

Installation Instructions

Original Instructions



Allen-Bradley

by ROCKWELL AUTOMATION

Compact 5000 I/O EtherNet/IP Adapters

Catalog Numbers 5069-AENTR, 5069-AENTRK

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The Compact 5000[®] I/O EtherNet/IP[™] adapters perform these functions.

- Facilitates high-speed data transfer across an EtherNet/IP network between Compact 5000 I/O modules and a Logix 5000[®] controller.
- Provides system-side and field-side power to Compact 5000 I/O modules.
- Supports as many as 31 Compact 5000 I/O modules

The adapters are configured with the Studio 5000 Logix Designer[®] application. For more information on how to use Compact 5000 I/O EtherNet/IP adapters, including the compatible Logix 5000 controllers and Studio 5000 Logix Designer application versions, see the publications that are listed in the [Additional Resources on page 11](#).

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.

Topic	Page
Removed the 5069-AEN2TR module information	Throughout
Updated the UK, European, and IEC Hazardous Location Approval information	3
Updated the special conditions for safe use information	4
Updated the electrical safety considerations	4
Updated the number that the rotary switches are set to at shipping to 999	6
Updated the following specifications: Temperature (operating), SA power, SA power (passthrough)	11
Added UKEX to the ATEX specification	11



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：在安裝、配置、操作和維護本產品前，請閱讀本文檔以及“其他資源”部分列出的有關設備安裝、配置和操作的相應文檔。除了所有適用規範、法律和標準的相關要求之外，用戶還必須熟悉安裝和接線說明。

安裝、調整、搬運、使用、組裝、拆卸和維護等各項操作必須由經過適當訓練的專業人員按照適用的操作規範實施。

如果未按照製造商指定的方式使用該設備，則可能會損害設備提供的保護。

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、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, 사용, 조립, 분해, 유지보수 등 모든 작업은 관련 규정에 따라 적절한 교육을 받은 사용자가 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 ilave 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 birleştirme, parçaları sökme ve bakım gibi aktiviteler sadece uygun eğitimleri 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：在安裝、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 vhodné 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.

ÖBS! Läs detta dokument samt dokumentet, som står listat i avsnittet Övriga resurser, om installation, konfigurering 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 bedravingsinstructies, 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.

North American Hazardous Location Approval

The following information applies when operating this equipment in hazardous locations.	Informations sur l'utilisation de cet équipement en environnements dangereux.
<p>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.</p>	<p>Les produits marqués "CL I, DIV 2, GP A, B, C, D" ne conviennent qu'à 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.</p>
 <p>WARNING: Explosion Hazard -</p> <ul style="list-style-type: none"> 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. 	 <p>AVERTISSEMENT: Risque d'Explosion -</p> <ul style="list-style-type: none"> Couper le courant ou s'assurer que l'environnement est classé non dangereux avant de débrancher l'équipement. 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. La substitution de composants peut rendre cet équipement inadapté à une utilisation en environnement de Classe I, Division 2.

UK and European Hazardous Location Approval

The following applies to products marked  **II 3 G:**


- 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 Regulation 2016 No. 1107 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 EN IEC 60079-7:2015+A1:2018, Explosive atmospheres. Equipment protection by increased safety "e".
- Comply to 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 DEMK016ATEX1758X and UL220UKEX2494X.
- 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 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 to Standards IEC 60079-0, Explosive atmospheres - Part 0: Equipment - General requirements, Edition 7, Revision Date 2017, IEC 60079-7, 5.1 Edition revision date 2017, Explosive atmospheres - Part 7: Equipment protection by increased safety "e", reference IECEx certificate number IECExUL16.0124X.
- May have catalog numbers followed by a "K" to indicate a conformal coating option.

Environment and Enclosure

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- 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 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 more installation requirements.
 - NEMA 250 and EN/IEC 60529, as applicable, for explanations of the degrees of protection provided by enclosures.

Special Conditions for Safe Use



WARNING:

- 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 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.
 - The equipment must be used only with UKEX/ATEX/IECEx certified Rockwell Automation® backplanes.
 - 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.
 - Earthing is accomplished through mounting of modules on rail.
 - When installed in a non-hazardous area, the equipment may alternatively be installed in a controlled environment that provides equivalent protection.
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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.
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Electrical Safety Considerations



ATTENTION:

- If Functional Safety modules are connected to the Compact 5000 I/O system, power to this equipment and all connected I/O must be supplied from a source compliant with the following:
 - SELV source approved to EN/IEC60950-1, EN/IEC61010-2-201 or EN/IEC62368-1 (ES1).
 - All wiring must comply with applicable electrical installation requirements (e.g., N.E.C. article 501-4(b)).
 - Wire conductor and insulation ratings shall support minimum temperature rating of 105 °C (221 °F).
 - Do not wire more than 1 conductor on any single terminal.
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ATTENTION:

- 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 0...60 °C (32...140 °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.
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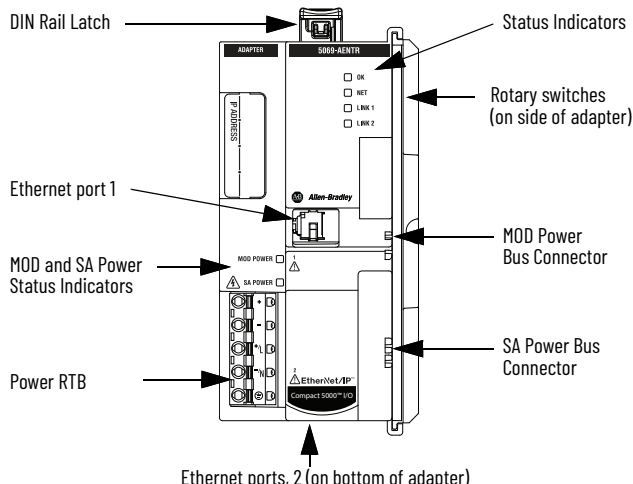


WARNING: When used in a Class I, Division 2, hazardous location, this equipment must be mounted in a suitable enclosure with proper wiring method that complies with the governing electrical codes.

IMPORTANT

Any illustrations, charts, sample programs, and layout examples shown in this publication are intended solely for the purposes of example. Since there are many variables and requirements associated with any particular installation, Rockwell Automation does not assume responsibility or liability for actual use based upon the examples shown in this publication.

About the Adapters



Install a Compact 5000 I/O System

Before you install the adapter, verify that you have the following:

Components Needed to Install a Compact 5000 I/O EtherNet/IP Adapter

Component	Description
Removable Terminal Blocks (RTB)	One of the following RTB types for each power type: <ul style="list-style-type: none"> 5069-RTB5-SCREW RTB 5069-RTB5-SPRING RTB IMPORTANT: You must order RTBs separately. The RTBs are available in 5069 RTB kits. <ul style="list-style-type: none"> The 5069-RTB5-SCREW kit contains the 5069-RTB5-SCREW RTBs. The 5069-RTB5-SPRING kit contains the 5069-RTB5-SPRING RTBs. We recommend that you order only the RTB type that your system requires.
External power supply for Module (MOD) power	A power supply that is adequately sized to provide MOD power, that is, system-side power, to the Compact 5000 I/O system. For more information, see System Power Considerations on page 6 .
External power supply for Sensor actuator (SA) power	A power supply that is adequately sized to provide SA power, that is, field-side power, to the Compact 5000 I/O system. For more information, see System Power Considerations on page 6 .
End cap	An end cap ships with the CompactLogix [®] 5380 controllers, CompactLogix 5480 controller, and Compact GuardLogix 5380 controllers and the Compact 5000 I/O EtherNet/IP adapters.
Tools	You use the following tools to wire the RTBs: <ul style="list-style-type: none"> Screwdriver Wire stripper Wires For more information on available wire sizes and wire insulation-stripping length, see Specifications on page 11 .
DIN rail	Compatible zinc-plated, chromate-passivated steel DIN rail. You can use the following DIN rails: <ul style="list-style-type: none"> EN50022 - 35 x 7.5 mm (1.38 x 0.30 in.) EN50022 - 35 x 15 mm (1.38 x 0.59 in.)
EtherNet/IP network components	You must install the network and all required components.
Software	If you do not use the rotary switches to set the adapter IP address, you can use the following software to set the IP address: <ul style="list-style-type: none"> DHCP server BOOTP DHCP EtherNet/IP Commissioning Tool - We recommend that you use version 3.02.00 or later. RSLinx[®] Classic software For more information, see Set the Network Internet Protocol (IP) Address on page 6 .

System Planning

Follow these rules when planning your system configuration:

- The adapter is the leftmost component in the bank.
- Local Compact 5000 I/O modules are installed to the right of the adapter.
- The adapter can communicate with as many as 31 local I/O modules.
- Before powerup, verify that the end cap is installed on the right-most Compact 5000 I/O module in the system.

