



PointMax I/O System

Bulletin 5034



Allen-Bradley

by ROCKWELL AUTOMATION

Installation Instructions

Original Instructions

Important User Information

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.

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

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

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



WARNING: Identifies information about practices or circumstances that can cause an explosion in a hazardous environment, which may lead to personal injury or death, property damage, or economic loss.



ATTENTION: Identifies information about practices or circumstances that can lead to personal injury or death, property damage, or economic loss. Attentions help you identify a hazard, avoid a hazard, and recognize the consequence.

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

These labels may also be on or inside the equipment to provide specific precautions.



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



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



ARC FLASH HAZARD: Labels may be on or inside the equipment, for example, a motor control center, to alert people to potential Arc Flash. Arc Flash will cause severe injury or death. Wear proper Personal Protective Equipment (PPE). Follow ALL Regulatory requirements for safe work practices and for Personal Protective Equipment (PPE).

The following icon may appear in the text of this document.



Identifies information that is useful and can help to make a process easier to do or easier to understand.

Rockwell Automation recognizes that some of the terms that are currently used in our industry and in this publication are not in alignment with the movement toward inclusive language in technology. We are proactively collaborating with industry peers to find alternatives to such terms and making changes to our products and content. Please excuse the use of such terms in our content while we implement these changes.

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Preface

About This Publication

This publication describes how to install a PointMax™ EtherNet/IP™ adapter, mounting bases, I/O modules, removable terminal blocks, and accessories on a DIN rail.

Summary of Changes

This publication contains the following new or updated information. This list includes substantive updates only and is not intended to reflect all changes. Translated versions are not always available for each revision.

Topic	Page
Added information for new catalogs 5034-IA8, 5034-IA8XT, 5034-OA4, 5034-OA4XT, 5034-STEPD, and 5034-STEPDXT.	<ul style="list-style-type: none"> General Precautions on page 9 PointMax I/O System Components on page 15 RTB Keying on page 27
Updated list of publication references in the table.	Additional Resources on page 5
Updated list of catalogs in the table.	Catalog Numbers on page 8
Added reference to supported controllers.	Lay Out the PointMax I/O System on page 28
Added diagram for grounding and isolation.	Ground Considerations on page 31
Added diagrams for power distribution and details on Local Actuator (LA) Power.	System Power Consideration on page 32
Added step to apply a label to the mounting base.	Install Mounting Bases on page 39
<ul style="list-style-type: none"> Added table for Local Actuator Power Status Indicator. Updated tables for I/O Channel Status Indicators. 	I/O Modules Status Indicators on page 58

Download Firmware, AOP, EDS, and Other Files

You can download firmware, associated files (such as AOP, EDS, and DTM), and access product release notes from the Product Compatibility and Download Center at rok.auto/pcdc.

Additional Resources

These documents contain additional information concerning related products from Rockwell Automation. You can view or download publications at rok.auto/literature.

Table 1. Additional Resources

Resources	Description
PointMax I/O System Specifications Technical Data, publication 5034-TD001	Provides PointMax I/O system specifications.
PointMax I/O System Installation Instructions, publication 5034-IN001	Provides instructions on installing a complete PointMax I/O system.

Table 1. Additional Resources (continued)

Resources	Description
PointMax EtherNet/IP Adapter User Manual, publication 5034-UM001	Provides information on how to configure and operate PointMax EtherNet/IP adapters.
PointMax Digital I/O Modules User Manual, publication 5034-UM002	Provides information on how to configure and operate PointMax digital I/O modules.
PointMax Analog I/O Modules User Manual, publication 5034-UM003	Provides information on how to configure and operate PointMax analog I/O modules.
PointMax 4-Channel IO-Link Master Module User Manual, publication 5034-UM004	Provides information on how to configure and operate the PointMax IO-Link master module.
PointMax Serial Module User Manual, publication 5034-UM005	Provides information on how to configure and operate the PointMax serial module.
PointMax High-speed Counter/SSI Encoder Module User Manual, publication 5034-UM006	Provides information on how to configure and operate the PointMax high-speed counter/SSI encoder module.
PointMax Analog HART I/O Modules User Manual, publication 5034-UM007	Provides information on how to configure and operate the PointMax analog HART I/O modules.
PointMax Dual Stepper Drive Module User Manual, publication 5034-UM008	Provides information on how to configure and operate the PointMax dual stepper drive module.
CompactLogix 5390 Controllers Selection and Specifications Technical Data, publication 5034-TD900	Provides specifications for CompactLogix® 5390 controllers. PointMax I/O modules works as the local or remote I/O for CompactLogix 5390 controller, using Studio 5000 Logix Designer® application version 39 or later.
EtherNet/IP Network Devices User Manual, publication ENET-UM006	Describes how to configure and use EtherNet/IP devices to communicate on the EtherNet/IP network.
Ethernet Reference Manual, publication ENET-RM002	Describes basic Ethernet concepts, infrastructure components, and infrastructure features.
E-stop, Safety Mat, and Manual Reset Via a Safety-enabled Controller Application Techniques, publication SAFETY-AT208	Describes how to wire, configure, and program an 800F E-stop, 440F safety mat, 800F reset push button, and 100S-C contactors to a ControlLogix® safety-enabled controller with PointMax safety I/O modules.
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.
Safety Guidelines for the Application, Installation, and Maintenance of Solid-state Control, publication SGI-1.1	Designed to harmonize with NEMA Standards Publication No. ICS 1.1-1987 and provides general guidelines for the application, installation, and maintenance of solid-state control in the form of individual devices or packaged assemblies incorporating solid-state components.
Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1	Provides general guidelines for installing a Rockwell Automation industrial system.
Product Selection and Configuration tools website, rok.auto/systemtools	Helps configure complete, valid catalog numbers and build complete quotes based on detailed product information.

Table 1. Additional Resources (continued)

Resources	Description
Product Certifications website, rok.auto/certifications	Provides declarations of conformity, certificates, and other certification details.

Catalog Numbers

This publication is applicable to these modules and accessories:

EtherNet/IP Adapter	5034-AENTR, 5034-AENTRXT
Mounting Base	5034-MB, 5034-MBXT, 5034-MBSA, 5034-MBSAXT
Digital I/O Module	5034-IA8, 5034-IA8XT, 5034-IB16, 5034-IB16XT, 5034-IB8, 5034-IB8XT, 5034-OA4, 5034-OA4XT, 5034-OB16, 5034-OB16XT, 5034-OB8, 5034-OB8XT, 5034-OB4, 5034-OB4XT, 5034-OW4I, 5034-OW4IXT, 5034-UB8, 5034-UB8XT, 5034-UB8F, 5034-UB8FXT
Safety Digital I/O Module	5034-IB8S, 5034-IB8SXT, 5034-OB8S, 5034-OB8SXT
Analog I/O Module	5034-IF8C, 5034-IF8CXT, 5034-IF8V, 5034-IF8VXT, 5034-IF4, 5034-IF4XT, 5034-IRT4I, 5034-IRT4IXT, 5034-OF4, 5034-OF4XT, 5034-IF4IH, 5034-IF4IHXT, 5034-OF4IH, 5034-OF4IHXT
Specialty I/O Module	5034-ENC, 5034-ENCXT, 5034-IOL4, 5034-IOL4XT, 5034-SERIAL, 5034-SERIALXT, 5034-STEPD, 5034-STEPDXT
Expansion Power	5034-EXP, 5034-EXPXT
Potential Terminal Module	5034-MBPTM, 5034-MBPTMXT
Removable Terminal Block for Modules	5034-RTB18, 5034-RTB18S, 5034-RTB24S, 5034-RTBT, 5034-RTBTS
Removable Terminal Block Accessories	5034-AENRTB-QTY5, 5034-AENRTBS-QTY5, 5034-RTB2-QTY5, 5034-RTB2S-QTY5
Accessories	5034-SHIELD-QTY5, 5034-ECR-QTY5, 5034-WIREHLD-QTY5, 5034-CM18-IB16-QTY5, 5034-CM18-OB16-QTY5, 5034-CM18-IB8-QTY5, 5034-CM18-IB8S-QTY5, 5034-CM18-OB8-QTY5, 5034-CM18-OB4-QTY5, 5034-CM18-UB8-QTY5, 5034-CM18-IF4IH-QTY5, 5034-CM18-OF4IH-QTY5, 5034-CM18-IF4-QTY5, 5034-CM18-OF4-QTY5, 5034-CM18-IF8C-QTY5, 5034-CM18-IF8V-QTY5, 5034-CM18-IRT4I-QTY5, 5034-CM18-OW4I-QTY5, 5034-CM18-IOL4-QTY5, 5034-CM18-SERIAL-QTY5, 5034-CM18-ENC-QTY5, 5034-CM18-MBPTM-QTY5, 5034-CM18-IA8-QTY5, 5034-CM18-OA4-QTY5, 5034-CM18-STEPD-QTY5, 5034-CM24-IF8-QTY5, 5034-CM24-IB8-QTY5, 5034-CM24-UB8-QTY5, 5034-KEY-QTY5, 5034-N

General Precautions



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、投運、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、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.

DIKKAT: 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 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 oprowadowania, 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, konfigurerings 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 onderhoud. 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.

**ATTENTION: Environment and Enclosure**

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 designated and 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 help 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 Standard 250 and EN/IEC 60529, as applicable, for explanations of the degrees of protection provided by enclosures.
-

**ATTENTION: Prevent Electrostatic Discharge**

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: 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 the Industrial Automation Wiring and Grounding Guidelines, Rockwell Automation publication [1770-4.1](#), for more information.

Electrical Safety Considerations



ATTENTION: 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)
 - PELV source approved to EN/IEC60950-1, EN/IEC61010-2-201 or EN/IEC62368-1 (ES1)
 - All wiring must comply with applicable electrical installation requirements [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 2 conductors on any terminal.
 - 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 -25...+60 °C (-13...+140 °F) for horizontal orientation and -25...+55 °C (-13...+131 °F) for other orientations. 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.
-



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

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 Annex II of EU Directive 2014/34/EU and Schedule 1 of the UKEX Regulation 2016 No.1107. See the UKEx and EU Declaration of Conformity at rok.auto/certifications for details.
 - The type of protection is <Ex ec nC IIC T4 Gc> for 5034-0W4I and <Ex ec IIC T4 Gc> for other 5034 PointMax I/O modules according to EN IEC 60079-0, EN IEC 60079-7, and EN IEC 60079-15.
 - Comply with standards EN IEC 60079-0:2018+A1:2024, Explosive Atmospheres - Part 0: Equipment - General Requirements, Issue Date 07/2018, EN IEC 60079-7:2015+A1:2018 Explosive atmospheres. Equipment protection by increased safety "e" and EN IEC 60079-15:2019 Explosive atmospheres, Equipment by type protection "n", reference certificate number <UL24UKEX2997X> and <UL 24 ATEX 3272X>.
 - 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 an "XT" 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 nC IIC T4 Gc> for 5034-0W4I and <Ex ec IIC T4 Gc> for other 5034 PointMax I/O modules according to IEC 60079-0, IEC 60079-7, and IEC 60079-15.
 - Comply with 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" and IEC 60079-15, 5.0 Edition revision date 2017, Explosive atmospheres - Part 15: Equipment by type protection "n", reference IECEx certificate number <IECEx UL 24.0066X>.
 - May have catalog numbers followed by an "XT" to indicate a conformal coating option.
-



WARNING: Special Conditions for Safe Use:

- This equipment is not resistant to sunlight or other sources of UV radiation.
 - This equipment shall be mounted in an UKEX/ATEX/IECEx Zone 2 certified enclosure with a minimum ingress protection rating of at least IP54 (in accordance with EN/IEC 60079-0) and used in an environment of not more than Pollution Degree 2 (as defined in EN/IEC 60664-1) when applied in Zone 2 environments. The enclosure must be accessible only by the use of a tool.
 - This equipment shall be used within its specified ratings defined by Rockwell Automation.
 - Transient protection shall be provided that is set at a level not exceeding 140% of the peak-rated voltage at the supply terminals to the equipment.
 - The instructions in the user manual shall be observed.
 - This equipment must be used only with UKEX/ATEX/IECEx certified Rockwell Automation backplanes.
 - 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 the DIN rail.
 - The installer shall ensure that the service temperature of the suitably certified enclosure and the "maximum ambient" temperature of the module when installed is not exceeded.
-



WARNING: When you insert or remove the module while backplane power is on, an electric arc can occur. This could cause an explosion in hazardous location installations.

