Installation Instructions

Original Instructions

Allen-Bradley
by ROCKWELL AUTOMATION

CompactLogix 5380 Controllers

Standard Controller Catalog Numbers	5069-L306ER, 5069-L306ERM, 5069-L310ER, 5069-L310ER-NSE, 5069-L310ERM, 5069-L310ERMK, 5069-L320ER, 5069-L320ERM, 5069-L320ERMK, 5069-L330ER, 5069-L330ERM, 5069-L330ERMK, 5069-L340ER, 5069-L340ERM, 5069-L350ERM, 5069-L350ERMK, 5069-L380ERM, 5069-L3100ERM
Process Controller Catalog Numbers	5069-L320ERP, 5069-L340ERP

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The CompactLogix® 5380 controllers operate in various applications and support local Compact 5000® I/O modules, remote I/O modules, and Integrated Motion over an EtherNet/IP™ network. The controllers offer these features:

- High-speed backplane packet transfer rate
- Embedded dual 1 Gb Ethernet ports
- Multiple programming languages that enable sequential, process, motion, and drive control
- Configuration with the Studio 5000 Logix Designer® application

The CompactLogix Process controllers also provide these features:

- Automatic diagnostics functionality
- Motion support
- Conformal coating for extended protection in harsh, corrosive environments

For more information on how to use the controller after you install it, including safety application requirements, see the publications that are listed in the Additional Resources on page 12.

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
Added wiring diagrams and additional information for the MOD power and SA power RTBs	6, 7, 8
Updated the Temperature, operating specification	11

Rockwell Automation



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、稼動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、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 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 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。

包括安装、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.

OBS! 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, bediend of onderhoudt. Gebruikers moeten zich vertrouwd maken met de installatie en de bedradingsinstructies, 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.
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.	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.
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. • If this product contains batteries, they must only be changed in an area known to be nonhazardous.	**AVERTISSEMENT:** **Risque d'Explosion –** • 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. • S'assurer que l'environnement est classé non dangereux avant de changer les piles.

UK and European Hazardous Location Approval

The following applies to products marked, Ⓔx 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 and Annex II of EU Directive 2014/34/EU. See the UKCA 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 DEMKO 15 ATEX 1455X and UL22UKEX2307X.
- 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 IECExUL15.0007X.
- May have catalog numbers followed by a "K" to indicate a conformal coating option.

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 are 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.

WARNING:

- If you connect or disconnect wiring while the field-side power is on, an electrical arc can occur. This could cause an explosion in hazardous location installations. Be sure that power is removed or the area is nonhazardous before proceeding.
- When you insert or remove the SD memory card while power is on, an electrical arc can occur. This could cause an explosion in hazardous location installations. Be sure that power is removed or the area is nonhazardous before proceeding.
- When you press the reset button while power is on, an electrical arc can occur. This could cause an explosion in hazardous location installations. Be sure that power is removed or the area is nonhazardous before proceeding.
- When you change switch settings while power is on, an electrical arc can occur. This could cause an explosion in hazardous location installations. Be sure that power is removed or the area is nonhazardous before proceeding.
- Do not use the USB port in hazardous locations.

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 value 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.
- 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 controllers on rail.
- The USB port is intended for temporary local programming purposes only and not intended for permanent connection. Do not use the USB port in hazardous locations.

Prevent Electrostatic Discharge

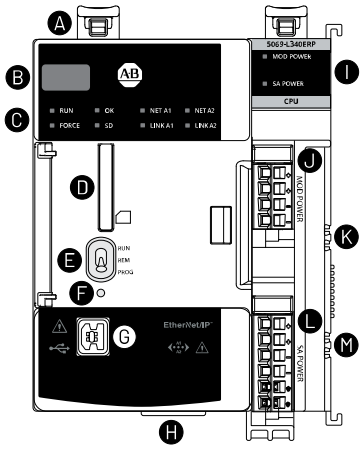
ATTENTION: This equipment is sensitive to electrostatic discharge, which can cause internal damage and affect normal operation. Follow these guidelines when you handle this equipment:
- Touch a grounded object to discharge potential static.
- Wear an approved grounding wriststrap.
- Do not touch connectors 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.

