input Female Connector - 1732E-IR4IM12R



Ethernet Connector

Figure 3 - D-Code Micro Network Female Connector



IMPORTANT Use the 1585D-M4DC-H: Polyamide small body unshielded mating connectors for the D-Code M12 female network connector. Note that the distance between the center of each Ethernet connector is 16.2 mm (see [Module Dimensions](#) on page 6). Rockwell Automation recommends the use of suitable cable based on this measurement. Some of the recommended cables are 1585D-M4TBJM-x and 1585D-M4TBDM-x for daisychains.

IMPORTANT Use two twisted pair CAT5E UTP or STP cables.

D-Code M12 Pin	Wire Color	Signal	8-way Modular RJ45 Pin
1	White-orange	TX+	1
2	White-green	RX+	3
3	Orange	TX-	2
4	Green	RX-	6

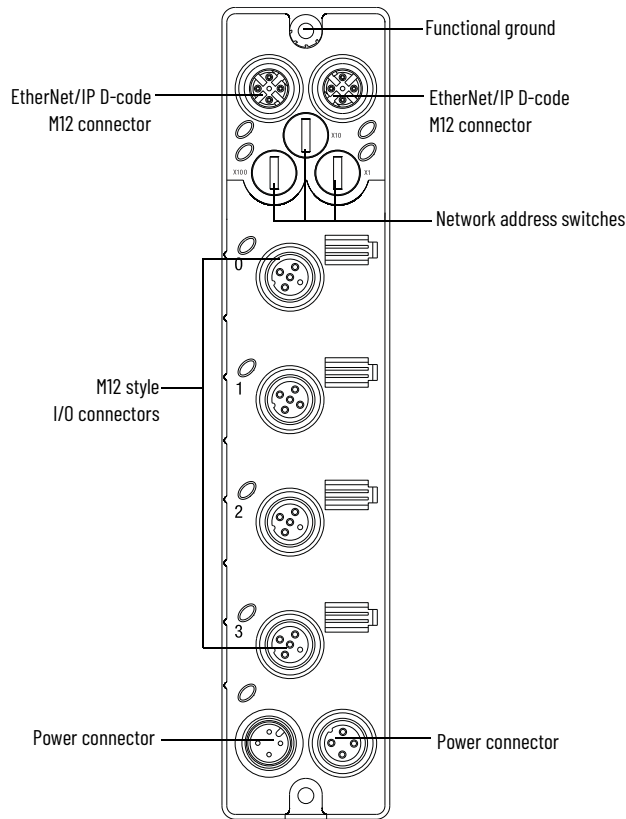


ATTENTION: The device does not provide bonding or grounding terminal. You must provide bonding or grounding if required for local installation.

Configure the Module

See the illustration for configuration operations.

Configure Operations

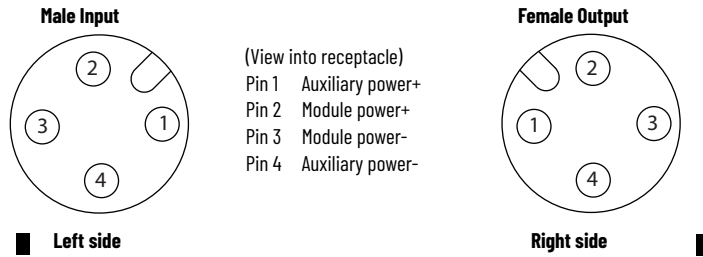


See Essential Components Selection Guide, publication [EC-CA100](#), for Rockwell Automation cable and cord set offerings or use the configuration tools available at rok.auto/systemtools.

Power Connectors

Attach the micro-style 4-pin connector to the micro-style 4-pin receptacle as shown below.

Micro-style 4-Pin Input Male Receptacle



The power required by the module is based on a 4-pin micro-style connector system. Power can be daisy chained through the module either left to right or right to left. The standard configuration is with Module/Auxiliary power entering the module on the left connector.

Both modules require two 24V DC (nominal) supplies. These supplies are called the Module Power and the Auxiliary Power. The Module power supplies the microprocessor and Ethernet portions of the module, while the Auxiliary power supplies the I/O circuits.

Internally, the Module Power and Auxiliary Power are electrically isolated.