Be sure that power is removed or the area is nonhazardous before proceeding. Repeated electric arcing causes excessive wear to contacts on both the module and its mating connector. Worn contacts may create electrical resistance that can affect module operation.



WARNING: If you connect or disconnect the removable terminal block (RTB) with power applied, an electric arc can occur. This could cause an explosion in hazardous location installations.

Do not connect or disconnect the RTB while power is applied. Be sure that power is removed before proceeding.



WARNING: If you connect or disconnect the communications cable with power applied to this module or any device on the network, an electric arc can occur. This could cause an explosion in hazardous location installations.

Be sure that power is removed or the area is nonhazardous before proceeding.



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

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>
<div data-bbox="136 1096 237 1188" data-label="Image"> </div> <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. If this product contains batteries, they must only be changed in an area known to be nonhazardous. 	<div data-bbox="831 1129 932 1222" data-label="Image"> </div> <p>WARNING: 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. S'assurer que l'environnement est classé non dangereux avant de changer les piles.

For 5034-AENTR and 5034-AENTRXT

**ATTENTION: US FCC Approval**

This device complies with part 15 of the FCC Rules

Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by manufacturer could void the user's authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

**ATTENTION: 微功率短距离设备声明:**

使用微功率短距离无线电发射设备应当符合国家无线电管理有关规定。

1. 符合“微功率短距离无线电发射设备目录和技术要求”中通用微功率设备 C 类设备技术要求，用于数据通信应用。采用内置天线。控制、开关等信息等请参考PointMax™ EtherNet/IP™ Adapter 使用手册。
 2. 不得擅自改变使用场景或使用条件、扩大发射频率范围、加大发射功率（包括额外加装射频功率放大器），不得擅自更改发射天线；
 3. 不得对其他合法的无线电台（站）产生有害干扰，也不得提出免受有害干扰保护；
 4. 应当承受辐射射频能量的工业、科学及医疗（ISM）应用设备的干扰或其他合法的无线电台（站）干扰；
 5. 如对其他合法的无线电台（站）产生有害干扰时，应立即停止使用，并采取措施消除干扰后方可继续使用；
 6. 在航空器内和依据法律法规、国家有关规定、标准划设的射电天文台、气象雷达站、卫星地球站（含测控、测距、接收、导航站）等军民用无线电台（站）、机场等的电磁环境保护区域内使用微功率设备，应当遵守电磁环境保护及相关行业主管部门的规定；
 7. 禁止在以机场跑道中心点为圆心，半径5000米的区域内使用各类模型遥控器
 8. 微功率设备使用时温度和电压的环境条件与PointMax™ EtherNet/IP™ Adapter 相同。
-

For 5034-0W4I and 5034-0W4IXT

**ATTENTION:**

- When using 240V power to a relay, you must connect a snubber across the load. Failure to connect a snubber across the load (relay contacts) can result in generation of electromagnetic noise, which could disrupt nearby electrical equipment, including your PointMax I/O system. Use Allen-Bradley® part number 599-KA04 or 1401-NX1.
 - When hazardous voltage is present, before removing the RTB or inserting/removing any wires from the RTB, verify the following:
 - Power to the RTB is removed.
 - No wires are exposed on the RTB.
-

For 5034-IA8, 5034-IA8XT, 5034-0A4, and 5034-0A4XT

**ATTENTION:**

- Before performing Removal and Insertion Under Power (RIUP) on the I/O module, verify that LA power to the module is turned off.
 - Before inserting or removing any wires from the removable terminal block (RTB), verify that:
 - LA power is turned off.
 - No wires are exposed on the RTB.
 - When hazardous voltage 110...240V is present, 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.
-

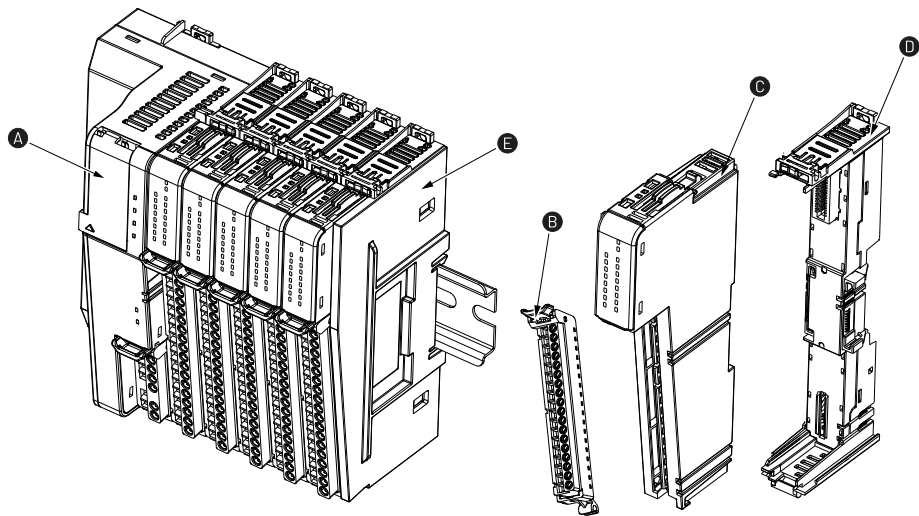
For 5034-STEPD and 5034-STEPDXT

When wiring the 5034-STEPD and 5034-STEPDXT modules, follow these guidelines:

- The unshielded core wire length from the shield termination point to the module terminal should be kept as short as possible.
 - The maximum cable length for motor drive output to the motor is 10 m (33 ft).
 - For motor current of 1 A or greater, use a 1.5 mm² (16 AWG) cable.
-

PointMax I/O System Overview

The PointMax I/O system contains the components pictured below.



Item	Component Name	Description
A	Adapter	The adapter transfers data between the I/O module and the controller.
B	Removable Terminal Block (RTB)	The RTB contains terminals to terminate wiring for field devices. Also it has interfaces to establish the connection between the RTB and the I/O module.
C	I/O module	The I/O module contains the SA or field power interface and circuitry needed to perform specific functions related to your application.
D	Mounting Base (MB)	The MB contains mechanical and electrical interfaces to establish the connection between I/O module and the backplane.
E	End cap	It is a dust protection cap for the last module in a rack.

PointMax I/O System Components

The tables show the components that you use to install a PointMax I/O system. You can order the components individually. Accessories are listed in [Table 11: PointMax I/O System Components – Accessories on page 25](#).

Table 2. PointMax I/O System Components – Adapter

Catalog Number	Component Type	Description	
5034-AENTR 5034-AENTRXT	EtherNet/IP adapter	<p>EtherNet/IP RJ45 Adapter</p> <p>Facilitates communication between the PointMax I/O and other devices across an EtherNet/IP network.</p> <p>The adapter comes with an RTB and an end cap installed.</p> <p>You can order additional screw-type (5034-AENRTB-QTY5) and push-in spring-type (5034-AENRTBS-QTY5) RTBs separately.</p>	

Table 3. PointMax I/O System Component – Mounting Bases

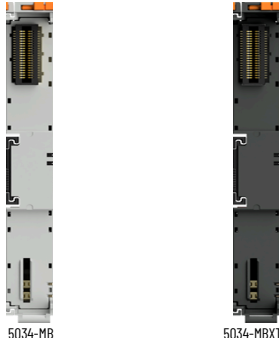
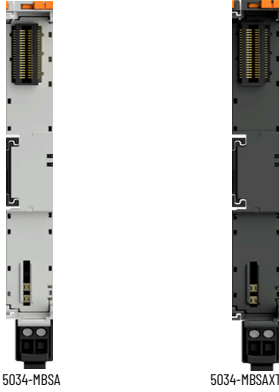
Catalog Number	Component Type	Description	
5034-MB 5034-MBXT	Mounting base	<p>Mounting base - 15 mm (0.59 in.)</p>	
5034-MBSA 5034-MBSAXT	Mounting base	<p>Mounting base - 15 mm (0.59 in.) with SA power</p> <p>The mounting base comes with an RTB.</p> <p>You can order screw-type (5034-RTB2-QTY5) and push-in spring-type (5034-RTB2S-QTY5) separately.</p>	

Table 4. PointMax I/O System Components – Digital I/O Modules

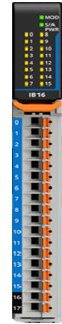
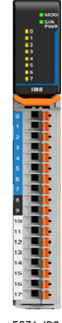
Catalog Number	Component Type	Description		
5034-IA8 5034-IA8XT	Digital input	Digital 8 input AC		
5034-IB16 5034-IB16XT	Digital input	Digital 16 input		
5034-IB8 5034-IB8XT	Digital input	Digital 8 input		
5034-OA4 5034-OA4XT	Digital output	Digital 4 output AC/DC		

Table 4. PointMax I/O System Components – Digital I/O Modules (continued)

Catalog Number	Component Type	Description		
5034-OB16 5034-OB16XT	Digital output	Digital 16 output		
5034-OB8 5034-OB8XT	Digital output	Digital 8 output		
5034-OB4 5034-OB4XT	Digital output	Digital 4 output 2 A		
5034-OW4I 5034-OW4IXT	Digital output	Relay 4 output isolated 2 A		

Table 4. PointMax I/O System Components – Digital I/O Modules (continued)

Catalog Number	Component Type	Description		
5034-UB8 5034-UB8XT	Digital configurable input/output	Digital 8 input/output		
5034-UB8F 5034-UB8FXT	Digital configurable input/output	Fast digital 8 input/output		

Table 5. PointMax I/O System Components – Safety Digital I/O Modules

Catalog Number	Component Type	Description		
5034-IB8S 5034-IB8SXT	Safety digital input	Safety digital 8 input		

Table 5. PointMax I/O System Components – Safety Digital I/O Modules (continued)

Catalog Number	Component Type	Description	
5034-OB8S 5034-OB8SXT	Safety digital output	Safety digital 8 output	 5034-OB8S 5034-OB8SXT

Table 6. PointMax I/O System Components – Analog I/O Modules

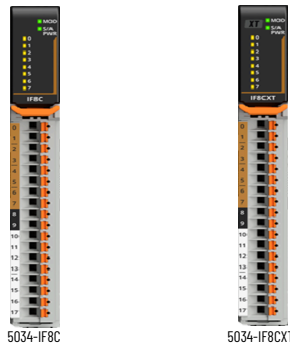
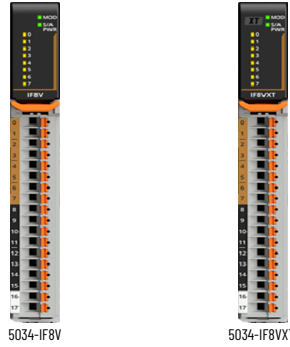
Catalog Number	Component Type	Description	
5034-IF8C 5034-IF8CXT	Analog input	Analog 8 input current	 5034-IF8C 5034-IF8CXT
5034-IF8V 5034-IF8VXT	Analog input	Analog 8 input voltage	 5034-IF8V 5034-IF8VXT

Table 6. PointMax I/O System Components – Analog I/O Modules (continued)

Catalog Number	Component Type	Description		
5034-IF4 5034-IF4XT	Analog input	Analog 4 input		
5034-IRT4I 5034-IRT4IXT	Analog input	Analog 4 input isolated RTD/TC		
5034-OF4 5034-OF4XT	Analog output	Analog 4 output		
5034-IF4IH 5034-IF4IHXT	Analog input	Analog 4 input isolated HART		

Table 6. PointMax I/O System Components – Analog I/O Modules (continued)

Catalog Number	Component Type	Description		
5034-OF4IH 5034-OF4IHXT	Analog output	Analog 4 output isolated HART		

