Installation Instructions

Original Instructions

Allen-Bradley
by ROCKWELL AUTOMATION

Stratix 5410 Ethernet Managed Switches and Power Supply

Catalog Numbers 1783-IMS28NDC, 1783-IMS28RDC, 1783-IMS28GNDC, 1783-IMS28GRDC, 1783-IMS28NAC, 1783-IMS28RAC,1783-IMS28GNAC, 1783-IMS28GRAC

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.

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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、組装、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.
North American Zones: UL 60079-0, 7th Ed., 2019-03-26; UL 60079-7, 5th Ed., 2017-02-24 CAN/CSA-C22.2 No. 60079-0:19, Feb. 2019; CAN/CSA C22.2 No. 60079-7:16 October 2016	

ATTENTION: This equipment is intended for use in a Pollution Degree 2 industrial environment, in overvoltage Category II applications (as defined in EN/IEC 60664-1), at altitudes up to 2000 m (6562 ft) without derating.
This equipment is not intended for use in residential environments and may not provide adequate protection to radio communication services in such environments.

This equipment is supplied as open-type equipment for indoor use. It must be mounted within an enclosure that is suitably designed for those specific environmental conditions that will be present and appropriately designed to prevent personal injury resulting from accessibility to live parts. The enclosure must have suitable flame-retardant properties to prevent or minimize the spread of flame, complying with a flame spread rating of 5VA or be approved for the application if nonmetallic. The interior of the enclosure must be accessible only by the use of a tool. Subsequent sections of this publication may contain additional information regarding specific enclosure type ratings that are required to comply with certain product safety certifications.

In addition to this publication, see the following:

- Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1, for additional installation requirements
- NEMA Standard 250 and IEC 60529, as applicable, for explanations of the degrees of protection provided by enclosures

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: 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.

ATTENTION: This product is grounded through the DIN rail to chassis ground. Use zinc-plated yellow-chromate 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.

ATTENTION: Under certain conditions, viewing the optical port may expose the eye to hazard. When viewed under some conditions, the optical port may expose the eye beyond the maximum permissible exposure recommendations.

ATTENTION: Class 1 laser product. Laser radiation is present when the system is open and interlocks bypassed. Only trained and qualified personnel should be allowed to install, replace, or service this equipment.

ATTENTION: If this equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

ATTENTION: Use only a soft dry anti-static cloth to wipe down equipment. Do not use any cleaning agents.

ATTENTION: (Switches with DC power supply modules). To comply with the CE Low Voltage Directive (LVD), all connections to this equipment must be powered from a source compliant with the following:
- Safety Extra Low Voltage (SELV) Supply
- Protected Extra Low Voltage (PELV) Supply

UK and European Hazardous Location Approval

The following applies to products marked CE Ex II 3 G: Such modules:

- 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 to 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>. Equipment protection by increased safety "e".
- Equipment protection by increased safety "e", reference certificate number DEMKO15ATEX1492X and UL23UKEX2885X.
- 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.

Special Conditions for Safe Use

WARNING:
- This equipment shall be mounted in an UKEX/ATEX Zone 2 certified enclosure with a minimum ingress protection rating of at least IP54 (in accordance with EN 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.
- 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.
- 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.

WARNING: If you connect or disconnect the communication cable with power applied to this module 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.

WARNING: Use supply wires suitable for 30 °C (86 °F) above surrounding ambient.

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

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.

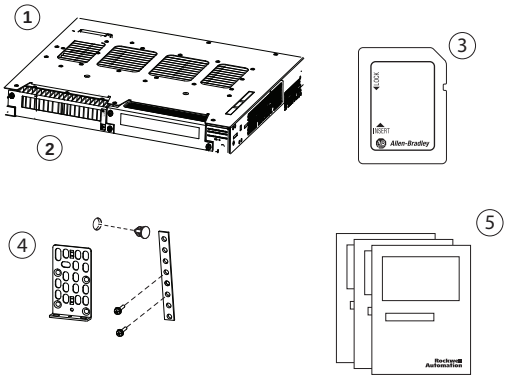
WARNING: When you insert or remove the CompactFlash/SD memory Card while power is on, an electrical arc can occur. This could cause an explosion in hazardous location installations. Be sure that power is removed or the area is nonhazardous before proceeding.

WARNING: When you insert or remove the small form-factor pluggable (SFP) optical transceiver 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.

WARNING: Do not use the USB port in hazardous locations.

Parts List

Verify that you have these items. The secure digital (SD) card and power supply comes installed in the switch.