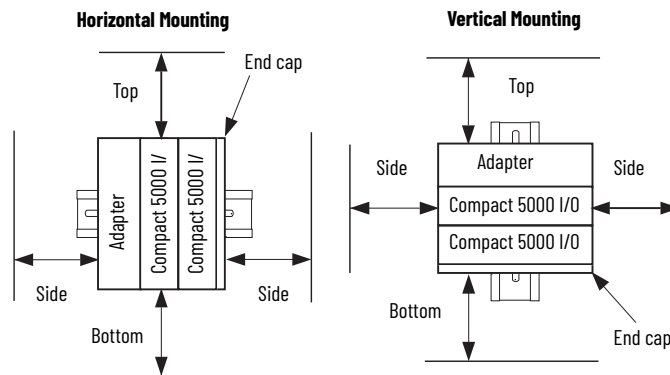


ATTENTION: Do not discard the end cap. Use this end cap to cover the exposed interconnections on the last module on the DIN rail. Failure to do so could result in equipment damage or injury from electric shock.

Minimum Space

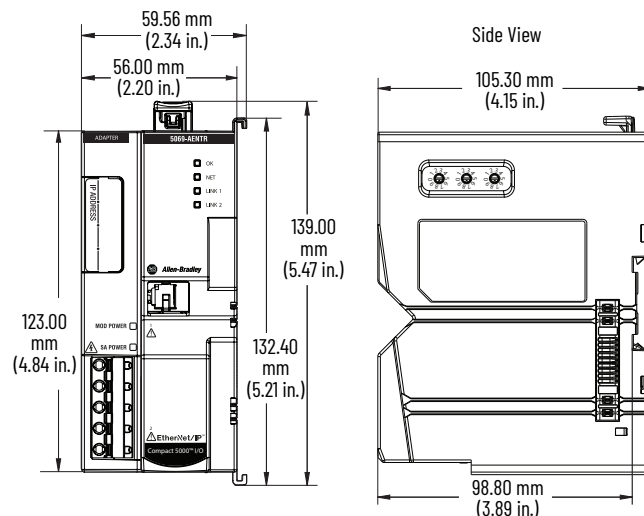
Maintain minimum spacing from enclosure walls, wireways, and adjacent equipment. Consider the following supported mounting options:

IMPORTANT Allow 25 mm (1 in.) of space on all sides of the system for adequate ventilation.



IMPORTANT When you mount the DIN rail vertically, the operating ambient temperature must be derated to 30% of the maximum Ta or 42 °C (108 °F).

Adapter Dimensions



Ground Considerations

You can use the following DIN rails with the adapters:

- EN50022 - 35 x 7.5 mm (1.38 x 0.30 in.)
- EN50022 - 35 x 15 mm (1.38 x 0.59 in.)



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.

System Power Considerations

Compact 5000 I/O EtherNet/IP adapters provide power to a Compact 5000 I/O system via RTBs that are connected to external power supplies. The RTBs provide the following power to the system.

Power Type	Description
MOD power	<p>System-side power that is used to operate the Compact 5000 I/O system. MOD power is provided through the MOD power RTB and passed across the MOD power bus.</p> <ul style="list-style-type: none"> • The total continuous current draw across the MOD power bus must not be more than 10 A, max, at 18...32V DC. • Confirm that the external MOD power supply is adequately sized for the total MOD power bus current draw in the system, plus the MOD power inrush current requirements.
SA power	<p>Field-side power that is used to power field-side devices. SA power is provided through the SA power RTB and passed across the SA power bus.</p> <ul style="list-style-type: none"> • If you are using DC voltage for SA power, the continuous current draw across the SA power bus must not be more than 10 A, max at 18...32V DC. • If you are using AC voltage for SA power, the continuous current draw across the SA power bus must not be more than 10 A, max at 18...240V AC. • Confirm that the external SA power supply is sized adequately for the total SA power current draw in the system, including the combined inrush current requirements for all connected modules.

IMPORTANT The Compact 5000 I/O EtherNet/IP adapters **do not** have an embedded power supply that powers the system.

- You must use SELV-listed power supplies for MOD power and SA power if there are Functional Safety modules that are connected to the Compact 5000 I/O system.
- If the adapter is used in a safety system, more restrictions can apply to the power supply that is used for SA power.
- Not all Class 2/SELV-listed power supplies are certified for use in all applications, for example, nonhazardous and hazardous environments.

IMPORTANT We strongly recommend that you use separate external power supplies for MOD power and SA power respectively. This practice helps to prevent unintended consequences that can result if you use one supply.

If you use separate external power supplies, the loss of power from one external power supply does not affect the availability of power from the other supply. For example, if separate external power supplies are used and SA power is lost, MOD power remains available for the Compact 5000 I/O modules.