Table 7. PointMax I/O System Components – Specialty I/O Module

Catalog Number	Component Type	Description		
5034-IOL4 5034-IOL4XT	Specialty I/O	IO-Link master 4-channel		
5034-SERIAL 5034-SERIALXT	Specialty I/O	Serial RS-232/RS-422/RS-485 1 channel		

Table 7. PointMax I/O System Components – Specialty I/O Module (continued)

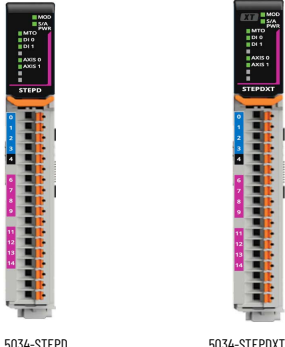
Catalog Number	Component Type	Description	
5034-ENC 5034-ENCXT	Specialty I/O	HSC/SSI encoder 1 channel	 5034-ENC5034-ENCXT
5034-STEPD 5034-STEPDXT	Specialty I/O	Dual stepper drive	 5034-STEPD5034-STEPDXT

Table 8. PointMax I/O System Component – Expansion Power

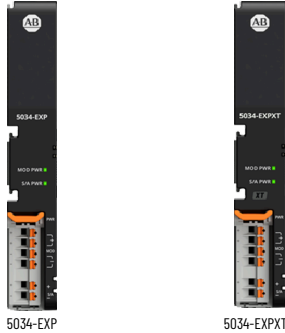
Catalog Number	Component Type	Description	
5034-EXP 5034-EXPXT	Expansion power	Expansion power MOD and SA An RTB ships with the expansion power. You can order spare screw-type (5034-AENRTB-QTY5) and push-in spring-type (5034-AENRTBS-QTY5) separately.	 5034-EXP5034-EXPXT

Table 9. PointMax I/O System Component – Power Terminal Module

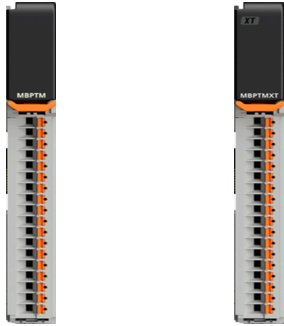
Catalog Number	Component Type	Description	
5034-MBPTM 5034-MBPTMXT	Terminal module	Power terminal module with base	

Table 10. PointMax I/O System Components – Removable Terminal Blocks

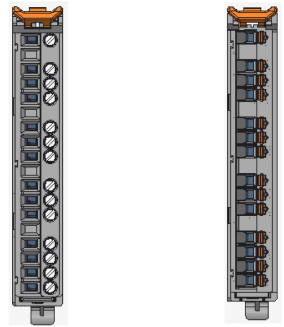
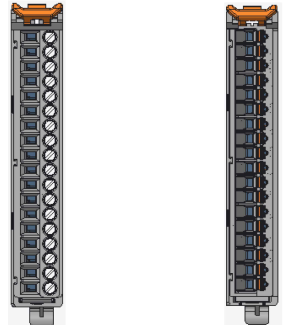
Catalog Number	Component Type	Description	
5034-RTBT 5034-RTBTS	Removable terminal block	Removable terminal block with CJC 18-terminals – screw type Removable terminal block with CJC 18-terminals – push-in spring type	
5034-RTB18 5034-RTB18S	Removable terminal block	Removable terminal block 18-terminals – screw type Removable terminal block 18-terminals – push-in spring type	

Table 10. PointMax I/O System Components – Removable Terminal Blocks (continued)

Catalog Number	Component Type	Description	
5034-RTB24S	Removable terminal block	Removable terminal block 24-terminals – push-in spring type	 5034-RTB24S

Table 11. PointMax I/O System Components – Accessories

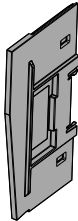
Catalog Number	Component Type	Description	
5034-ECR	Accessory	I/O system end caps are available in pack of 5.	 5034-ECR
5034-KEY	Accessory	RTB insertable keys are available in packs of 5.	 5034-KEY
5034-N	Accessory	Filler module. The blank cover has no electronics. It is used to fill an empty slot.	 5034-N

Table 11. PointMax I/O System Components – Accessories (continued)

Catalog Number	Component Type	Description	
5034-SHIELD-QTY5	Accessory	1-wire shield clamps are available in packs of 5	 5034-SHIELD-QTY5
5034-WIREHLD-QTY5	Accessory	Wire or cable holder are available in packs of 5	 5034-WIREHLD-QTY5
5034-RTB2-QTY5 5034-RTB2S-QTY5	Accessory	2-pin screw or push-in spring RTB available in packs of 5	 5034-RTB2-QTY5  5034-RTB2S-QTY5
5034-AENRTB-QTY5 5034-AENRTBS-QTY5	Accessory	6-pin screw or push-in spring RTB available in packs of 5	 5034-AENRTB-QTY5  5034-AENRTBS-QTY5

RTB Keying

PointMax I/O systems support RTB keying. RTB keying reduces the risk of installing the wrong replacement RTB on an I/O module.

Each module has 3 keys.

Figure 1. RTB Key Positions

I/O Module	Slot 1	Slot 2	Slot 3	Slot 4	Slot 5	Slot 6	Slot 7	Slot 8	Slot 9	Slot 10	Slot 11	Slot 12	Slot 13	Slot 14	Slot 15
For modules compatible with 5034-RTB18, 5034-RTB18S, or 5034-RTB24S															
5034-IB8															
5034-UB8/5034-UB8F															
5034-IF8C															
5034-IF8V															
For modules compatible with 5034-RTB18, or 5034-RTB18S															
5034-IB16															
5034-OB16/5034-OB8															
5034-OB4															
5034-OF4															
5034-IF4															
5034-IF4IH/5034-OF4IH															
5034-IRT4I															
5034-IOL4															
5034-ENC															
5034-SERIAL															
5034-MBPTM															
5034-STEPD															
5034-IB8S															
5034-OB8S															
5034-IA8															
5034-OA4															
5034-OW4I															

Legend:

= Empty slot

= Insert key into this slot

Plan the PointMax I/O System

Lay Out the PointMax I/O System

The PointMax I/O architecture provides a wide range of input and output modules to span many applications, such as machine, hybrid, and process control. The architecture uses Producer/Consumer technology that allows input information and output status to be shared among multiple Logix 5000® controllers.

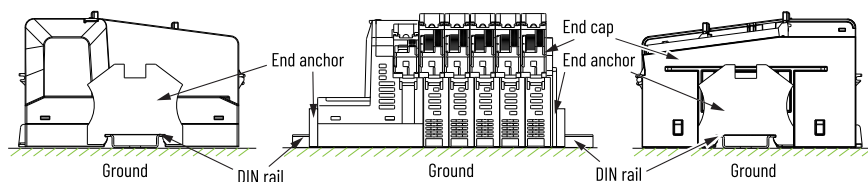
PointMax I/O modules are used as the local or remote I/O for CompactLogix 5390* controller, and the remote I/O for CompactLogix 5380, CompactLogix 5480, ControlLogix 5590, and ControlLogix 5580 controllers, using Studio 5000 Logix Designer application version 36 or later (*requires version 39 or later).

A PointMax I/O system consists of one EtherNet/IP adapter and supports up to 32 I/O modules. The adapter can supply power to a maximum of 16 I/O modules. A 5034-EXP or 5034-EXPXT expansion power is required when using more than 16 I/O modules. The I/O modules are mounted on an MB and require an RTB to connect field-side wiring. You must purchase an MB and an RTB individually for each I/O module.

PointMax I/O Mounting Guidelines

The PointMax I/O system is mounted onto a zinc-plated chromate-passivated steel DIN rail such as the Allen-Bradley 199-DR1; 46277-4; EN 60715 – 35 x 7.5 mm (1.38 x 0.30 in.). Secure the DIN rail to the mounting surface approximately every 200 mm (7.8 in.) and use DIN rail end anchors (Allen-Bradley 1492-EAJ35 or 1492-EAHJ35) at both ends of your system to meet the stated vibration specifications or shock environments.

Figure 2. PointMax I/O System Mounting Guidelines



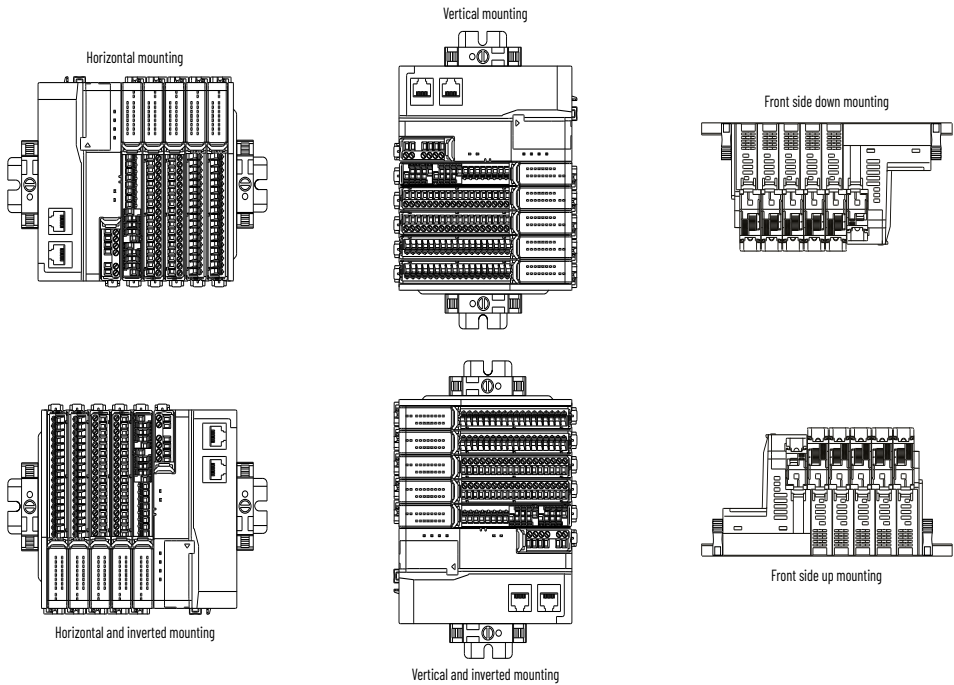
System Planning

Follow these rules when planning your system configuration:

- The adapter is the leftmost component in the rack when in horizontal mounting.
- Local PointMax I/O modules are installed to the right of the adapter.
- The 5034-AENTR and 5034-AENTRXT adapters support a maximum of 16 I/O modules. You can expand the rack to 32 I/O modules with an expansion power (5034-EXP or 5034-EXPXT) between the two sets of 16 I/O modules.
- Before powerup, verify that the end cap is installed on the last mounting base (MB) in the PointMax I/O system.
- For vibration or shock environments, verify that DIN rail end anchors are installed at both ends of the system.

Rack Orientation

The PointMax I/O system can be oriented in the following positions:



IMPORTANT: The maximum ambient temperature range differs by orientation.

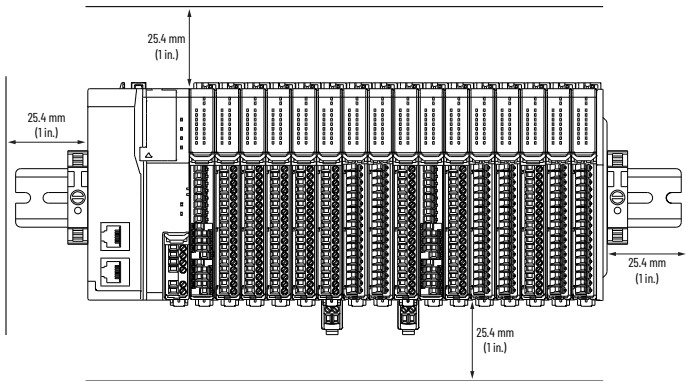
- $-25^{\circ}\text{C} \leq T_a \leq +60^{\circ}\text{C}$ ($-13^{\circ}\text{F} \leq T_a \leq +140^{\circ}\text{F}$) for horizontal orientation
- $-25^{\circ}\text{C} \leq T_a \leq +55^{\circ}\text{C}$ ($-13^{\circ}\text{F} \leq T_a \leq +131^{\circ}\text{F}$) for other orientations

Spacing

Spacing

Maintain spacing from enclosure walls, wireways, and adjacent equipment. Allow 25.4 mm (1 in.) of space on all sides for adequate ventilation.