1 Stratix© 5410 switch
2 Power supply module
3 SD card
4 Mounting kit
5 Documentation

Required Tools

Obtain these tools:

- Ring, spade, or flanged spade terminal (terminals should be insulated)
  - Ring terminal (such as Tyco part number 2-34158-1 for 16…14 AWG or 2-34852-1 for 12…10 AWG wire)
  - Spade terminal (such as Tyco part number 54367-2 for 16…14 AWG wire)
  - Flanged spade terminal (such as Tyco part number 2-324165-1 for 16…14 AWG wire or 1-324581-1 for 12…10 AWG wire)
- Crimping tool
- 6-gauge copper ground wire, such as Belden part number 9906 or equivalent
- 12-AWG wire (minimum) for the low-voltage power-supply module and 16-AWG (minimum) wire for the high-voltage power-supply module
- For power source connections, use wires that are rated for at least 194°F (90°C).
- UL- and CSA-rated style 1007 or 1569 twisted-pair copper wire, such as Belden part number 9318
- Wire-stripping tools for stripping 6-, 10-, 12-, 14-, and 16-gauge wires.
- Number-2 Phillips screwdriver
- Flat-blade screwdriver

For simplified cabling, the automatic medium-dependent interface crossover (auto-MDIX) feature is enabled by default on the switch. With auto-MDIX enabled, the switch detects the required cable type for copper Ethernet connections and configures the interfaces accordingly. You can use either a crossover or a straight-through cable for connections to a 10/100/1000 Ethernet, PoE/PoE+ switch port, regardless of the type of device on the other end of the connection.

Site Requirements

Observe these site requirements:

- To prevent the switch from overheating, observe these minimum clearances:
  - Top and bottom: 44.45 mm (1.75 in.)
  - Sides: 50.8 mm (2.0 in.)
  - Front: 50.8 mm (2.0 in.)
- For 10/100/1000 Ethernet, PoE/PoE+ ports, the cable length from a switch to an attached device cannot exceed 100 m (328 ft).
- Temperature surrounding the unit must be in a range of -40...60 °C (-40...140 °F).
- Clearance to front and rear panels meets these conditions:
  - Front- or back-panel status indicators can be easily read.
  - Access to ports is sufficient for unrestricted cabling.
  - Power and alarm relay connectors are within reach of the connection to the AC or DC power source.
- Cabling is away from sources of electrical noise, such as radios, power lines, and fluorescent lighting fixtures.

Mount the Switch on a Rack

To mount the switch on a rack, see the following:

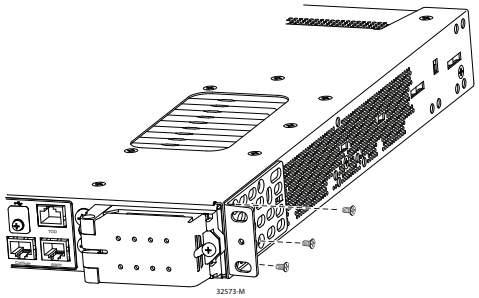
- Attach Brackets on page 6
- Mount the Switch on page 7

Attach Brackets

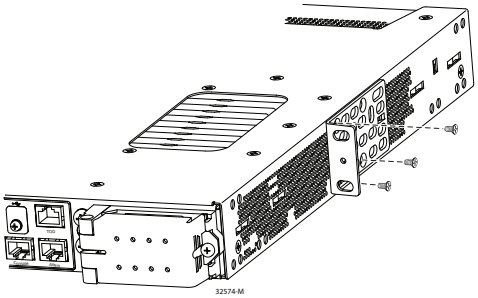
To attach brackets on the switch, follow this procedure.