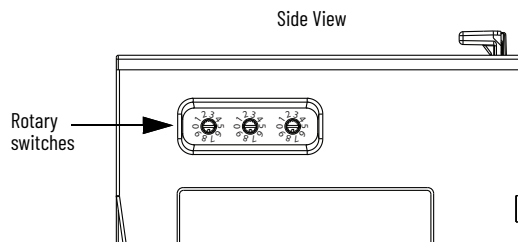
For more information on electrical safety considerations, see [Electrical Safety Considerations on page 4](#) and the publications that are listed on [page II](#).

Set the Network Internet Protocol (IP) Address

Compact 5000 I/O EtherNet/IP adapters ship DHCP-enabled and with their rotary switches set to 999.

If the network uses 192.168.1.x, we recommend that you use the rotary switches to set the last octet of the network IP address. Valid numbers range from 001...254.

To use the rotary switches to set the IP address, turn the switches to the appropriate numbers before you install the adapter. The leftmost switch represents the first digit in the octet, the middle switch represents the second digit, and the right-most switch represents the third digit.



WARNING: When you change switch settings while power is on, an electric arc can occur. This arc could cause an explosion in hazardous location installations. Be sure that power is removed or the area is nonhazardous before proceeding.

At powerup, the adapter reads the rotary switches to determine if they are set to a valid number for the last octet of the IP address. If the settings are a valid number, these conditions result:

- IP address = 192.168.1.xxx (where xxx represents the switch settings)
- Subnet mask = 255.255.255.0
- Gateway address = 0.0.0.0
- The adapter does not have an assigned host name, nor does it use any Domain Name System

If the network does not use 192.168.1.x, do not change the switch positions before you install the adapter. After you install and power up the adapter, you can use the following to set the network IP address:

- DHCP server
- BOOTP DHCP EtherNet/IP Commissioning Tool - We recommend that you use version 3.02.00 or later.
- RSLinx Classic software

For more information on how to use software to set the IP address, see the Compact 5000 EtherNet/IP Adapters User Manual, publication [ENET-UM007](#).

Install the Adapter

The adapter must be the first and leftmost module in a Compact 5000 I/O system.



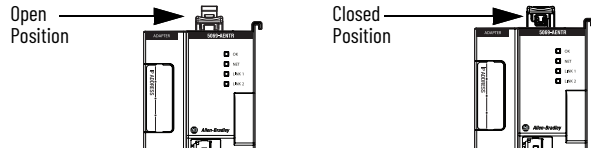
ATTENTION:

- Do not remove or replace the adapter while power is applied. Interruption of the backplane can result in unintentional operation or machine motion.
- During DIN rail mounting of all devices, be sure that all debris (metal chips, wire strands) is kept from falling into the adapter or modules. Debris that falls into the adapter or modules could cause damage on powerup.



WARNING: If you insert or remove the adapter while power is on, an electric arc can occur. This arc could cause an explosion in hazardous location installations. The module does not support "Removal and Insertion Under Power" (RIUP) capability. Do not connect or disconnect the module while power is applied. Be sure that power is removed before proceeding.

- Confirm that the DIN rail latches are closed.
- If the DIN rail latches are open, gently push the rear latch back until the front latch pops up and clicks.



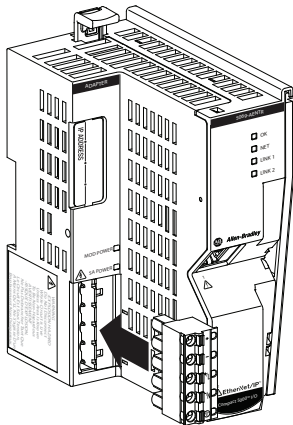
- Position the adapter so that the back of it faces the DIN rail.
- Press the adapter against the DIN rail until you hear a click.
- Confirm that the adapter is latched securely.

Install the RTB



WARNING: If you connect or disconnect the RTB with power applied, an Electric Arc can occur. This arc could cause an explosion in hazardous location installations. The RTB does not support RIUP capability. Do not connect or disconnect the RTB while power is applied. Be sure that power is removed before proceeding.

- Align the Power RTB with the open connection area on the adapter.
- Push the RTB into place.



Wire the RTB



WARNING: If you connect or disconnect wiring while the field-side power is on, an electric arc can occur. This arc could cause an explosion in hazardous location installations. Be sure that power is removed or the area is nonhazardous before proceeding.