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.
- The USB port is intended for temporary local programming purposes only and not intended for permanent connection. The USB cable is not to exceed 3.0 m (9.84 ft) and must not contain hubs.
- Use only a soft, dry anti-static cloth to wipe down equipment. Do not use any cleaning agents.

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

About the Controller

This graphic identifies the parts of a CompactLogix 5380 controller.

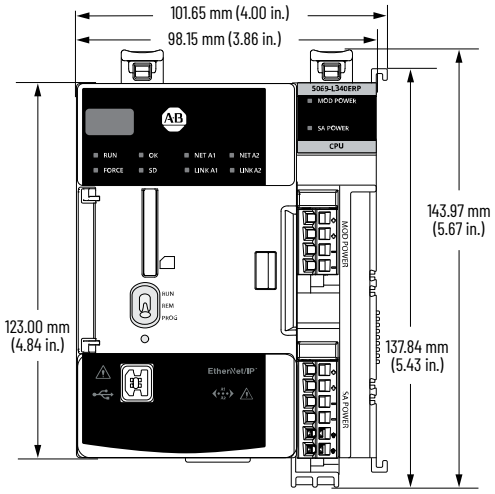


A	DIN rail latches
B	Four-character display
C	Status indicators
D	SD card slot
E	Mode switch
F	Reset button
G	USB port

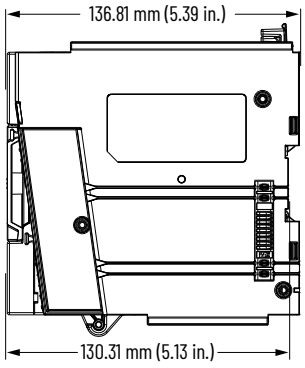
H	Ethernet ports (bottom of controller)
I	MOD and SA power status indicators
J	MOD power RTB
K	MOD power bus connector
L	SA power RTB
M	SA power bus connector

Dimensions

This graphic shows the controller dimensions.



Side View



Before You Begin

Before you install the controller, verify that you have these components.

Component	Description
Removable Terminal Blocks (RTB)	One of the following RTB types for each power type: MOD power (system-side power), 4-pin • 5069-RTB4-SCREW RTB • 5069-RTB4-SPRING RTB SA power (field-side power), 6-pin • 5069-RTB6-SCREW RTB • 5069-RTB6-SPRING RTB **IMPORTANT:** You must order RTBs separately. The RTBs are available in 5069 RTB kits that contain both the 4-pin and 6-pin RTBs. • 5069-RTB64-SCREW kit • 5069-RTB64-SPRING kit 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 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 system. For more information, see System Power Considerations on page 6.
Tools	You use the following tools to wire the RTBs: • 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 steel DIN rail. You can use the EN50022 - 35 x 7.5 mm (1.38 x 0.30 in.) DIN rail.
EtherNet/IP network components	If your controller operates on an EtherNet/IP network, you must install the network and all required components.
Software	You can use the following software with your controller: • BOOTP DHCP EtherNet/IP Commissioning tool, version 3.02.00 or later • Studio 5000 Logix Designer application: – Version 28.00.00 or later - 5069-L320ER, 5069-L340ERM – Version 29.00.00 or later - 5069-L306ER, 5069-L306ERM, 5069-L310ER, 5069-L310ER-NSE, 5069-L310ERM, 5069-L310ERMK, 5069-L320ERM, 5069-L320ERMK, 5069-L330ER, 5069-L330ERM, 5069-L330ERMK, 5069-L340ER – Version 30.00.00 or later - 5069-L350ERM, 5069-L350ERMK, 5069-L380ERM, 5069-L3100ERM – Version 33.00.00 or later - 5069-L320ERP, 5069-L340ERP • RSLinx® Classic software, Version 4.00.00 or later: The minimum version is based on the version of the Logix Designer application that you use with the controller. – Version 3.80.00 or later with Logix Designer application, version 28 – Version 3.81.00 or later with Logix Designer application, version 29.00.00 or later When you install the controller, you use one of these software tools to assign an IP address to the controller. For more information, see Set the Network Internet Protocol (IP) Addresses on page 10.

System Planning

Follow these rules when you plan your system configuration.