IMPORTANT The maximum current that any pin on the power connectors can carry is 4 A.



ATTENTION: To comply with the CE Low Voltage Directive (LVD), this equipment and all connected I/O must be powered from a source compliant with the following:
 Safety Extra Low Voltage (SELV) or Protected Extra Low Voltage (PELV).



ATTENTION: To comply with UL restrictions, this equipment must be powered from a source compliant with the following: Limited Voltage/Limited Current.
ATTENTION: The device meets UL Type 1 Enclosure rating.



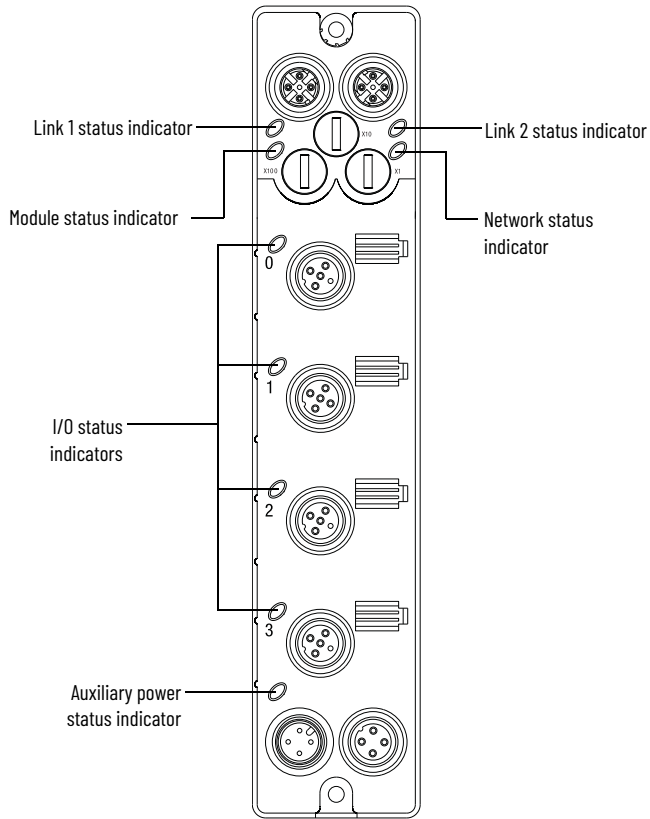
WARNING: Non-metallic enclosures do not provide grounding between conduit connections. Use ground type bushings and jumper wires or equivalent.

Interpret LED Indicators

This module has the following indicators:

- Network, Module, and Link status indicators for EtherNet/IP
- Auxiliary power status indicator
- Individual I/O status indicators for inputs

Status Indicators



Indicator Status for the Modules

Indicator	Status	Description
Module status	Off	No power applied to the device.
	Flashing red/green	The module is performing POST (Power-On Self Test), which completes within 30 s.
	Green	Device operating normally.
	Flashing red	Module has experienced a recoverable fault. Possible minor faults include the following: <ul style="list-style-type: none"> • IP Address switches do not match configuration in use. • The device has completed a reset to factory default request due to the switches being set to 888 at power up, and a power cycle is required. • The device is performing a firmware flash update. • Channel fault • No auxiliary power
	Red	Unrecoverable fault - may require device replacement.
Network status	Off	The device is not initialized or the module does not have an IP address.
	Flashing green	The device has no CIP™ connections. The device has an IP address, but no CIP connections are established.
	Green	Device is online, has an IP address. CIP connections are established.
	Flashing red	One or more connections have timed out.
	Red	The module has detected that its IP address is already in use.
	Flashing red/green	The module is performing a power-on self test (POST).
Network link status (Link 1/Link 2)	Off	No link established.
	Green	Link established on indicated port at 100 Mbps.
	Flashing green	Link activity present on indicated port at 100 Mbps.
	Yellow	Link established on indicated port at 10 Mbps.
	Flashing yellow	Link activity present on indicated port at 10 Mbps.
Auxiliary Power status	Off	Auxiliary power off or not connected.
	Green	Auxiliary Power applied to device.
I/O status	Off	The input channel is inactive, can be calibrated.
	Flashing Green	Channel is calibrating.
	Green	Normal operation, inputs being scanned.
	Flashing Yellow	Thermistor fault - 1732E-IT4IM12R only
	Flashing Red	Fault. Overrange, underrange, low, low low, high, high high alarm.
	Red	Calibrating

IMPORTANT The Module Status LED indicator will flash red and green for a maximum 30 s while the module completes its POST (Power-On Self Test).