Before you connect MOD power or SA power to an adapter, complete the following tasks:

- Read [System Power Considerations on page 6](#).
- Confirm that the external power supplies that supply MOD power and SA power are adequately sized for your Compact 5000 I/O system. For more information, see [page 6](#).
- Verify that the external power supplies that provide MOD power and SA power are turned off.
- Install the RTBs onto the adapter before you connect the power.

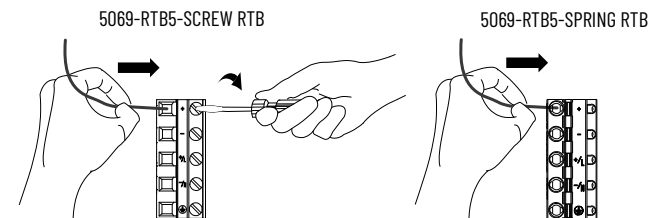
Wire MOD Power

IMPORTANT Your application can require a power control device, for example, a switch, between the external 24V DC power source and the adapter to control when the module is powered. If so, you must install the power control device at the VDC+ terminal on the removable terminal block.

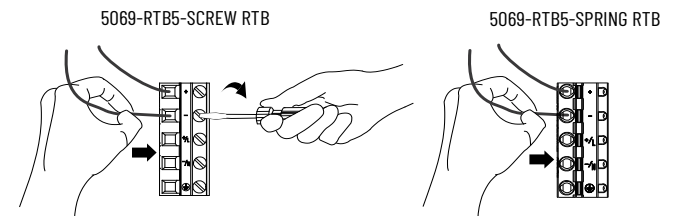
If you install the power control device at the VDC-terminal, the adapter can fail to power up or power down properly.

- Verify that the external power supply is turned off.
- Strip 10 mm (0.39 in.) of insulation from the wires that you connect to the RTB.
- Connect the 24V DC(+) wire from the external power supply to the (+) terminal.

RTB Type	Action
Screw	1. Insert the wire into the terminal. 2. With a screwdriver, torque the screw to 0.5...0.6 N•m (4.4...5.3 lb•in) to close the terminal on the wire.
Spring	Push the wire into the terminal. If the wire is too thin, crimp a wire ferrule on the wire and insert it.



- Connect the 24V DC(-) wire from the external power supply to the (-) terminal.



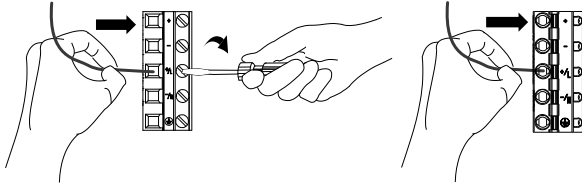
Wire SA DC Power

1. Confirm that MOD power and all sources of SA power are turned off.
2. Strip 10 mm (0.39 in.) of insulation from the wires that you connect to the RTB.
3. Connect the DC (+) wire from the external DC power supply to the (+/L) terminal.

RTB Type	Action
Screw	1. Insert the wire into the terminal. 2. With a screwdriver, torque the screw to 0.5...0.6 N•m (4.4...5.3 lb•in) to close the terminal on the wire.
Spring	Push the wire into the terminal. If necessary, you can crimp a wire ferrule on the wire and insert it.

5069-RTB5-SCREW RTB

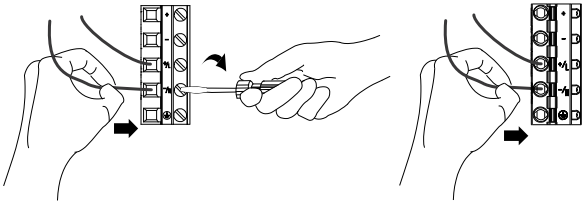
5069-RTB5-SPRING RTB



4. Connect the DC(-) wire from the external SA DC power supply to the (-/N) terminal.

5069-RTB5-SCREW RTB

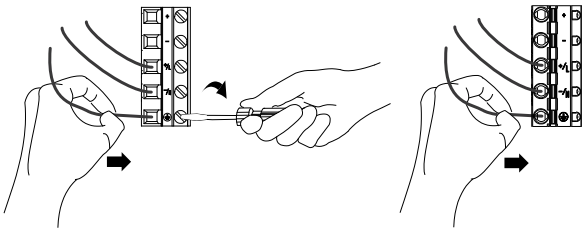
5069-RTB5-SPRING RTB



5. Connect a wire from an earth ground location to the Ground (⏏) on the RTB.

5069-RTB5-SCREW RTB

5069-RTB5-SPRING RTB



This ⏏ symbol denotes an Earth Ground terminal that provides a low impedance path between electrical circuits and earth for functional purposes and provides noise immunity improvement. This connection must be made for functional purposes.