Figure 3. Spacing Example



Dimensions

The dimension measurements that are provided in this publication are based on the horizontal mounting orientation.

Figure 4. PointMax EtherNet/IP Adapter

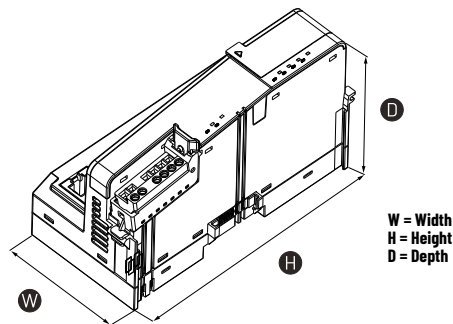


Table 12. EtherNet/IP Adapter Dimensions

Catalog Number	W	H	D
5034-AENTR, 5034-AENTRXT	62.65 mm (2.46 in.)	131.74 mm (5.18 in.)	76 mm (2.99 in.)

Figure 5. PointMax Mounting Base with RTB and I/O Module

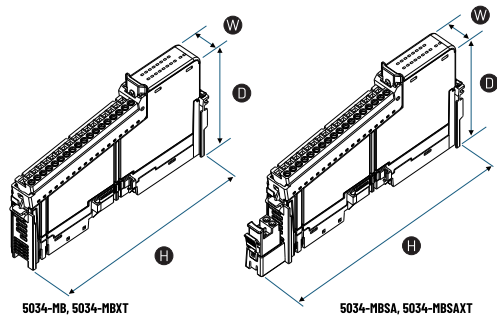


Table 13. Mounting Bases with RTB and I/O Module Dimensions

Catalog Number	W	H	D
5034-MB, 5034-MBXT	15 mm (0.59 in.)	132 mm (5.19 in.)	79 mm (3.11 in.)
5034-MBSA, 5034-MBSAXT	15 mm (0.59 in.)	149 mm (5.87 in.)	79 mm (3.11 in.)

Figure 6. PointMax Mounting Base with RTB, I/O Modules, and Accessories

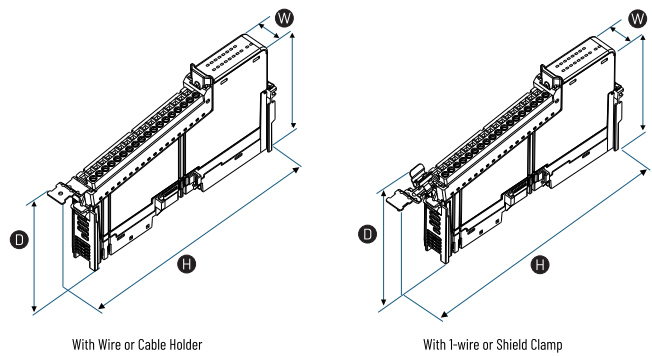


Table 14. Mounting Bases with RTB and I/O Module, and Accessories Dimensions

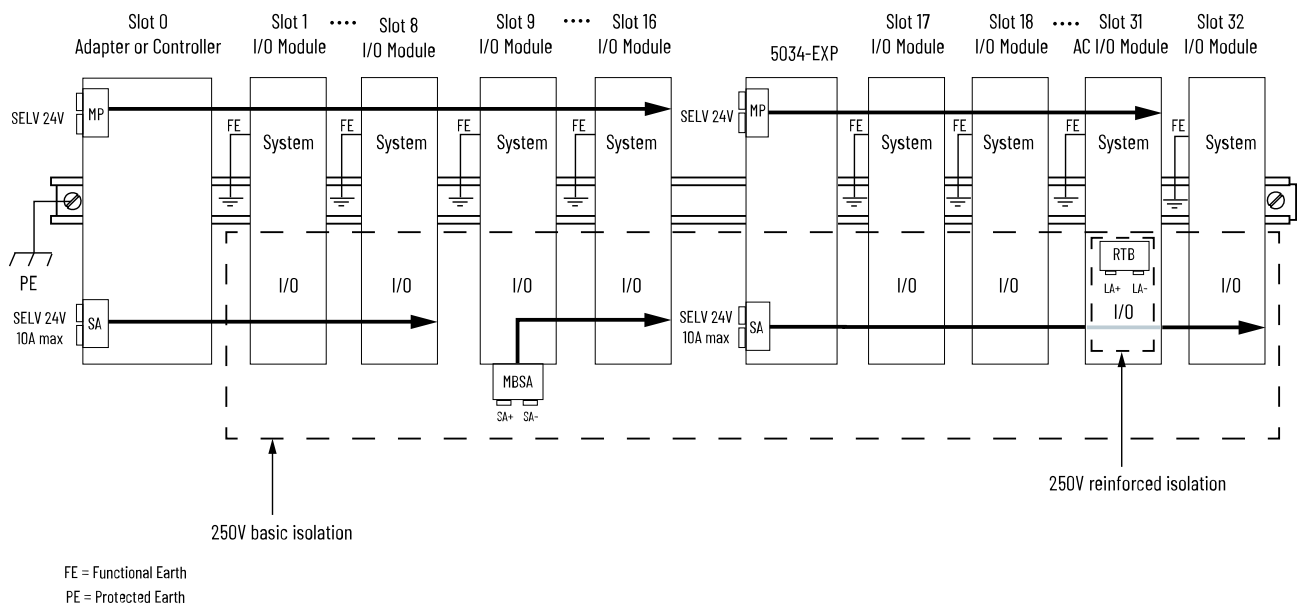
Catalog Number	W	H	D
MB with wire or cable holder	15 mm (0.59 in.)	147.3 mm (5.79 in.)	61 mm (2.40 in.)
MB with 1-wire shield clamp	15 mm (0.59 in.)	157.8 mm (6.21 in.)	69.4 mm (2.73 in.)

Ground Considerations

You must ground DIN rails according to the Industrial Automation Wiring and Grounding Guidelines, publication [1770-4.1](#).

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 the Industrial Automation Wiring and Grounding Guidelines, Rockwell Automation publication [1770-4.1](#), for more information.

Figure 7. Typical Grounding and Isolation Configuration



System Power Consideration

A PointMax I/O system uses the following types of power:

- Module Power (MP)
- Backplane power (BP)
- Sensor Actuator (SA) power
- Local Actuator (LA) power

Figure 8. Power Distribution Example - 5034-AENTR with 5034-EXP and 5034-MBSA

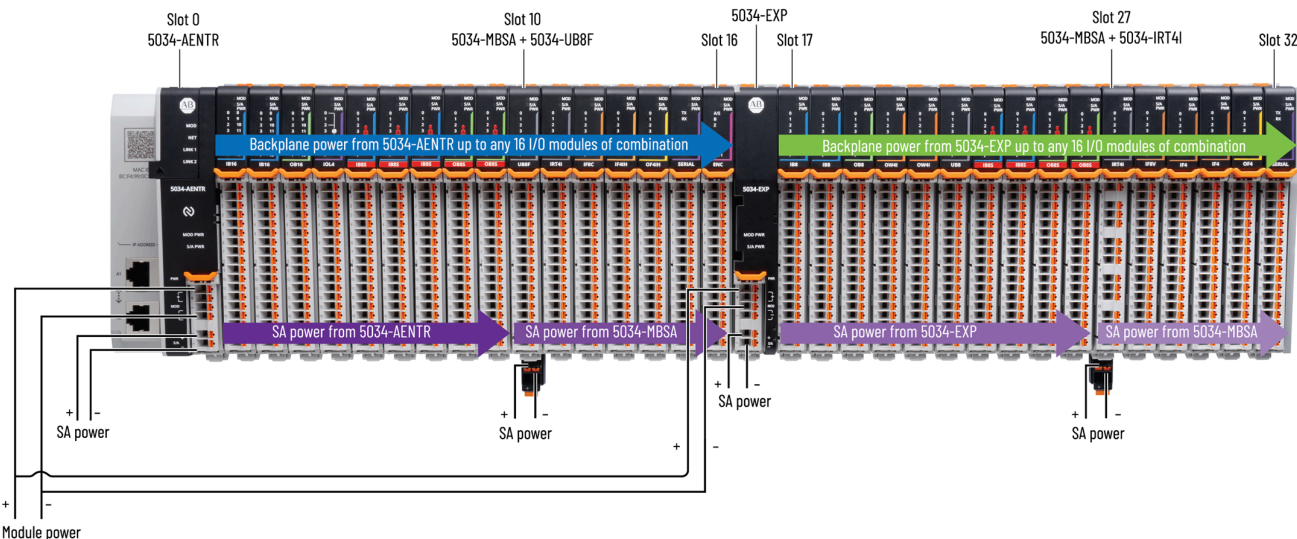
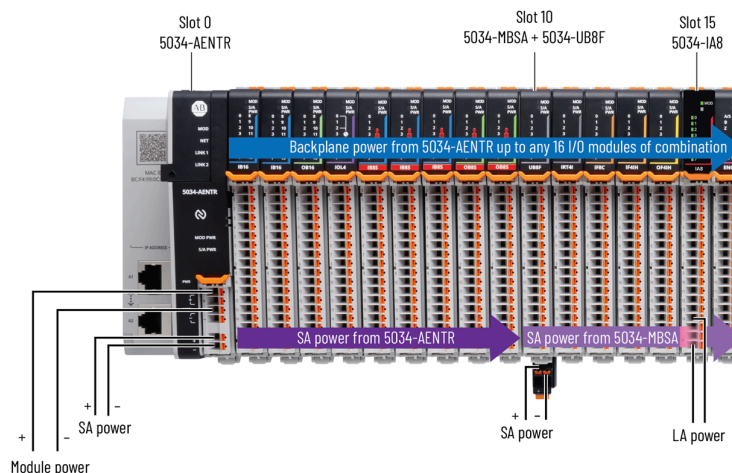


Figure 9. Power Distribution Example – 5034-AENTR with 5034-MBSA and 5034-IA8

Module Power (MP)

MP power is required in a PointMax I/O system.

PointMax EtherNet/IP adapters provide power to a PointMax I/O system via an adapter RTB that is connected to an external power supply and installed on the adapter. The adapter RTB provides module power (MP+/-) to the system. Module power refers to system-side power that is used to operate the PointMax I/O system.

- You must limit the MP power source to 18...30V DC. The rated current should be at least 850 mA (maximum limit of 10 A). The inrush current handling capability should be at least 6 A for 10 ms.

For more information, see Switched Mode Power Supply Specifications Technical Data, publication [1606-TD002](#).

- You must use SELV-listed or PELV-listed power supplies for MP power.

Backplane Power (BP)

The backplane power is generated from module power by the adapter and expansion power. It internally powers the I/O modules in the system. The adapter can supply power to a maximum of 16 I/O modules. To extend support for an additional 16 modules, use a 5034-EXP or 5034-EXPXT expansion power.

Sensor Actuator (SA) Power

SA power is field-side power that is connected to the adapter, 5034-MBSA mounting base, or 5034-EXP module. It powers devices that are connected to the I/O modules.

- You must limit the SA Power source to 10 A, max, at 18...30V DC.

For more information, see Switched Mode Power Supply Specifications Technical Data, publication [1606-TD002](#).

- You must use SELV-listed or PELV-listed power supplies for SA power.
- You must connect SA power for safety I/O modules to provide the required safety function.

Local Actuator (LA) Power

LA power is the field-side power that is connected to the 5034-RTB18/RTB18S on the PointMax digital AC modules. It supplies power to devices (actuators) that are connected to the I/O modules.

- You must limit the LA power source based on the specific module requirements.

For information on module requirements, see PointMax I/O System Specifications Technical Data, publication [5034-TD001](#).

- In AC mode, the LA power source must operate within a frequency range of 47...63 Hz.
- We recommend that you connect a minimum load to the output of the 5034-OA4/XT module during the off-state.