Specifications

General Specifications

Attributes	Value
Voltage, power, max	30V DC
Voltage, power, min	12V DC
Module power	12...30V DC @ 300 mA
Power consumption	3 W @ 24V DC, typical 3.5 W, max (module unloaded)
Isolation voltage	50V (continuous), Basic Insulation Type Type tested @ 707V DC for 60 s
Communication rate	EtherNet/IP 10/100 Mbps Full or half-duplex 100 meter per segment
Status indicators	Module status - red/green Network status - red/green Link status - green/yellow Auxiliary power status - green I/O LED - red/green
Dimensions, approx., HxWxD	179 x 37 x 27 mm (7.05 x 1.46 x 1.06 in.)
Weight, approx.	0.34 kg (0.75 lb)
Wiring category ⁽¹⁾	1 - on signal ports 1 - on power ports 1 - on communication ports

(1) Use this Conductor Category information for planning conductor routing. See publication [1770-4.1](#), Industrial Automation Wiring and Grounding Guidelines.

Input Specifications - 1732E-IT4IM12R

Attributes	Value																																								
Number of inputs	4, isolated																																								
Resolution, min	16 bits																																								
Data format	Signed integer																																								
Thermocouple types	<table border="1"> <thead> <tr> <th>Type</th> <th>Material</th> <th>Temperature Range °C (°F)</th> <th>Voltage Range (mV)</th> </tr> </thead> <tbody> <tr> <td>B</td> <td>Pt /30% Rh vs. Pt/5% Rh</td> <td>40...1820 (104...3308)</td> <td>0...13.820</td> </tr> <tr> <td>C</td> <td>W/5% Re vs. W/26% Re</td> <td>0...2320 (32...4208)</td> <td>0...37.107</td> </tr> <tr> <td>E</td> <td>Ni/Cr vs. Cu/Ni</td> <td>-270...1000 (-454...1832)</td> <td>-9.835...76.373</td> </tr> <tr> <td>J</td> <td>Ni/Cr vs. Cu/Ni</td> <td>-210...1200 (-346...2192)</td> <td>-8.095...69.553</td> </tr> <tr> <td>K</td> <td>Ni/Cr vs. Ni/Al</td> <td>-270...1372 (-454...2501.6)</td> <td>-6.458...54.886</td> </tr> <tr> <td>N</td> <td>Ni/14.2%Cr/1.4%Si vs. Ni/4.4%Si/0.1%Mg</td> <td>-270...1300 (-454...2372)</td> <td>-4.345...47.513</td> </tr> <tr> <td>R</td> <td>Pt/13%Rh vs. Pt</td> <td>-50...1768 (-58...3214.4)</td> <td>-0.226...21.101</td> </tr> <tr> <td>S</td> <td>Pt/10%Rh vs. Pt</td> <td>-50...1768 (-58...3214.4)</td> <td>-0.236...18.693</td> </tr> <tr> <td>T</td> <td>Cu vs. Cu/Ni</td> <td>-270...400 (-454...752)</td> <td>-6.258...20.872</td> </tr> </tbody> </table>	Type	Material	Temperature Range °C (°F)	Voltage Range (mV)	B	Pt /30% Rh vs. Pt/5% Rh	40...1820 (104...3308)	0...13.820	C	W/5% Re vs. W/26% Re	0...2320 (32...4208)	0...37.107	E	Ni/Cr vs. Cu/Ni	-270...1000 (-454...1832)	-9.835...76.373	J	Ni/Cr vs. Cu/Ni	-210...1200 (-346...2192)	-8.095...69.553	K	Ni/Cr vs. Ni/Al	-270...1372 (-454...2501.6)	-6.458...54.886	N	Ni/14.2%Cr/1.4%Si vs. Ni/4.4%Si/0.1%Mg	-270...1300 (-454...2372)	-4.345...47.513	R	Pt/13%Rh vs. Pt	-50...1768 (-58...3214.4)	-0.226...21.101	S	Pt/10%Rh vs. Pt	-50...1768 (-58...3214.4)	-0.236...18.693	T	Cu vs. Cu/Ni	-270...400 (-454...752)	-6.258...20.872
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CJC Terminal Chamber recommended	Rockwell Automation 871A-TS4CJC-DM, 871A-TR4CJC-DM																																								
Cold junction compensation range	0...70 °C (32...158 °F) for 302 type thermistors																																								
Cold junction compensation modes	Average Selected, Channel Independent, and CJC Offset (For more information, see the User Manual, publication 1732E-UM004)																																								
Thermistor types supported	Thermometrics MF65F302V/W or DC95F302V/W																																								