1. Identify a mount position and attach brackets to both sides of the switch.

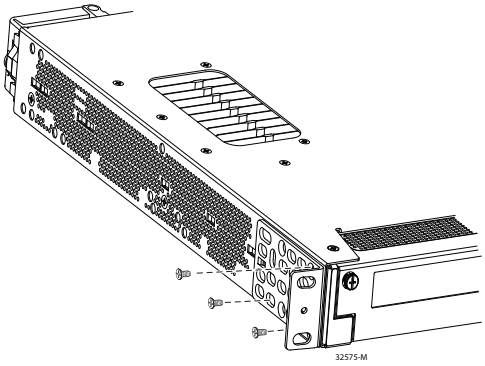
Cable-side Mount Position



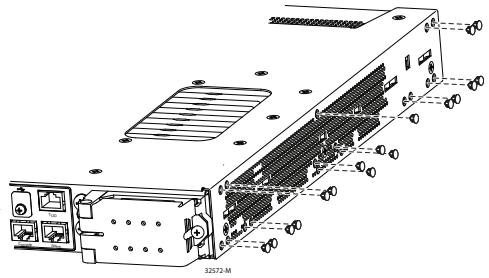
Center Mount Position



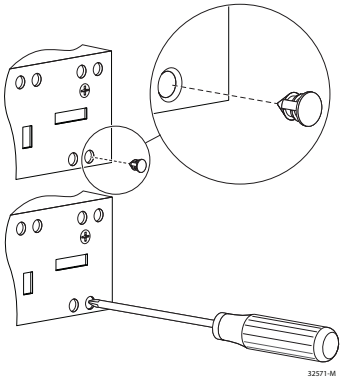
Power-supply Mount Position



2. Insert the rubber plugs in the unused holes on both sides of the switch.



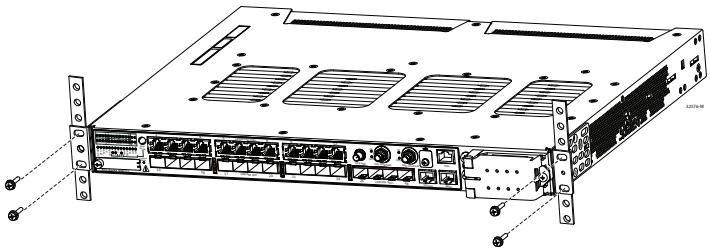
3. Use a screwdriver or pen to push in the rubber plugs completely.



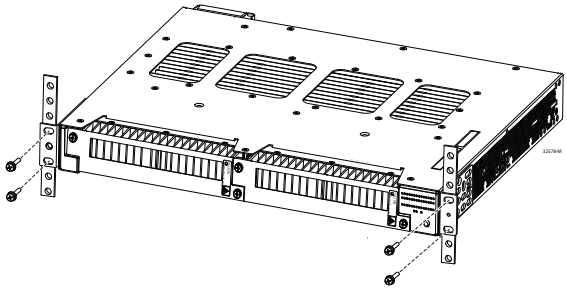
Mount the Switch

After you attach the brackets on the switch, use the four supplied number-12 Phillips machine screws to attach the brackets to the rack.

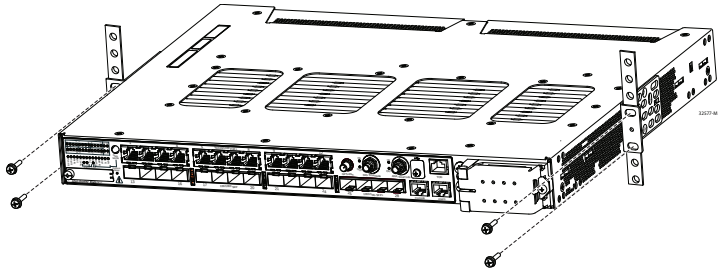
Cable-side Mount Position



Power-supply Mount Position



Center Mount Position



Mount the Switch on a Wall

To mount the switch on a wall, see the following:

- Attach the Brackets on page 8
- Mount the Switch on page 9

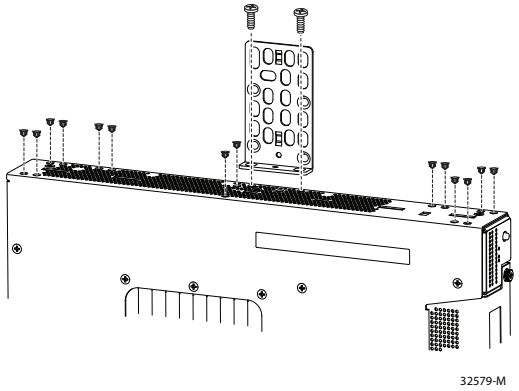
IMPORTANT To mount the switch on a wall in an enclosure, follow these minimum clearances:

- Sides of switch facing up and facing down: 9.52 cm (3.75 in.)
- Port side: 7.62 cm (3.0 in.)
- Power supply side: 13.33 cm (5.25 in.)
- Cover side not facing wall: 4.44 cm (1.75 in.)
- Base side facing wall: 0 cm (0 in.)