Marine Application Considerations

When you install a PointMax I/O system in a marine application, consider the following exceptions:

- A Salt Test is not performed on the PointMax I/O system because you must install the system in an IP54 rated enclosure. The enclosure that is used in the final installation might require a Salt Test if it is installed in the exposed area.
- A Compass Safe Distance test is not performed on the PointMax I/O system. If the system is installed on the navigation bridge of a marine vessel, it must be placed outside the 5 m (16.4 ft) radius from the compass.
- An Acoustic Noise test is not performed on the PointMax I/O system because it does not produce noise or alarms that can interfere with marine vessel safety signals.

For more information, see the certificate details available on the Product Certification website at rok.auto/certifications.

Assemble the PointMax I/O System

To install the PointMax I/O system, complete the following steps:

1. EtherNet/IP adapter
 - Set the network address
 - Install the EtherNet/IP adapter
2. Install mounting bases
 - Install the end cap
3. Install I/O modules
4. Install the RTB
 - Insert RTB key (optional)
5. Install accessories (optional)
 - Add a color marker for RTB
 - Install a shield clamp
 - Install a wire holder
6. Remove and replace adapter IP switch door (optional)
7. Connect system power

Set the Network Address

You can set the network address using one of these methods:

- [DeviceTools application on page 35](#)
- [Rotary switches on page 36](#)

If the network uses 192.168.1.x, we recommend that you use the rotary switches to set the last octet of 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 bottom switch represents the first digit in the x1 position, the middle switch represents the middle digit, and the top switch represents the digit in the x100 position.

Set the Network Address with the DeviceTools Application

Download and install the DeviceTools™ application for both Android and iOS devices to set the network address of the PointMax EtherNet/IP adapter using NFC. For more information on using the DeviceTools application, see rok.auto/devicetools.

1. From Apple App Store® or from Google Play™, search for and install the free DeviceTools app by Rockwell Automation.



Icons and branding are subject to change. For the current icon and publisher information, see the store listing.

If your phone or operating system version is not compatible, the application does not download. Check the store listing for supported device and operating system versions.

2. After installation, launch the application and follow on-screen prompts. You can adjust language and appearance in **Settings**.

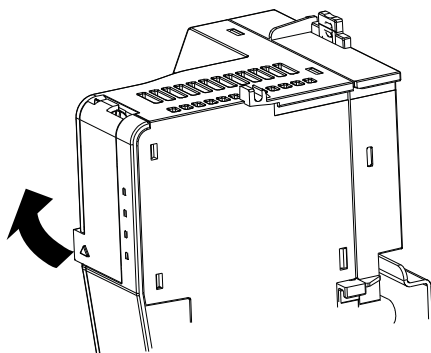
To adjust the network address switches, do the following:

1. Open the DeviceTools application on a supported iOS or Android device.
2. Hold the device to the NFC logo  on the front of the adapter.
3. When the scan completes, the application displays the read/write options available for the adapter's current state, including IP configuration and device status.
4. Follow the prompts in the DeviceTools application to set the network address to a valid value from 001...254.
5. Restart the adapter.

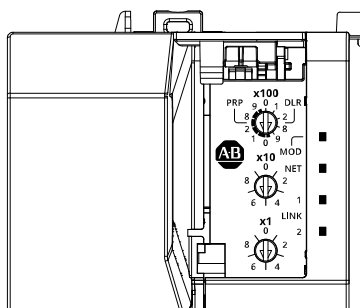
Set the Network Address with Rotary Switches

To adjust the network address switches, do the following:

1. Remove power from the adapter.
2. Lift the IP switch cover using the tab marked with the Δ symbol to open it. For instructions on removing and replacing the network address cover, see [Remove and Replace the Adapter Network Address Door on page 52](#)



3. Set the network address to a valid value.
Use a small flat screwdriver or test pen to rotate each network address switch and align the arrow with the desired number (0...9).



4. Lower the IP switch cover and press it down until it clicks into place to close it.
5. Reapply power to the adapter.

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
 - FactoryTalk® Linx

To reset the adapter to its initial out-of-the-box settings, set the rotary switches to 888 and cycle power.

For more information on how to use software to set the IP address, see the EtherNet/IP Network Devices User Manual, publication [ENET-UM006](#).

Install PointMax I/O Components

To install all the components that make up a PointMax I/O system, follow the sequence described in [Assemble the PointMax I/O System on page 35](#).

Install the EtherNet/IP Adapter



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 the Industrial Automation Wiring and Grounding Guidelines, Rockwell Automation publication [1770-4.1](#), for more information.

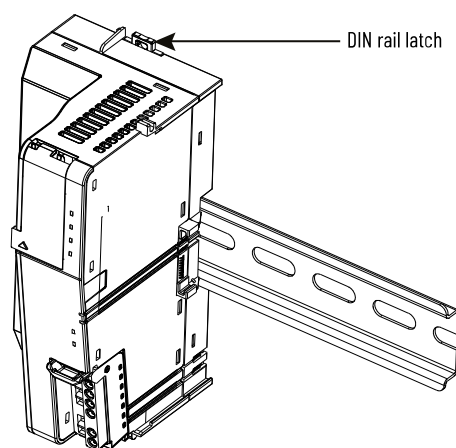


WARNING: When you insert or remove the module while backplane power is on, an electric arc can occur. This could cause an explosion in hazardous location installations.

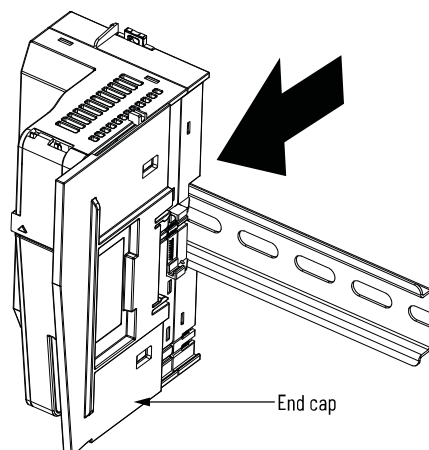
Be sure that power is removed or the area is nonhazardous before proceeding. Repeated electric arcing causes excessive wear to contacts on both the module and its mating connector. Worn contacts may create electrical resistance that can affect module operation.

To install the EtherNet/IP adapter on the DIN rail, do the following:

1. Position the adapter so that the back of it faces the DIN rail.
2. Press the adapter against the DIN rail until it clicks. The DIN rail latch locks the adapter to the DIN rail.

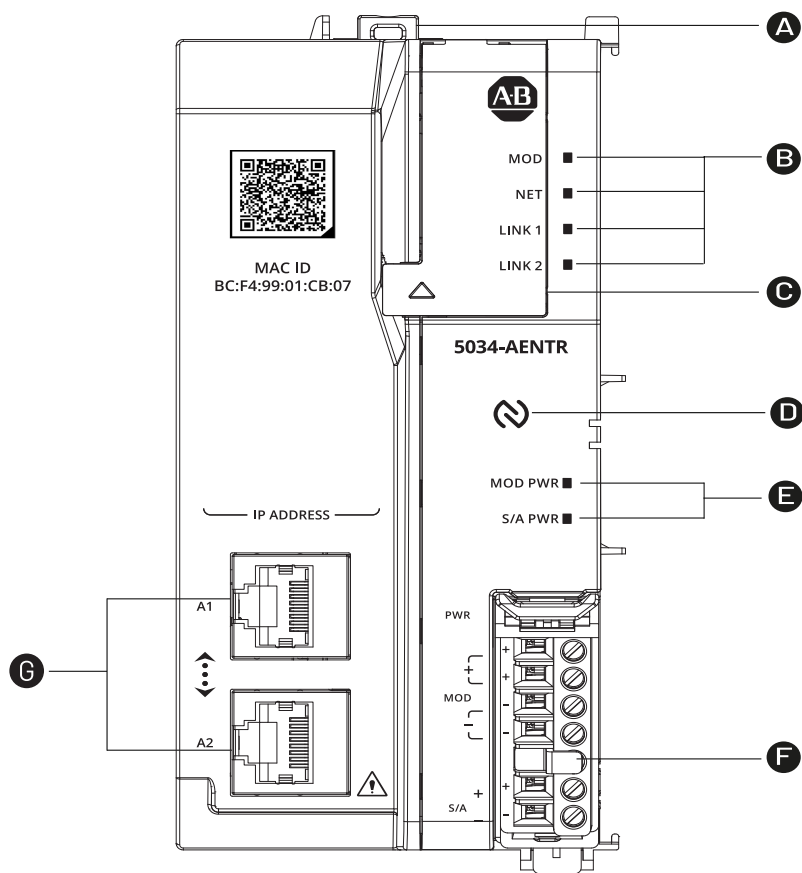


3. Slide the end cap away from the DIN rail to remove it, exposing the backplane and power interconnections.



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

EtherNet/IP Adapter



Description		Description	
A	DIN rail latch	E	Status indicators
B	Status indicators	F	RTB
C	Network address switches	G	Ethernet network RJ45 connectors
D	NFC logo		

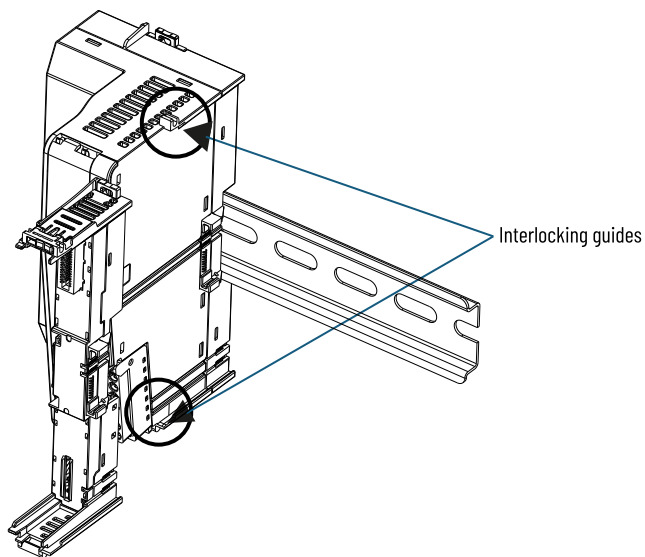
Install Mounting Bases



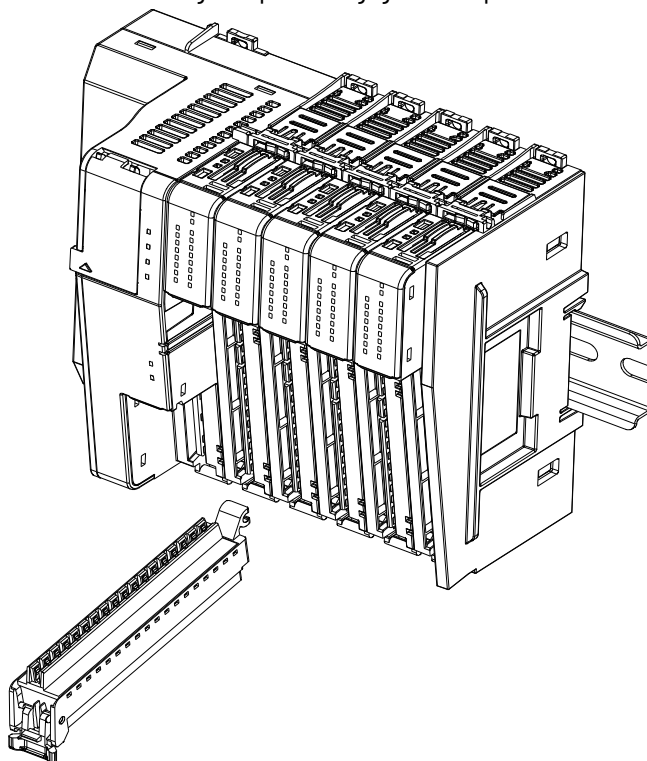
The installation steps for the mounting base are the same for the 5034-MBSA and 5034-MBPTM mounting bases as well as for the 5034-EXP expansion power.