Input Specifications - 1732E-IT4IM12R

Attributes	Value
Input voltage range	±78.125 mV 0...78.125 mV
Accuracy	0.1% Full Scale @ 25 °C (77 °F)
Accuracy drift with temperature	30 ppm % Full Scale /°C @ 25 °C (77 °F)
Calibration	Factory calibrated. Calibration is also supported through RSLogix 5000®.
Common mode rejection rate	120 dB @ 50/60 Hz
Normal mode rejection rate	100 dB @ 50/60 Hz
Sample Rate Filters ⁽¹⁾	50 Hz 60 Hz 250 Hz 500 Hz

(1) Sample Rate/Notch Filter Frequency, selectable per channel.

Input Specifications - 1732E-IR4IM12R

Attributes	Value																																				
Number of inputs	4, isolated																																				
Resolution, min	16 bits																																				
Data format	16-bit sign magnitude																																				
Sensors supported	100...200Ω α =0.00385/0.003916 Pt RTD 100/120Ω Ni RTD 10 Ω Cu α =0.00427 RTD																																				
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(1) Sample rate filter selectable on a module basis only.

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...60 °C (-4...140 °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)
Temperature, ambient, max	60 °C (140 °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	IEC60068-2-27 (Test Ea, Unpackaged Shock): 30 g
Shock, nonoperating	IEC60068-2-27 (Test Ea, Unpackaged Shock): 50 g
Emissions	CISPR 11: Group 1, Class A
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 at 900 MHz 10V/m with 200 Hz 50% Pulse 100% AM at 1890 MHz 10V/m with 1 kHz sine-wave 80% AM from 2000...2700 MHz
EFT/B immunity	IEC 61000-4-4: ±3 kV at 5 kHz on power ports ±3 kV at 5 kHz on signal ports ±3 kV at 5 kHz on communication ports
Surge transient immunity	IEC 61000-4-5: ±1 kV line-line (DM) and ±2 kV line-earth (CM) on power ports ±2 kV line-earth (CM) on communication 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	Meets IP65/66/67/69K (when marked)

Certifications

Certification (when product is marked) ⁽¹⁾	Value
c-UR-us	UL Recognized Component Industrial Control Equipment, certified for US and Canada. See UL File E322657.
CE	European Union 2004/108/EC EMC Directive, compliant with: EN 61326-1; Meas./Control/Lab., Industrial Requirements EN 61000-6-2; Industrial Immunity EN 61000-6-4; Industrial Emissions EN 61131-2; Programmable Controllers (Clause 8, Zone A & B)
C-Tick	Australian Radiocommunications Act, compliant with: AS/NZS CISPR 11; Industrial Emissions
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with: Article 58-2 of Radio Waves Act, Clause 3
EtherNet/IP	ODVA conformance tested to EtherNet/IP specifications.

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

Notes:

Rockwell Automation Support

Use these resources to access support information.

Technical Support Center	Find help with how-to videos, FAQs, chat, user forums, and product notification updates.	rok.auto/support
Knowledgebase	Access Knowledgebase articles.	rok.auto/knowledgebase
Local Technical Support Phone Numbers	Locate the telephone number for your country.	rok.auto/phonesupport
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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For technical support, visit rok.auto/support.

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Publication 1732E-IN005C-EN-E - July 2020 | Supersedes Publication 1732E-IN005B-EN-E-September 2012

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