- You must mount the DIN rail horizontally.
- The controller is the leftmost component in the system.
- Local Compact 5000 I/O modules are installed to the right of the controller.

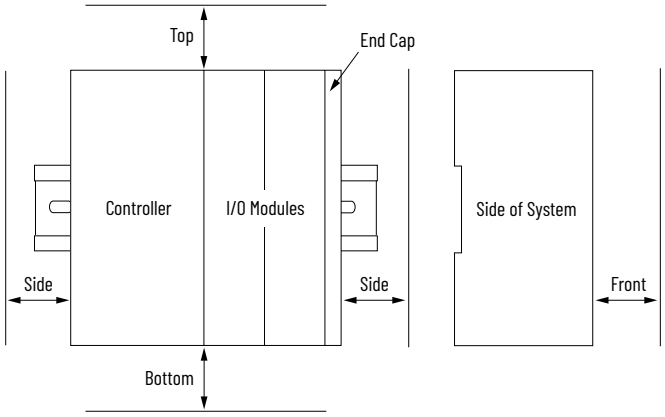
  The number of local I/O modules that are supported varies by controller catalog number.
- Before power-up, make sure that the end cap is installed on the rightmost Compact 5000 I/O module in the system.

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 Requirements

The minimum distance between all sides of the CompactLogix 5380 system and enclosure walls, wireways, and adjacent equipment varies based on the current operating temperature.

- At 55 °C (131 °F): 50.8 mm (2.00 in.)
- At 60 °C (140 °F): 101.6 mm (4.00 in.)



Ground Considerations

Use an EN50022 - 35 x 7.5 mm (1.38 x 0.30 in.) DIN rail to ground the system.

ATTENTION: This product is grounded through the DIN rail to chassis ground. Use zinc-plated chromate-passivated steel DIN rail to ensure 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 the Industrial Automation Wiring and Grounding Guidelines, Rockwell Automation publication 1770-4.1 for more information.

System Power Considerations

The controller provides power to a CompactLogix 5380 system via RTBs that are connected to external power supplies and installed on the controller. The RTBs provide the following power to the system.

Power Type	Description
MOD power	System-side power that is used to operate the CompactLogix 5380 system. MOD power is provided through the MOD power RTB and passed across the MOD power bus. • 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	Field-side power that is used to power field-side devices. Sensor Actuator (SA) power is provided through the SA power RTB and passed across the SA power bus. • The total continuous current draw across the SA power bus must not be more than **10 A, max at 18...32V DC**, or **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. The SA power source must be SELV/PELV. • Confirm that the external SA power supply is the correct type, DC or AC, for the I/O modules in the system. • Use a 5069-FPD field potential distributor to establish additional SA power buses, or change the SA power type in a CompactLogix 5380 system.

IMPORTANT CompactLogix 5380 controllers do not have an embedded power supply that powers the system.

IMPORTANT You can connect power from one external power supply to the MOD power and SA power connects. However, we strongly recommend that you use separate external power supplies for MOD power and SA power respectively.

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.

Install the Controller onto the DIN Rail

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

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

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



3. Position the controller so that the back of it faces the DIN rail.
4. Press the controller against the DIN rail until you hear a click.
   Verify that the controller is latched securely.

Wire External Power Supplies to the Controller

Before you connect MOD power or SA power to the RTBs on the CompactLogix 5380 controller, complete the following tasks:

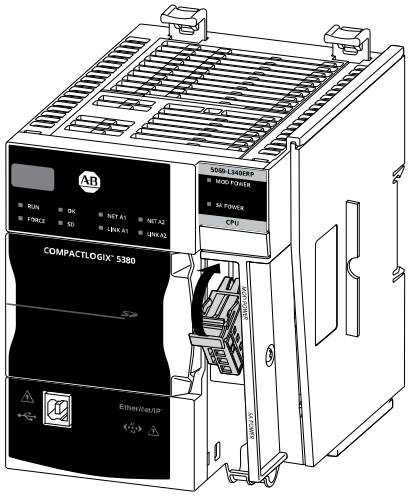
- Read the System Power Considerations on page 6 and verify that the external power supplies that supply MOD power and SA power are adequately sized for your CompactLogix 5380 system.
- Verify that the external power supplies that provide MOD power and SA power are turned off.
- Install the RTBs.