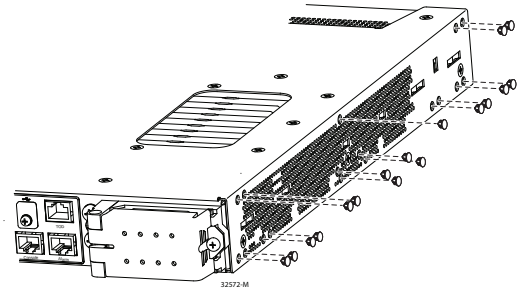
Attach the Brackets

To attach brackets to the switch, follow this procedure.

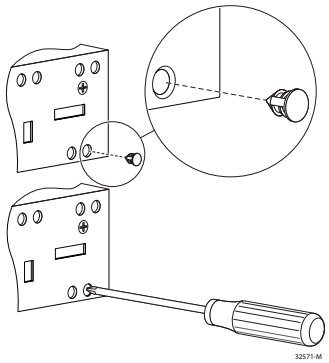
1. Attach the brackets on both sides of the switch.



2. Insert the rubber plugs in the unused holes on both sides of the switch.



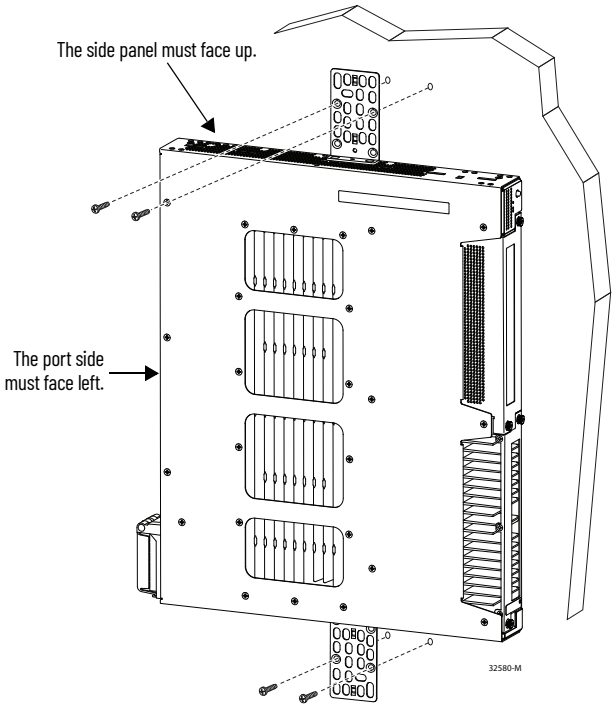
3. Use a screwdriver or pen to push in the rubber plugs completely.



Mount the Switch

The switch can be mounted on a wall in only one position: the side panel must face up, and the port side must face left.

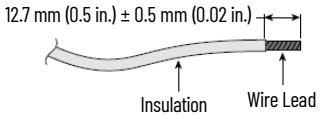
For the best support of the switch and cables, make sure that the switch is attached securely to wall studs or to a firmly attached plywood backboard.



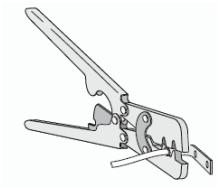
Ground the Switch

To ground the switch, follow these steps. Be sure to follow any grounding requirements at your site.

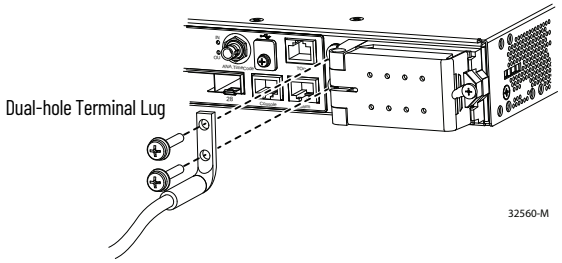
1. To remove the ground screw from the cable side of the switch, use a Phillips screwdriver or a ratcheting torque screwdriver with a Phillips head. Store the ground screw for later use.
2. Strip the 13.3 mm^2 (6 AWG) ground wire to 12.7 mm (0.5 in.) ± 0.5 mm (0.02 in.). Stripping more than the recommended amount of wire can leave exposed wire from the connector.



3. Insert the ground wire into the terminal lug, and crimp the terminal to the wire.



4. Slide the ground screw from Step 1 through the terminal lug, and insert the ground screws into the opening on the cable side.

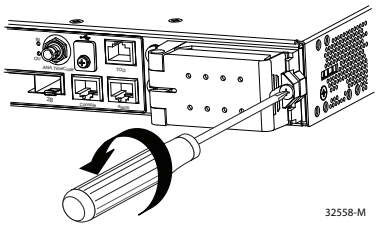


5. Use a ratcheting-torque screwdriver to tighten the ground screws to 3.39 N•m (± 0.23 N•m) or 30 in•lb (± 2 in•lb).
6. Attach the other end of the ground wire to a grounded bare metal surface, such as a ground bus or a grounded bare rack.