To install a mounting base on the DIN rail, proceed as follows:

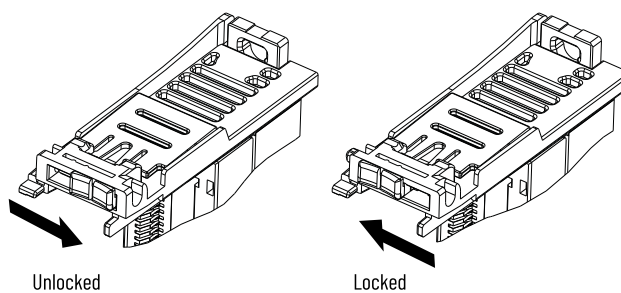
1. Align the interlocking guides on the left side of the mounting base with the interlocking guides on the right side of the installed adapter.



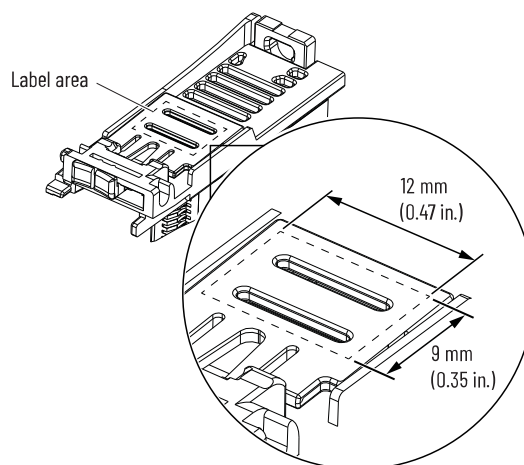
2. Slide the mounting base towards the DIN rail until the mounting base locks on the DIN rail. The interlocking side pieces engage the adapter.



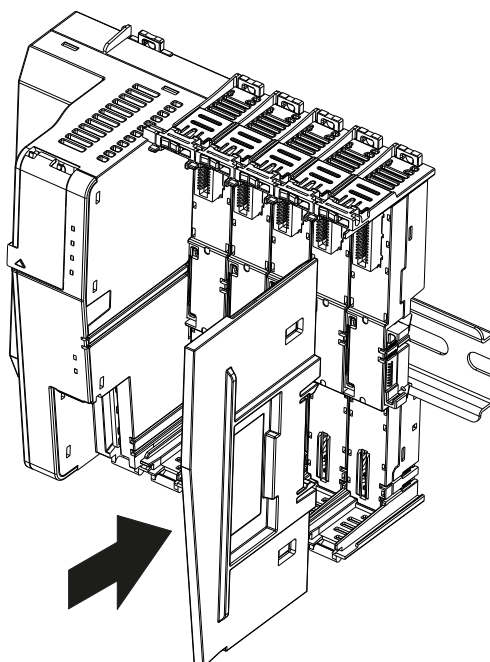
3. Slide the side latch of the mounting base to the locked position. The side latch secures the installed mounting base to the adapter.



4. If necessary, apply a label to the mounting base. The label area accepts a label up to 12 mm x 9 mm (0.47 x 0.35 in.).



5. Repeat steps 1...4 for up to 16 mounting bases for a single adapter.
6. Slide the end cap onto the last mounting base.

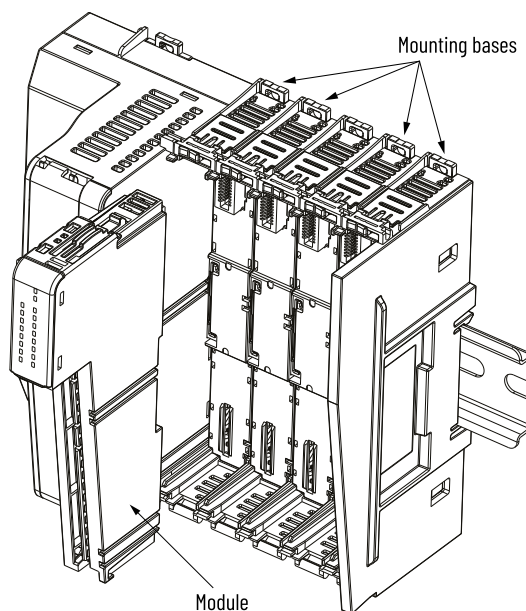


Install I/O Modules

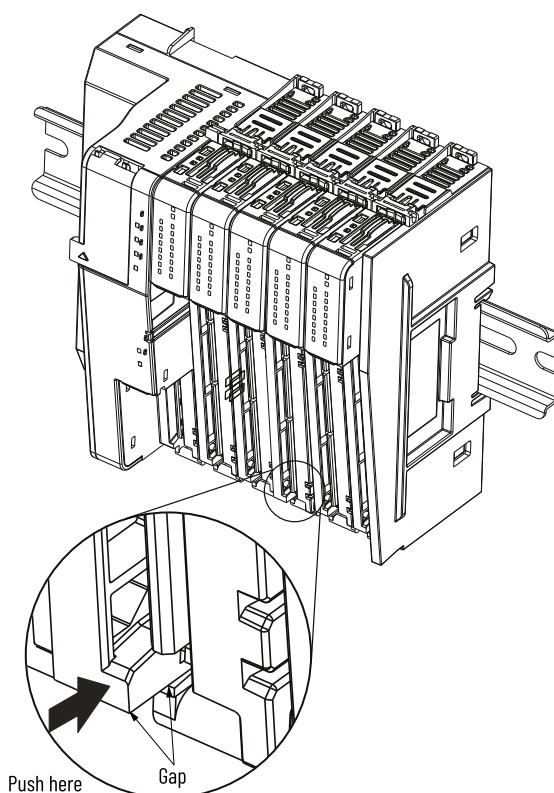
The I/O module can be installed before or after you install the mounting base. In these instructions the I/O modules are installed after the mounting bases are installed on the DIN rail.

To install the I/O module, do the following:

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



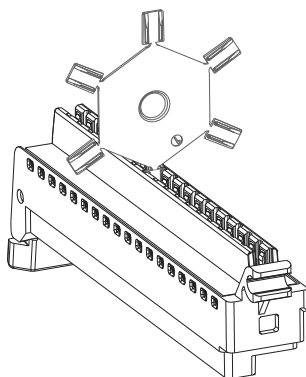
2. Repeat this process for each empty mounting base.



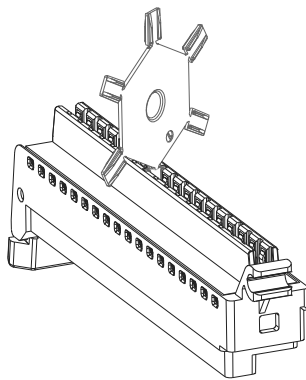
IMPORTANT: When you press the I/O module onto the mounting base, verify that the mounting base rib is correctly assembled to the I/O module slot. If the I/O is not correctly assembled, the gap will prevent the RTB from installing correctly.

Insert an RTB Key into the RTB Slot

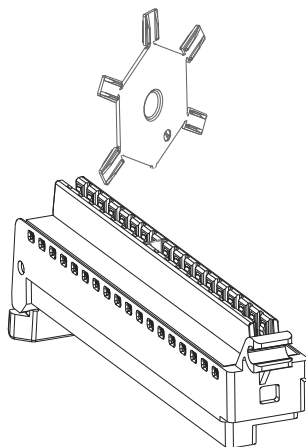
1. Make sure that you are using the correct RTB supported for your I/O module. See PointMax I/O System Specifications Technical Data, publication [5034-TD001](#) to know supported RTB information for your specific I/O module.
2. Identify the key slot positions for your I/O module. See [RTB Keying on page 27](#). Each module require three keys.
3. Insert a key into the RTB key slot corresponding to the I/O module keying.



4. Twist the key plate until the tip breaks off in the key slot on the RTB.



5. Remove the key plate.

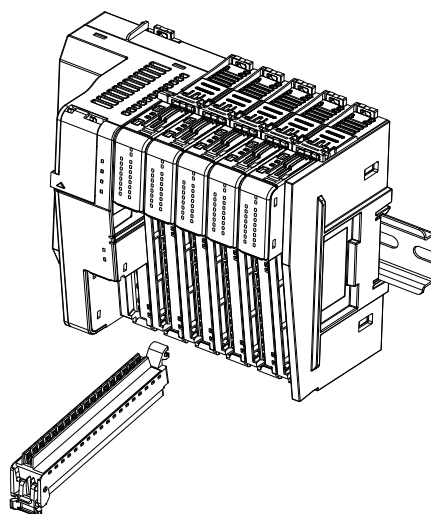


6. Repeat step 3...5 to insert two more keys in the respective RTB key slots.

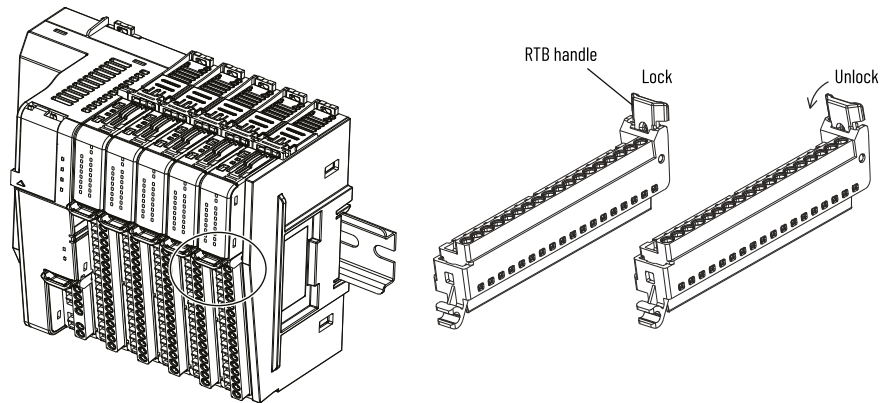
Install the RTB

Before you can install the RTB on the I/O module, you need to insert the RTB key into the key slot for it to be compatible with the I/O module that you choose to install the RTB on.

1. Hook the RTB pivot clip to the I/O module's mounting base.



2. Pivot the RTB handle until it locks onto the I/O module.



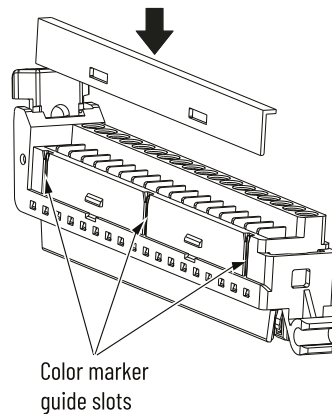
3. Repeat the above steps for all other I/O modules (if necessary). Make sure to lock the RTB handle after installation.

Install Accessories

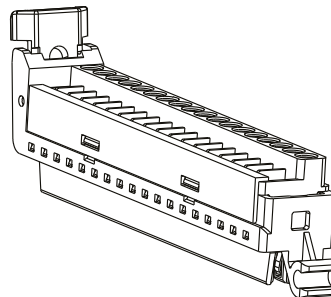
Install Color Markers for RTBs (optional)

To install a color marker to the RTB, do the following:

1. Align the color marker with the guide slots on the left side of the RTB.



2. Press down until the color marker locks in place on the RTB.



3. Repeat the above steps to install color markers for remaining RTBs.

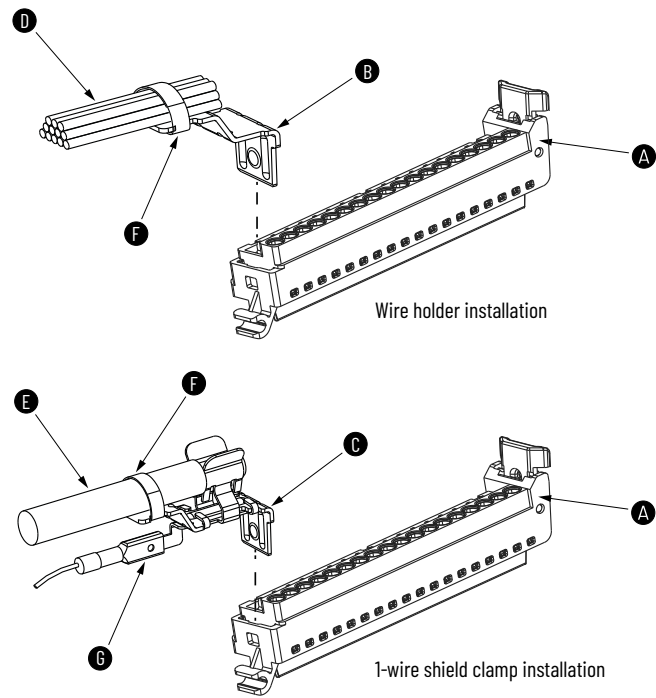
Install the Shield Clamps or Wire Holders (optional)

You can install a shield clamp or wire holder into the RTB slot to secure the cables with cable ties.