Install the MOD Power 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.

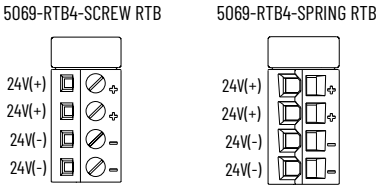
The RTB does not support Removal and Insertion Under Power (RIUP) capability. Do not connect or disconnect the RTB while power is applied. Be sure that power is removed before proceeding.

1. Hook the bottom of the MOD power RTB on the controller.
2. Push the RTB against the controller until you hear a click.



3. Push the RTB handle against the RTB until you hear another click.

MOD Power RTB Wiring Diagram



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 controller to control when the controller is powered. If so, you must install the power control device at the VDC+ terminal on the RTB.

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

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.

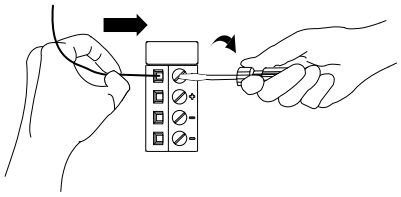
1. Confirm that the external power supply is adequately sized for your system and verify that the MOD and SA power supplies are turned off.
2. Strip the insulation from the wires.

RTB Type	Action
Screw	Strip 12 mm (0.47 in) of insulation from the wires.
Spring	Strip 10 mm (0.39 in) of insulation from the wires.
If necessary, you can crimp an uninsulated wire ferrule onto the stripped wire. Use a ferrule that is the same length as the stripped insulation. Jumpers are not included with the RTBs. Shorts must be made manually.	

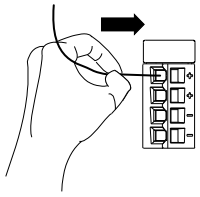
3. Connect the 24V DC(+) wire from the external power supply to the first 24V DC(+) terminal on the RTB.

RTB Type	Action
Screw	1. Insert the wire into the terminal. 2. Turn the screwdriver to close the terminal on the wire. Torque the screw to 0.4 N•m (3.5 lb•in).
Spring	Push the wire into the terminal.

5069-RTB4-SCREW RTB

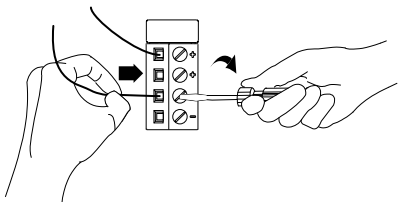


5069-RTB4-SPRING RTB

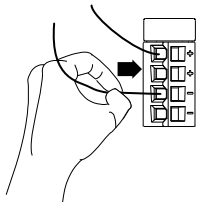


4. Connect the 24V DC(—) wire from the external power supply to the first 24V_DC(—) terminal on the RTB.

5069-RTB4-SCREW RTB



5069-RTB4-SPRING RTB

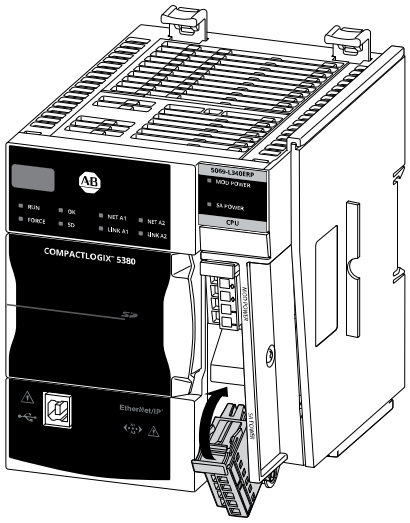


Install the SA Power RTB

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 Removal and Insertion Under Power (RIUP) capability. Do not connect or disconnect the RTB while power is applied. Be sure that power is removed before proceeding.

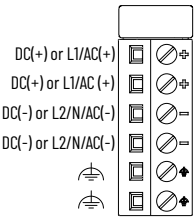
1. Hook the bottom of the SA power RTB on the controller.
2. Push the RTB against the controller until you hear a click.



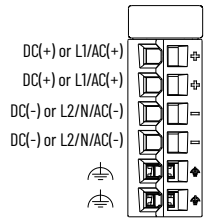
3. Push the RTB handle against the RTB until you hear another click.