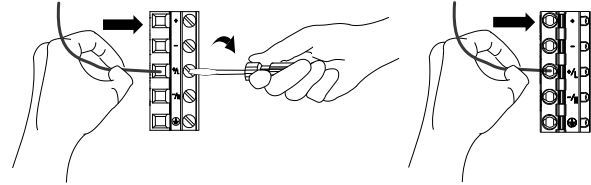
Wire SA AC Power

1. Verify that the SA power source is turned off.
2. Strip 10 mm (0.39 in.) of insulation from the wires that you connect to the RTB.
3. Connect the L1/AC(+) wire from the external SA AC power source to the (+/L) terminal.

RTB Type	Action
Screw	1. Insert the wire into the terminal. 2. With a screwdriver, torque the screw to 0.5...0.6 N•m (4.4...5.3 lb•in) to close the terminal on the wire.
Spring	Push the wire into the terminal. If the wire is too thin, crimp a wire ferrule on the wire and insert it.

5069-RTB5-SCREW RTB

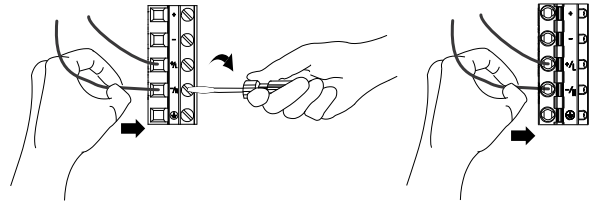
5069-RTB5-SPRING RTB



4. Connect the L2/N/AC (-) wire from the external SA AC power source to the (-/N) terminal.

5069-RTB5-SCREW RTB

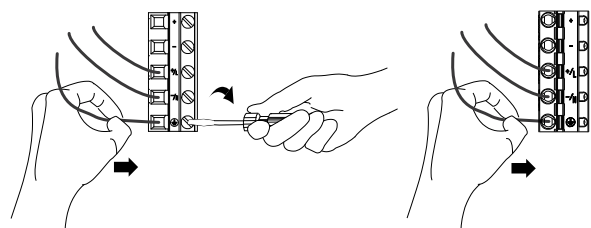
5069-RTB5-SPRING RTB



5. Connect a wire from an earth ground location to the Ground (⏏) on the RTB.

5069-RTB5-SCREW RTB

5069-RTB5-SPRING RTB



This ⏏ symbol denotes an Earth Ground terminal that provides a low impedance path between electrical circuits and earth for functional purposes and provides noise immunity improvement. This connection must be made for functional purposes.



WARNING: Protection is relied upon an external branch circuit protection.

Disconnect Wires from the RTB

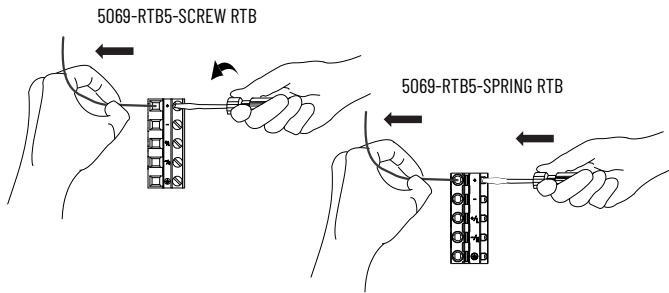


WARNING: If you connect or disconnect wiring while the field-side power is on, an electric arc can occur. This arc could cause an explosion in hazardous location installations. Be sure that power is removed or the area is nonhazardous before proceeding.

If necessary, complete the following tasks to disconnect the wires from any RTB on the adapter. The actions apply to every catalog number for an RTB type.

For example, the graphic shows the 5069-RTB4-SCREW RTB. However, you complete the same actions to disconnect the wires for any Screw-type RTB.

RTB Type	Action
Screw	1. Turn the screwdriver counter-clockwise to open the terminal. 2. Remove the wire.
Spring	1. Insert and hold a screwdriver in the right-side terminal. 2. Remove the wire. 3. Pull out the screwdriver.



Connect an EtherNet/IP Network

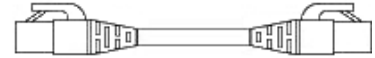
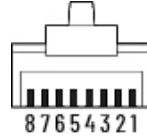
Use an RJ45 straight cable to connect the adapter to an EtherNet/IP network.



WARNING: If you connect or disconnect the communication cable with power that is applied to this module or any device on the network, an electric arc can occur. This arc could cause an explosion in hazardous location installations. Be sure that power is removed or the area is nonhazardous before proceeding.