Shield clamp is a 1-wire shield clamp (5034-SHIELD) - Use it to clamp a shielded cable with outer jacket diameter of 5.5...8.0 mm (0.22...0.31 in.).

To install a wire holder or a shield clamp, proceed as follows:

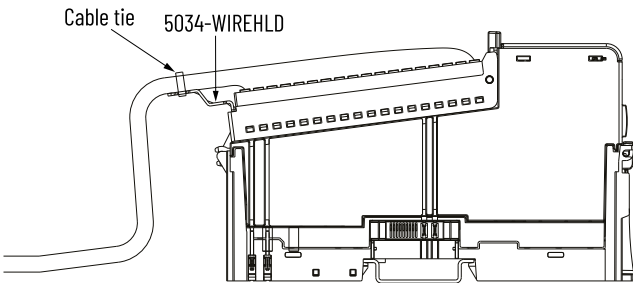
1. Insert a wire holder or a shield clamp into the RTB slot in the correct orientation as shown.
2. If you installed a wire holder, place the cables on the wire holder and secure the cables with a cable tie.
3. If you installed a shield clamp, secure the shielded cable on to the shield clamp with a cable tie.
4. Install a 2.8 x 0.5 mm (0.11 x 0.02 in.) slip on connector to the grounding plate.



Item Number	Description
A	RTB
B	Wire holder
C	1-wire shield clamp
D	Cables

Item Number	Description
E	Single shielded cable
F	Cable tie
G	Slip on connector 2.8 x 0.5 mm (0.11 x 0.02 in.)

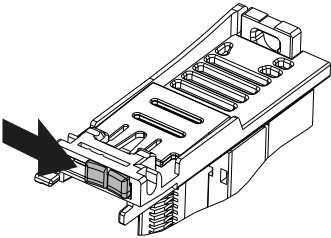
Recommended Wire Dressing



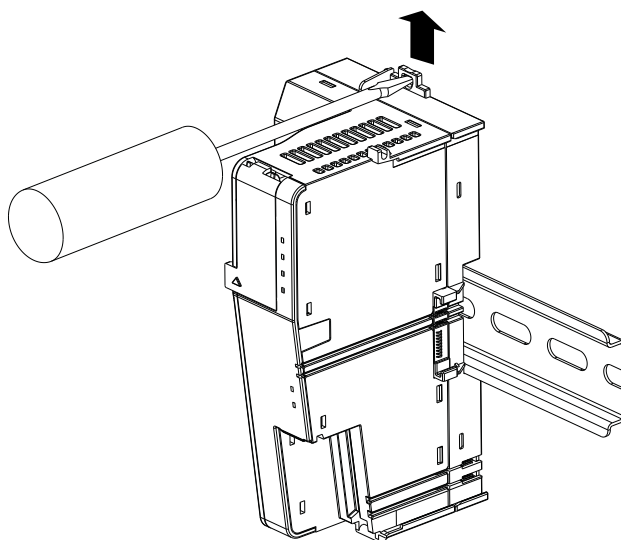
Remove the Adapter

To remove an adapter from a PointMax I/O system, do the following:

1. Disconnect the power to the PointMax I/O system.
2. Disconnect the Ethernet connectors from the adapter.
3. Unlock the RTB handle.
4. Pull the RTB away from the adapter.
5. Unlock the adjacent mounting base to disengage the adapter from the rest of the system.



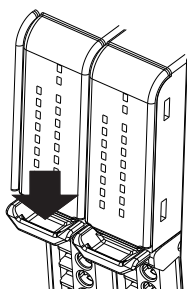
6. Insert a small screwdriver into the DIN rail latch, pivot and pull up the latch to unlock it.



7. Pull the adapter away from the DIN rail.

Remove the RTB

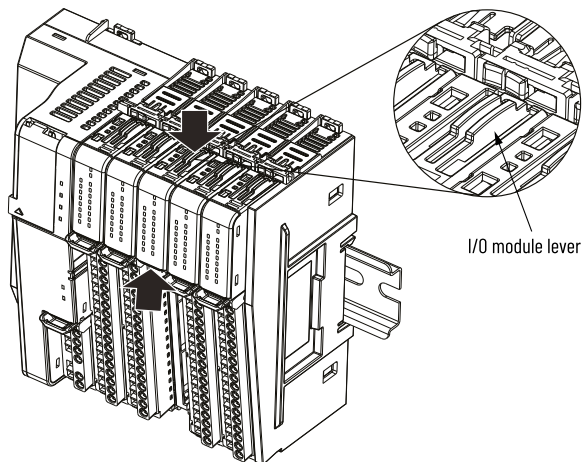
1. Press down on the RTB handle to release the terminal block.



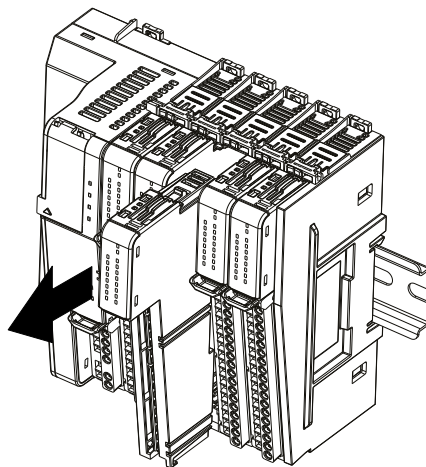
2. Pivot the RTB away from the I/O module.
3. Unhook the RTB pivot clip from the I/O module's mounting base.

Remove the I/O Module

1. After removing the RTB, hold the I/O module with your index finger and thumb and press down on the lever at the top of the I/O module.



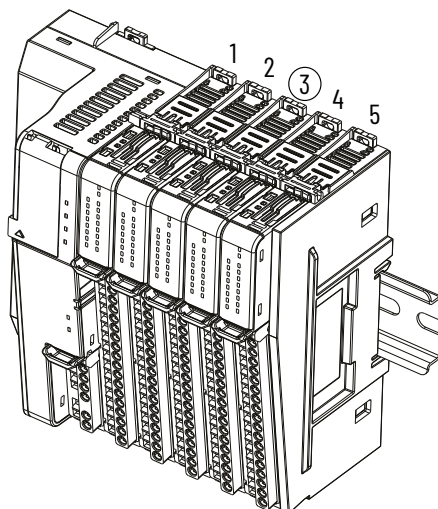
2. Unlock the I/O module.
3. Pull the I/O module straight out of the mounting base.



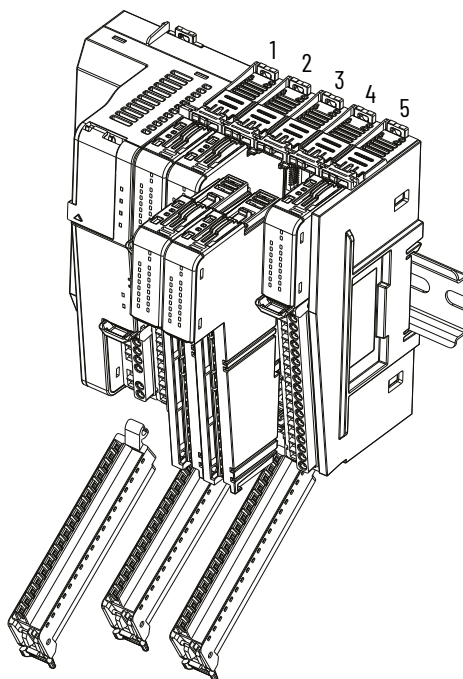
Remove the Mounting Base

To remove a mounting base that is not at the end of the rack of I/O, you must also remove the I/O module to its left and to its right to be able to remove the mounting base.

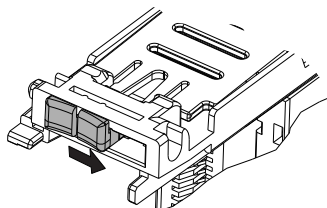
In the following example, to remove the mounting base in the middle, do the following:



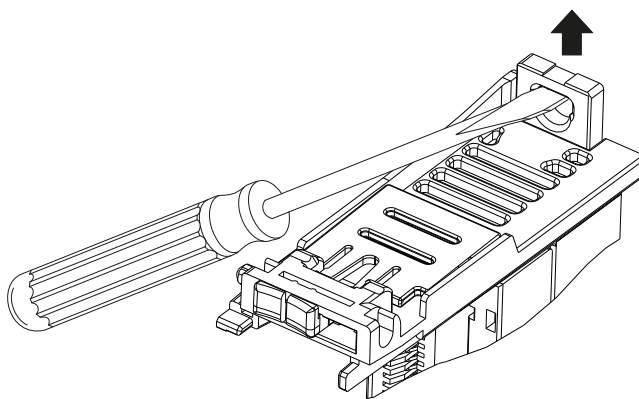
1. Remove the RTBs from the I/O modules in slot 2, 3, and 4.
2. Remove the I/O modules from mounting bases 3 and 4.



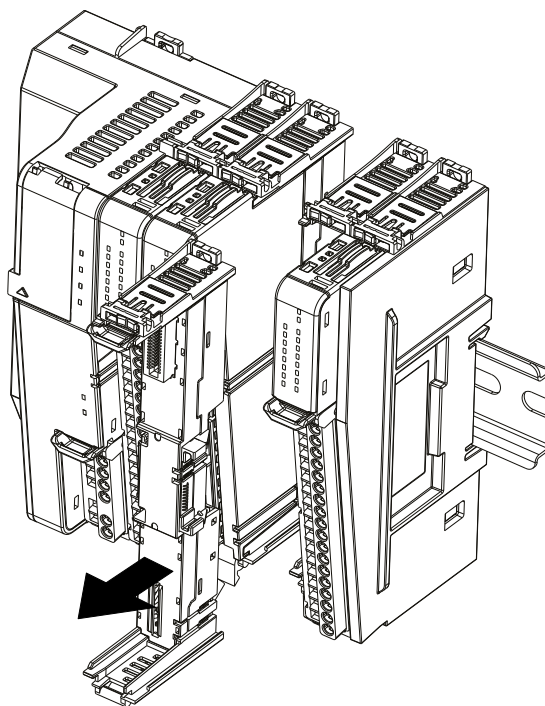
3. Unlock the side latch on mounting base 3 and 4.



4. Insert a small screwdriver into the DIN rail latch of mounting base 3 and pull up to unlock.



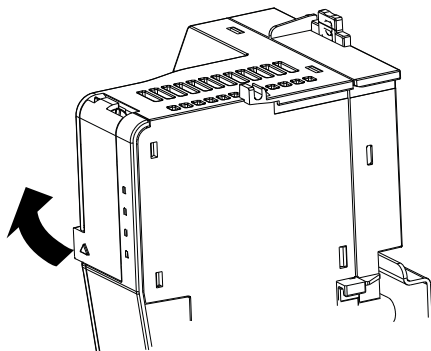
5. Pull the mounting base straight off the DIN rail.



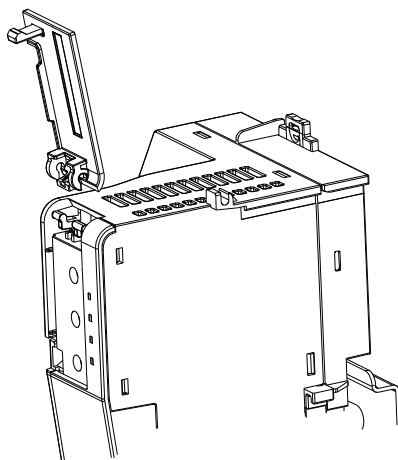
Remove and Replace the Adapter Network Address Door

To reduce the risk of damage to the door hinges follow these step to safely remove the adapter network address door:

1. Lift the network address door using the tab.



2. Pivot the door up until the door hinges disengage from the adapter hinges.



ATTENTION: Do not apply excessive force to disengage the network address door as this could break the hinge mechanism.