SA Power RTB Wiring Diagram

5069-RTB6-SCREW RTB



5069-RTB6-SPRING RTB



Label	Type	Description
DC(+)	DC power	Positive supply
DC(-)		Negative supply return
L1/A(+)	AC power	High side of line power
L2/N/AC(-)		Low side of line power
⏚	Earth Ground	Provides a low impedance path between electrical circuits and the Earth for functional purposes, and provides noise immunity improvement. This connection must be made for functional purposes.

Wire SA DC Power

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.

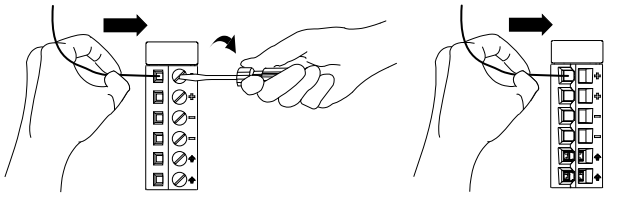
1. Confirm that the external power supply is adequately sized for your system and verify that the MOD and SA power supplies are turned off.
2. Strip the insulation from the wires.

RTB Type	Action
Screw	Strip 12 mm (0.47 in) of insulation from the wires.
Spring	Strip 10 mm (0.39 in) of insulation from the wires.
If necessary, you can crimp an uninsulated wire ferrule onto the stripped wire. Use a ferrule that is the same length as the stripped insulation. Jumpers are not included with the RTBs. Shorts must be made manually.	

3. Connect the DC(+) wire from the external DC power supply to the first DC(+) terminal on the RTB.

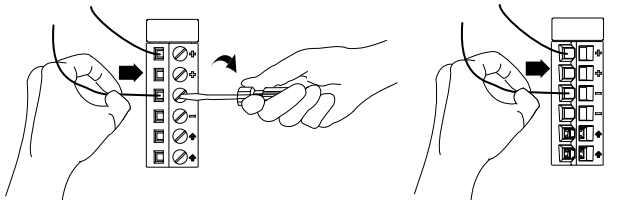
RTB Type	Action
Screw	1. Insert the wire into the terminal. 2. With a screwdriver, torque the screw to 0.4 N•m (3.5 lb•in) to close the terminal on the wire.
Spring	Push the wire into the terminal.

5069-RTB6-SCREW RTB 5069-RTB6-SPRING RTB



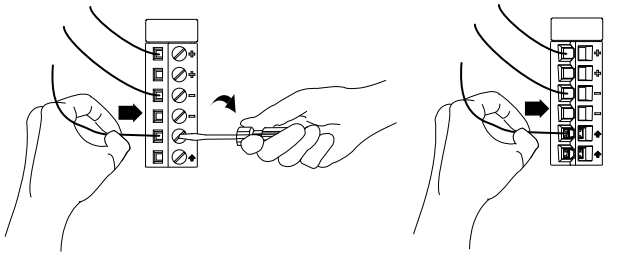
4. Connect the DC(—) wire from the external SA DC power supply to the first DC(—) terminal on the RTB.

5069-RTB6-SCREW RTB 5069-RTB6-SPRING RTB



5. Connect a wire from an Earth Ground location to the first Earth Ground terminal on the RTB. The Earth Ground location can be the external SA power supply, the DIN rail, or another Earth Ground location.

5069-RTB6-SCREW RTB 5069-RTB6-SPRING RTB



Wire SA AC Power

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.

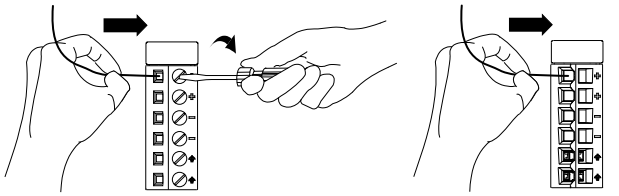
1. Confirm that the external power supply is adequately sized for your system and verify that the MOD and SA power supplies are turned off.
2. Strip insulation from the wires.