This warning applies to connections to ports 1 and 2 on both adapters. For more information on where the ports are on the adapter, see [About the Adapters on page 5](#).

1. If needed, wire the RJ45 connector as shown.



Connector Number	Color	1585J 8-pin Cables with Support for 10/100/1000 Mbps	1585J 8-pin Cables with Support for 10/100 Mbps	1585J 4-pin Cables with Support for 10/100 Mbps
1	White/Orange	BI_DA+	TxData +	
2	Orange	BI_DA-	TxData -	
3	White/Green	BI_DB+	Recv Data +	
4	Blue	BI_DC+	Unused	-
5	White/Blue	BI_DC-	Unused	-
6	Green	BI_DB-	Recv Data -	
7	White/Brown	BI_DD+	Unused	-
8	Brown	BI_DD-	Unused	-

2. Connect the RJ45 cable to an Ethernet port on the bottom of the adapter. You can connect two RJ45 cables to the adapter.

Install Compact 5000 I/O Modules

Install all the Compact 5000 I/O modules on the right side of the adapter.

If the end cap is installed on the adapter, you must remove it before you can install the I/O modules.

For more information on how to install Compact 5000 I/O modules, see the installation instructions available with each Compact 5000 I/O module catalog number.

Install the End Cap

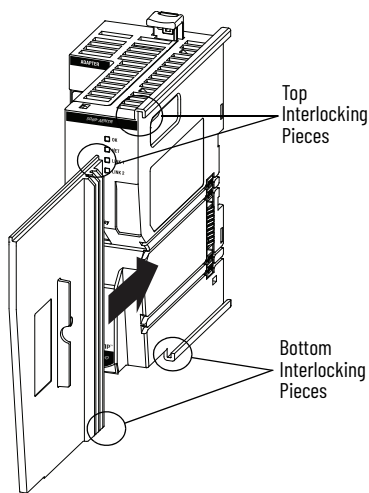
You must install an end cap on the right side of the last module in a Compact 5000 I/O system. The end cap covers the exposed interconnections on the last module in the system. If you do not install the end cap before powering the system, equipment damage or injury from electric shock can result.

If the end cap is not installed and you have installed all required modules in the system, install the end cap.

IMPORTANT You install the end cap after the last module is installed on the DIN rail. This design helps to prevent the end cap from going beyond the locked position.

If you push the end cap beyond the locked position or insert it from the backwards direction, you can damage the MOD power bus and SA power bus connector.

1. Align the end cap with interlocking pieces on the adapter.
2. Push the end cap toward the DIN rail until it locks into place.



Power the System

After you install all the Compact 5000 I/O modules and the end cap, turn on power to the RTBs.

For more information on MOD power and SA power, see [System Power Considerations on page 6](#).

Remove the Adapter



ATTENTION: Do not remove or replace an adapter while power is applied. Interruption of the backplane can result in unintentional operation or machine motion.



WARNING: If you insert or remove the adapter while power is on, an electric arc can occur. This arc could cause an explosion in hazardous location installations. The module does not support RIUP capability. Do not connect or disconnect the adapter while power is applied. Be sure that power is removed before proceeding.

1. Remove external power.

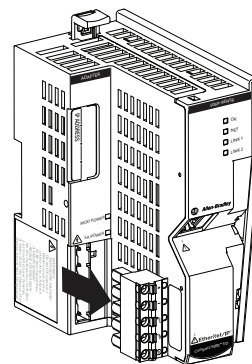
IMPORTANT When you remove MOD power from a Compact 5000 I/O EtherNet/IP adapter, you shut down power to all modules in the Compact 5000 I/O system. That is, all system-side is removed. When you remove SA power from the Compact 5000 I/O EtherNet/IP adapter, all field-side power that is provided by the adapter is removed. If the system uses the SA power that is provided by the 5069-FPD field potential distributor, the system does not lose field-side power to the right of the field potential distributor.

In this case, you must use a separate power source for the SA power RTB on the field potential distributor.

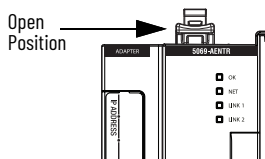
We strongly recommend that you take the appropriate actions to help prevent unintended consequences that can result from a system power shutdown before you remove MOD power or SA power from the adapter or field potential distributor.

Despite the removal of field-side power from SA RTBs on the adapter or field potential distributor, the 5069-OB16 and 5069-OB16F modules continue to receive field-side power from an external power source connected to the LA(+) and LA(-) terminals on the modules.