Follow these step to safely replace the adapter network address door:

1. Align the door hinges vertically to the hinges on the top of the adapter.
2. Press the door straight down onto the adapter hinges.
3. Close the network address door so that it engages with the lock.

Connect System Power



WARNING: You can use PointMax I/O systems in environments with explosion risks, for example, mining applications. You must consider additional factors with respect to power connections in these situations, specifically when you can remove the system from a cabinet. If your application requires the enclosure to deplete residual energy to 0.2 mJ the following steps are required in order to be compliant with the IEC/EN 60079-0 standard:

- Label the enclosure with: WARNING - AFTER DE-ENERGIZING, DELAY 5 MINUTES BEFORE OPENING.
- Wait at least 5 minutes after removal of power before opening the enclosure to access the PointMax I/O system.

There is no visual indication of when the 5 minutes have expired. **You must track that time period.**

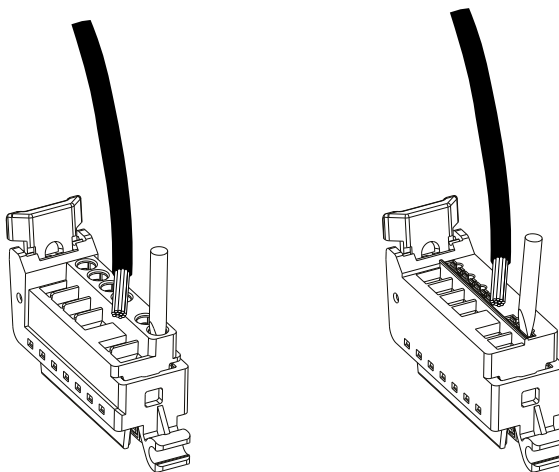
- For mining applications, the entire PointMax I/O system must deplete residual energy before you can open an explosion-proof cabinet.

Some applications require that the installed controller to deplete its residual stored energy to specific levels before transporting it into or out of your application. This requirement can include other devices that also require a wait time before removing them. See the documentation of those products for more information.

Connect Power to Adapter

Before you connect an external power source to the 5034-RTB6 or 5034-RTB6S terminals, make sure that the power source is properly sized. For example, if the total module power current draw, including current inrush requirements, is 4 A, you can use a power supply that is limited to 4 A.

1. Verify that the external power supply is not powered.
2. Strip insulation from the wires that you connect to the 5034-RTB6 or 5034-RTB6S.
3. Use a small terminal block screwdriver with a hardened 3 mm (0.11 in.) diameter blade such as Allen-Bradley catalog number 1492-N90.



- a. For a screw-type RTB, proceed as follows:
 - i. Insert the stranded wire into the wire cage.
 - ii. Tighten the screw to the torque specified in PointMax I/O System Specifications Technical Data, publication [5034-TD001](#).

- b. For a spring-type RTB, proceed as follows:
 - i. Insert a screwdriver into the pusher slot to open the wire cage.
 - ii. Insert the stranded wire into the wire cage.

Table 15. Wire Specifications - 1-wire

Wire Type	Wire Size Range	Strip Length Tolerance (± 0.4mm) Screw RTB/Spring RTB
Solid and Stranded Copper	0.34...1.5 mm ² (22...16 AWG)	10 mm (0.39 in.)

Extend Backplane Power Across the System

Each PointMax adapter and expansion power has MP connections. The input to these connections are SELV 24V DC nominal.

Each adapter and expansion power uses MP to generate backplane power through an isolated DC-DC convertor, sufficient to power 16 I/O modules and mounting bases.

The expansion power (5034-EXP or 5034-EXPXT) extends power on the rack beyond 16 I/O modules.

Connect the EtherNet/IP Network

Use an RJ45 straight cable to connect the adapter to an EtherNet/IP network. The recommendations for using shielded or unshielded cables are published at the Rockwell Automation technical support center in Knowledgebase article, Grounding the Ethernet Cable Shield in an EtherNet/IP System, [QA10251](#). The technical support center is available at: [rok.auto/knowledgebase](#).

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

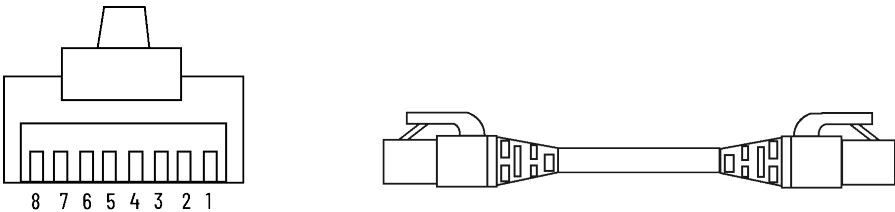


Table 16. RJ45 Connector Wiring

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 +	

Table 16. RJ45 Connector Wiring (continued)

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
4	Blue	BI_DC+	Unused	N.A.
5	White/blue	BI_DC-	Unused	N.A.
6	Green	BI_DB-	Recv Data -	
7	White/brown	BI_DD+	Unused	N.A.
8	Brown	BI_DD-	Unused	N.A.

2. Connect the RJ45 cable to an Ethernet port of the adapter.

Status Indicators

PointMax Adapter Status Indicators

EtherNet/IP communication modules have bicolor status indicators to assist with performance and diagnostics.

Figure 10. PointMax EtherNet/IP Adapter Status Indicators

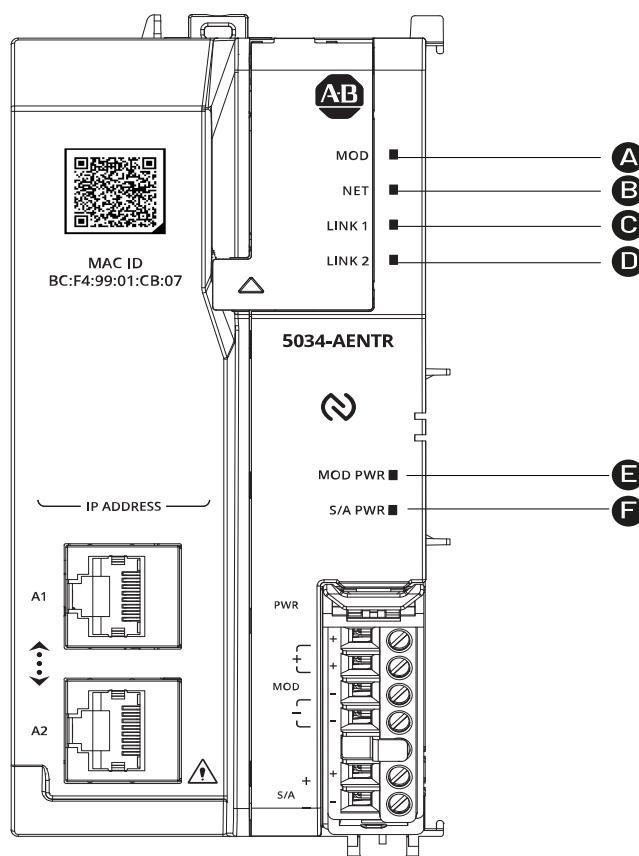


Table 17. A - Module Status Indicator

Indicator	State	Description
MOD	Off	The adapter is not powered.
	Steady green	The adapter is operational.
	Steady red	The adapter is in power-up state or in an unrecoverable fault state.
	Flashing red/green	The adapter is in self-test mode.
	Flashing red	The adapter is in one of the following states: <ul style="list-style-type: none"> Factory default power-up Recoverable fault Firmware update in progress

Table 17. A - Module Status Indicator (continued)

Indicator	State	Description
	Flashing green	The adapter is in standby mode.

Table 18. B - Network Status Indicator

Indicator	State	Description
NET	Off	The network is in one of the following states: <ul style="list-style-type: none"> The adapter is not powered The adapter is powered but there is no IP address configured
	Steady green	A network connection is established and at least one CIP™ connection is established.
	Steady red	A duplicate network address is detected.
	Flashing red/green	The adapter is performing power on self test (POST).
	Flashing red	The network connection has timed out.
	Flashing green	A network address is configured but there are no CIP connection established.

Table 19. C - LINK 1 Network Status Indicator

Indicator	State	Description
LINK 1	Off	No Ethernet cable is connected.
	Flashing green	Communication is active through the connected Ethernet cable.
	Flashing red	The adapter is operating in PRP mode and a LAN A warning has occurred.

Table 20. D - LINK 2 Network Status Indicator

Indicator	State	Description
LINK 2	Off	The network is in one of the following states: <ul style="list-style-type: none"> No Ethernet cable is connected The adapter is the active ring supervisor in a DLR network and has detected a rapid ring fault.
	Flashing green	Communication is active through the connected Ethernet cable.
	Steady green	The adapter is the active ring supervisor in a DLR network and the ring is not broken.
	Flashing red	The adapter is operating in PRP mode and a LAN B warning has occurred.

Table 21. E - Module Power Status Indicator

Indicator	State	Description
MOD PWR	Off	Module power is not available.
	Steady green	Module power is available.

Table 22. F - SA Power Status Indicator

Indicator	State	Description
SA PWR	Off	SA power is not available.
	Steady green	SA power is available.

I/O Modules Status Indicators

PointMax I/O modules include status indicators such as SA power, LA power, module status, and I/O channel status to indicate module operating conditions and behavior. Not all I/O modules include an SA power status indicator. Some modules, such as AC I/O modules, include an LA power status indicator. For more information about these indicators, see PointMax I/O System Specifications Technical Data, publication [5034-TD001](#).

For detailed, module-specific status indicator information, see the module user manual listed in the [Additional Resources on page 5](#).

SA Power Status Indicator

Table 23. Interpret SA Power Status Indicator

Indicator State	Description
Steady red	One of the following: <ul style="list-style-type: none"> There is no SA power to the module or SA power is not in the valid range. A safety connection cannot be made or maintained (safety modules only).
Steady green	The SA power is in the valid range.

LA Power Status Indicator

Table 24. Interpret LA Power Status Indicator - 5034-0A4 and 5034-0A4XT

Indicator State	Description
Steady red	There is no LA power to the module or LA power is not in the valid range.
Steady green	The LA power is in the valid range.

Module Status Indicators

Table 25. Interpret Module Status Indicators

Indicator State	Description
Off	The module is not powered.
Steady red	The module experienced a nonrecoverable fault.
Flashing red and green	The device is in a self-test mode.
Flashing red	One of the following conditions exists: <ul style="list-style-type: none"> A module firmware update is in progress. A module firmware update attempt failed. The device has experienced a recoverable fault. A connection to the module has timed out.
Flashing green	The module has no I/O connections.
Steady green	The module is operational and all I/O connections are active.

I/O Channel Status Indicators

Table 26. Interpret I/O Channel Status Indicators – Standard I/O Modules

Indicator State	Description
Off	One of the following: <ul style="list-style-type: none"> The channel is Off. There is no backplane power.
Steady yellow	One of the following: <ul style="list-style-type: none"> The channel is On. The channel is operating normally.
Flashing red	A fault condition is detected. Examples include field power loss, a short circuit condition, an open wire, or an overrange condition.

Table 27. Interpret I/O Channel Status Indicators – Safety Digital I/O Modules

Indicator State	Description
Off	One of the following: <ul style="list-style-type: none"> The point is Off. The point is not used. There is no backplane power.
Steady yellow	The point is operating normally.
Flashing red	The module experienced one or more recoverable faults.

Table 27. Interpret I/O Channel Status Indicators – Safety Digital I/O Modules (continued)

Indicator State	Description
Steady red	One of the following: <ul style="list-style-type: none">• A Field Power Loss condition exists.• An internal channel fault exists.

Rockwell Automation Support

Use these resources to access support information.

Technical Support Center	Find help with how-to videos, FAQs, chat, user forums, and product notification updates.	rok.auto/support
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)	Get help determining how products interact, check features and capabilities, and find associated firmware.	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 information on its website at rok.auto/pec.

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