RTB Type	Action
Screw	Strip 12 mm (0.47 in) of insulation from the wires.
Spring	Strip 10 mm (0.39 in) of insulation from the wires.
If necessary, you can crimp an uninsulated wire ferrule onto the stripped wire. Use a ferrule that is the same length as the stripped insulation. Jumpers are not included with the RTBs. Shorts must be made manually.	

3. Connect the L1/AC(+) wire from the external SA AC power source to the first L1/AC(+) terminal on the RTB.

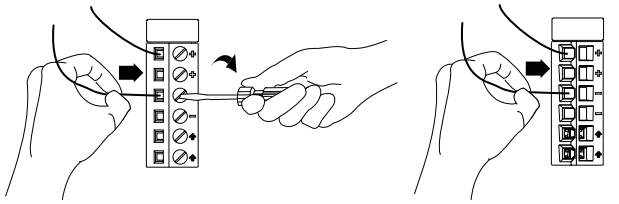
RTB Type	Action
Screw	1. Insert the wire into the terminal. 2. With a screwdriver, torque the screw to 0.4 N•m (3.5 lb•in) to close the terminal on the wire.
Spring	Push the wire into the terminal.

5069-RTB6-SCREW RTB 5069-RTB6-SPRING RTB



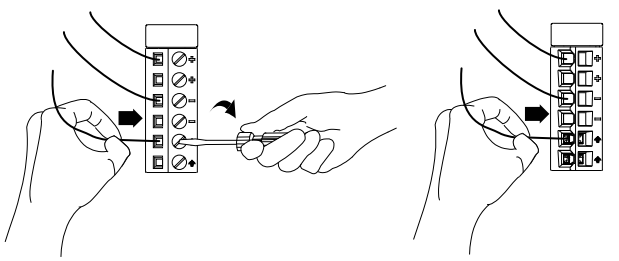
4. Connect the L2/N/AC(—) wire from the external SA AC power source to the first L2/N/AC(-) terminal on the RTB.

5069-RTB6-SCREW RTB 5069-RTB6-SPRING RTB



5. Connect a wire from an Earth Ground location to the first Earth Ground terminal on the RTB. The Earth Ground location can be the external SA power supply, the DIN rail, or another Earth Ground location.

5069-RTB6-SCREW RTB 5069-RTB6-SPRING RTB

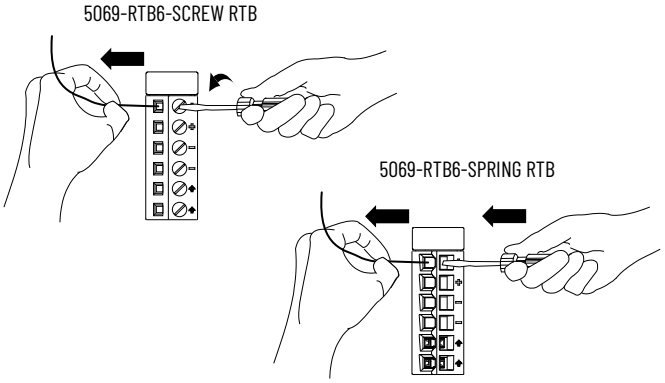


Disconnect Wires from the RTBs

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

To remove wires from any RTB on the controller, complete these steps.

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.



Install Compact 5000 I/O Modules

Complete one of the following:

- If you do not need to install Compact 5000 I/O modules before you turn on power to the controller, proceed to Install the End Cap.
- To install Compact 5000 I/O modules before you turn on power to the controller, start on the right side of the controller.
  Then proceed to Install the End Cap.

  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.

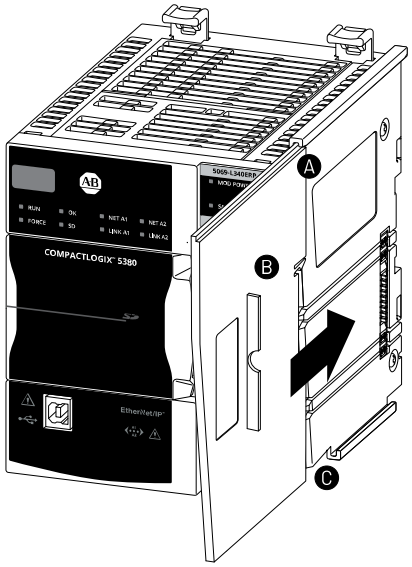
Install the End Cap

You must install an end cap on the right side of the last module in a CompactLogix 5380 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 you do not intend to connect Compact 5000 I/O modules to the controller before you turn on power, install the end cap as described in this section.