2. Disconnect wires from the RTBs. For more information, see [Disconnect Wires from the RTB on page 9](#).
3. Hold the top and bottom of the RTB and pull the RTB off the adapter.



4. Remove the Ethernet cable from the adapter.
5. Press the DIN rail latch down until it clicks.



If the DIN rail latches fail to remain in the open position, hold them down.

6. Pull the adapter away from the DIN rail.
7. To replace the adapter, see [Install the Adapter on page 7](#).

Specifications

For a list of all specifications, see the Compact 5000 I/O Modules and EtherNet/IP Adapters Technical Data, publication [5069-TD001](#).

Attribute	5069-AENTR, 5069-AENTRK
Temperature, operating <ul style="list-style-type: none"> 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) 	0 °C ≤ Ta ≤ +60 °C (+32 °F ≤ Ta ≤ +140 °F)
Temperature, surrounding air, max	60 °C (140 °F)
Enclosure type rating	None (open-style)
Voltage and current ratings	
MOD power	220 mA @ 18...32V DC
MOD power inrush	1750 mA for 70 ms
MOD power passthrough	9.78 A @ 18...32V DC
SA power	5 mA @ 0...32V DC 2 mA @ 0...240V AC, 47...63 Hz Ex, 125V AC Max
SA power passthrough	9.95 A @ 0...32V DC 9.975 A @ 0...240V AC, 47...63 Hz Ex, 125V AC Max
Do not exceed 10 A current draw at the MOD power RTB or SA power RTB.	
Isolation voltage	300V (continuous), Basic Insulation Type, SA, and MOD power to Backplane 300V (continuous), Basic Insulation Type, SA to MOD power 300V (continuous), Basic Insulation Type, Ethernet to Backplane Type tested at 1500V AC for 60 s 300V (continuous), Double Insulation Type, Ethernet to MOD power 300V (continuous), Double Insulation Type, Ethernet to SA power Type tested at 4242V DC for 60 s No isolation between Ethernet ports
Recommended external overcurrent protection	MOD power: 10...12A @ 22.5...43.2 A2t, Fast Acting SA power: 20 A @ 250V AC
Wire size	
5069-RTB5-SCREW and 5069-RTB5-SPRING connections	0.25...2.5 mm ² (22...14 AWG) solid or stranded copper wire rated at 105 °C (221 °F), or greater, 1.2 mm (3/64 in.) insulation m, single wire connection only
Grounding	2.5 mm ² (14 AWG) solid or stranded copper wire rated at 105 °C (221 °F), or greater, 3.5 mm (0.14 in.) max diameter including insulation, single wire connection only
Ethernet connections	Ethernet Cabling and Installation according to IEC 61918 and IEC 61784-5-2
Insulation-stripping length	
5069-RTB5-SCREW and 5069-RTB5-SPRING connections	10 mm (0.39 in.)
Terminal block torque specifications	0.5...0.6 N·m (4.4...5.3 lb·in)
North American temp code	T4
UKEX/ATEX temp code	T4
IECEXtemp code	T4

Additional Resources

These documents contain additional information concerning related products from Rockwell Automation.

Resource	Description
Compact 5000 I/O Modules and EtherNet/IP Adapters Technical Data, publication 5069-TD001	Provides specifications and wiring diagrams for Compact 5000 I/O modules and EtherNet/IP adapter.
Compact 5000 EtherNet/IP Adapters User Manual, publication ENET-UM007	Describes how to use the Compact 5000 I/O EtherNet/IP adapters.
Ethernet Design Considerations Reference Manual, publication ENET-RM002	Describes how to use EtherNet/IP adapters with Logix 5000 controllers and communicate with other devices on the EtherNet/IP network.
EtherNet/IP Embedded Switch Technology Application Guide, publication ENET-AP005	Describes how to install, configure, and maintain linear and Device Level Ring (DLR) networks by using Allen-Bradley® EtherNet/IP devices that are equipped with embedded switch technology.
EtherNet/IP Media Planning and Installation Manual Available from the Open DeviceNet® Vendor Association (ODVA) at www.odva.org	Describes how to use the required media components and provides information on how to plan for, install, verify, troubleshoot, and certify your EtherNet/IP network.
System Security Design Guidelines Reference Manual, publication SECURE-RM001	Provides guidance on how to conduct security assessments, implement Rockwell Automation products in a secure system, harden the control system, manage user access, and dispose of equipment.
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.

You can view or download publications at rok.auto/literature.

Rockwell Automation Support

Use these resources to access support information.

Technical Support Center	Find help with how-to videos, FAQs, chat, user forums, Knowledgebase, 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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