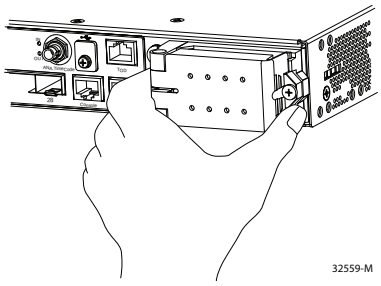
Wire the Power Source

To wire the power source, follow these steps.

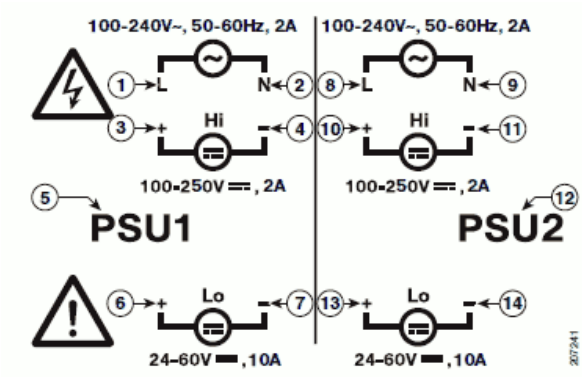
1. Turn power off at the AC and DC circuits.
2. Loosen the captive screw on the power input terminal by using a Phillips screwdriver.



3. Open the cover.



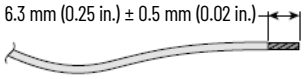
The terminal screws labels are on the power-input terminal cover.



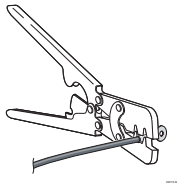
1	Line connection for high-voltage AC (PSU1)
2	Neutral connection for high-voltage AC (PSU1)
3	Positive connection for high-voltage DC (PSU1)
4	Negative connection for high-voltage DC (PSU1)
5	PSU1 (power-supply module 1)
6	Positive connection for low-voltage DC (PSU1)
7	Negative connection for low-voltage DC (PSU1)
8	Line connection for high-voltage AC (for PSU2)
9	Neutral connection for high-voltage AC (PSU2)
10	Positive connection for high-voltage DC (PSU2)
11	Negative connection for high-voltage DC (PSU2)
12	PSU2 (power-supply module 2)
13	Positive connection for low-voltage DC (PSU2)
14	Negative connection for low-voltage DC (PSU2)

4. To connect from the power-input terminal to the power source, use twisted-pair copper wire (12...18 AWG):
   - For the low-voltage DC power supply, use 12 AWG (minimum)
   - For the high-voltage AC or DC power supply module, use 16 AWG (minimum)
5. Strip each of the two wires to 6.3 mm (0.25 in.) ± 0.5 mm (0.02 in.).

   Do not strip more than 6.8 mm (0.27 in.) of insulation from the wire. Stripping more than the recommended amount of wire can leave exposed wire from the connector after installation.



6. Insert the wire into a spade terminal, and crimp it to the wire.



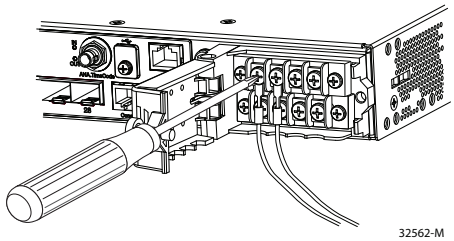
7. Loosen the terminal screw, and slide the terminal under the screw and washer.

IMPORTANT Use the appropriate terminal screws that are based on power supply type: high-voltage (AC or DC) or a low-voltage (DC).

8. Make the power connection:

IMPORTANT Make sure that you cannot see any wire lead. Only wire with insulation should extend from the terminal screw.

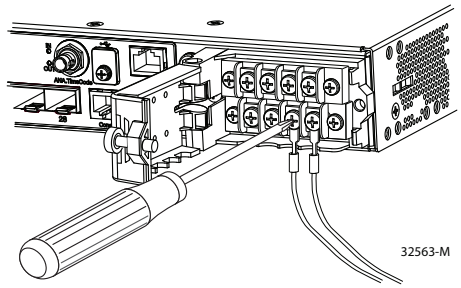
   - For AC power, connect the line wire into the terminal screw that is labeled L and the neutral wire into the terminal screw labeled N.