If you intend to connect Compact 5000 I/O modules to the controller before you turn on power, do not install the end cap and skip to Wire External Power Supplies to the Controller on page 6.

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



A	Top interlocking pieces
B	End cap
C	Bottom interlocking pieces

Power the System

After the end cap is installed on the last module in the system, turn on power to the MOD power RTB and the SA power RTB.

Set the Network Internet Protocol (IP) Addresses

Out-of-the-box, CompactLogix 5380 controllers are configured to use Dual-IP mode, and each Ethernet port is DHCP-enabled.

Dual-IP mode is available with the Logix Designer application, version 29.00.00 or later that requires a unique IP address for each Ethernet port.

CompactLogix 5380 controllers also support Linear/DLR mode, a mode that requires only one IP address. If necessary, you can use RSLinx Classic software to change the controller from Dual-IP mode to Linear/DLR mode and then set the IP address on the controller.

Use one of these tools to set the IP address:

- BOOTP DHCP EtherNet/IP Commissioning tool, version 3.02.00 or later
- Studio 5000 Logix Designer application, version 31.00.00 or later
- RSLinx Classic software, version 4.00.00 or later

The minimum version of each tool that you can use to set the IP address depends on the controller catalog number. For more information, see Before You Begin on page 5.

IMPORTANT Consider the following:

- The controller does not have rotary switches that you can use to set the address.
- You must connect to the controller via the USB port when you use RSLinx Classic software or the Logix Designer application to assign an IP address.
- To reset the IP address and set the controller to DHCP-enabled, you must perform a Stage 2 Reset. A Stage 2 Reset returns the controller to the out-of-box state.
- The controller supports a Stage 1 Reset and Stage 2 Reset. For more information on Stage 1 and Stage 2 Resets, see the CompactLogix 5380 Controllers User Manual, publication 5069-UM001.

For more information on how to set the IP address for a controller that uses the Dual-IP mode, see the CompactLogix 5380 and Compact GuardLogix 5380 Controllers User Manual, publication 5069-UM001.

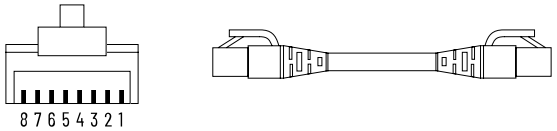
Connect the Controller to an EtherNet/IP Network

IMPORTANT Before you can connect the controller to an EtherNet/IP network, you must first install the network and its components.
This section assumes that the EtherNet/IP network is installed.

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

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

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



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 controller.
You can connect two RJ45 cables to the controller.

Remove or Replace the Controller

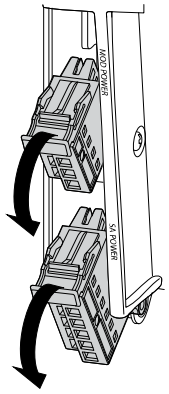
WARNING: If you insert or remove the controller while power is on, an electrical arc can occur. This could cause an explosion in hazardous location installations. The controller does not support Removal and Insertion Under Power (RIUP) capability. Do not connect or disconnect the controller while power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

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

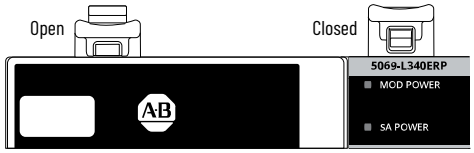
1. Turn off power to the MOD power and the SA power RTBs.

IMPORTANT When you remove MOD power from the controller, you shut down power to all modules in the system. That is, all system-side is removed. When you remove SA power from the controller, all field-side power that is provided by the controller is removed. If the system uses the SA power that is provided by a 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.
Before removing MOD power or SA power from the system, we strongly recommend that you take the appropriate actions to help prevent unintended consequences that can result from a system power shutdown.
Despite the removal of power from SA RTBs on the controller or field potential distributor, the 5069-OB16 and 5069-OB16F modules continue to receive field-side power. The modules receive power from an external power source that is connected to the LA (+) and LA (–) module terminals.

2. Disconnect wires from the RTBs.
   For more information, see Disconnect Wires from the RTBs on page 9.
3. Pull the RTB handles to remove the MOD power RTB and SA power RTB.



4. Remove the Ethernet cable from the controller.
5. Push down on the front of the DIN rail latches.
   A click indicates that the DIN rail latches are open.



   If the DIN rail latches do not remain in the open position, hold them down.
6. Pull the controller away from the DIN rail.
7. To replace the controller, see Install the Controller onto the DIN Rail on page 6.
8. Apply MOD power and, if necessary, SA power to the system.

Specifications

This table lists a subset of controller specifications. For a complete list of specifications, see the CompactLogix 5380 and Compact GuardLogix 5380 Controllers Technical Data, publication 5069-TD002.

Attribute	Specification
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)	0 °C ≤ Ta ≤ +60 °C (+32 °F ≤ Ta ≤ +140 °F)
Temperature, surrounding air, max	60 °C (140 °F)
Enclosure Type rating	None (open-style)
MOD power bus	
Voltage range	18…32V DC
Current, max	450 mA
Inrush	850 mA for 125 ms
Passthrough(1) voltage range	9.55 A @ 18…32V DC
Current rating, max	10 A (Do not exceed 10 A current draw at the MOD power RTB).
SA field power	
Voltage ranges(2)	0…32V DC 0…240V AC, 47…63 Hz EX, 125V AC max
Current, max	10 mA (DC power), 25 mA (AC power)
Passthrough(1)	9.95 A @ 0…32V DC 9.975 A @ 0…240V AC, 47…63 Hz EX, 125V AC max
Current rating, max	10 A (Do not exceed 10 A current draw at the 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 300V (continuous), Double Insulation Type, Ethernet to MOD power 300V (continuous), Double Insulation Type, Ethernet to SA power 50V (continuous), Functional Insulation Type, Ethernet to USB 300V (continuous), Basic Insulation Type, USB to backplane 300V (continuous), Double Insulation Type, USB to MOD power 300V (continuous), Double Insulation Type, USB to SA power No isolation between Ethernet ports Type tested at 1500V AC for 60 s
Wire type	
Screw-type RTB connections	0.5…1.5 mm^2 (22…16 AWG) solid or stranded copper wire that is rated at 105 °C (221 °F), or greater, 3.5 mm (0.14 in.) max diameter including insulation, single wire connection only
Spring-type RTB connections	0.5…1.5 mm^2 (22…16 AWG) solid or stranded copper wire that is rated at 105 °C (221 °F), or greater, 2.9 mm (0.11 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	
Screw-type RTB connections	12 mm (0.47 in.)
Spring-type RTB connections	10 mm (0.39 in.)
Terminal block torque	
Screw-type RTB connections	0.4 N•m (3.5 lb•in)
Spring-type RTB connections	–
North American temperature code	T4
UKEX/ATEX temperature code	T4
IECEx temperature code	T4

(1) Maximum level of MOD or SA power current that the controller can pass through to the next module in the system. The specific level of current passed through varies based on system configuration.
(2) SA power specifications are based on the number and type of Compact 5000 I/O modules that are used in the system. If the set of I/O modules that are used in the system require AC and DC voltages, you must install a 5069-FPD field potential distributor to separate the module types.

Additional Resources

These resources contain information about related products from Rockwell Automation.

Resource	Description
CompactLogix 5380 and Compact GuardLogix 5380 Controllers Technical Data, publication 5069-TD002	Provides specifications and other technical data for CompactLogix 5380 and Compact GuardLogix® 5380 controllers.
CompactLogix 5380 and Compact GuardLogix 5380 Controllers User Manual, publication 5069-UM001	Describes how to configure, operate, and monitor CompactLogix 5380 and Compact GuardLogix 5380 controllers.
Replacement Guidelines: Logix 5000® Controllers Reference Manual, publication 1756-RM100	Provides guidelines to consider when you replace the following: ControlLogix® 5560/5570 controller with a Controller 5580 controller CompactLogix 5370 controller with a CompactLogix 5380 controller
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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