   - For DC power, connect the positive wire into the terminal screw that is labeled +, and connect the negative wire into the terminal screw labeled -.

   For low-voltage DC power, connect the wires to the terminals labeled Lo.

   For high-voltage DC power, connect the wires to the terminals labeled Hi.



9. Torque the captive screws above the wires to 0.79 N•m (7 in•lb).
10. Complete the power connection:

IMPORTANT Make sure that you cannot see any wire lead. Only wire with insulation should extend from the terminal screw.

   - For AC power, connect the other end of the line wire (the one connected to L) to the line terminal on the AC power source. Connect the other end of the neutral wire (the one connected to N) to the neutral terminal on the AC power source.
   - For DC power, connect the other end of the positive wire (the one connected to +) to the positive terminal on the DC power source. Connect the other end of the negative wire (the one connected to –) to the negative terminal on the DC power source.

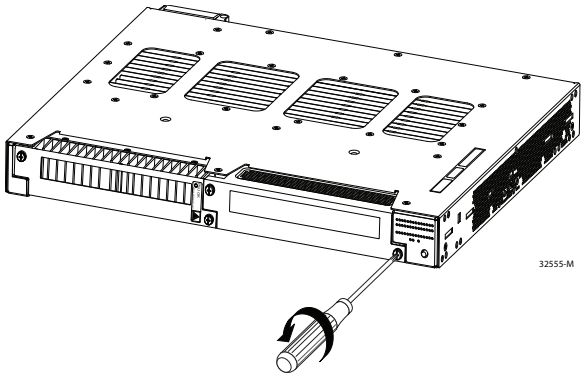
IMPORTANT On switches that support PoE, do not connect the negative (return) terminal of the DC power source to earth ground.

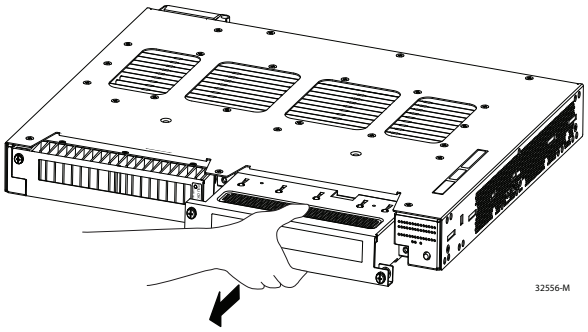
11. Close the power input terminal cover.
12. Use a ratcheting torque screwdriver to torque the screw to 0.79 N•m (7 in•lb).
13. Turn on the power at the AC or DC circuit.
14. Verify that the PSU 1 or 2 status indicator on the switch and PSU OK status indicator on the power supply module are green.

Install a Power Supply Module in the Switch

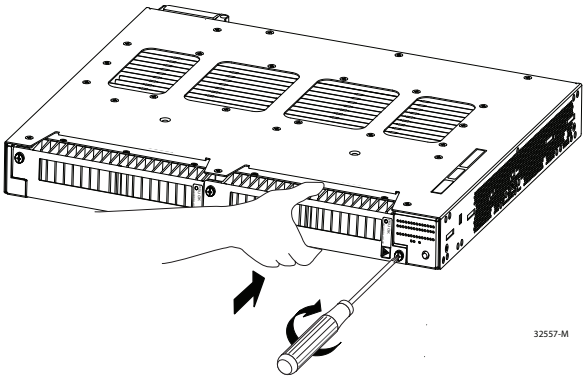
The switch ships with one pre-installed power supply. To install a second power supply, follow these steps.

1. Turn power off at the AC and DC circuits.
2. To loosen the two captive screws of the blank power-supply module and gently pull it out, use a Phillips screwdriver.





3. Insert the power supply module into the slot, and gently push it in.
   When inserted correctly, the power-supply module is flush with the switch.



4. Use a ratcheting torque screwdriver to torque each screw to 0.904…1.13 N•m (8…10 in•lb).

Remove a Power Supply Module from the Switch

By removing the power-supply modules, you can power off the switch without disconnecting the wiring from the power-input terminal.

To remove a power supply module from the switch, follow these steps.

1. Turn power off at the AC and DC circuits.
2. Verify that the PSU 1 or 2 and PSU OK status indicators are blinking red or are off.
3. Use a Phillips screwdriver to loosen the captive screws that secure the power-supply module to the switch.
4. Remove the power-supply module from the power slot. The power-supply module might be hot.
5. Install a new power-supply module or a blank cover.

Wire the External Alarms

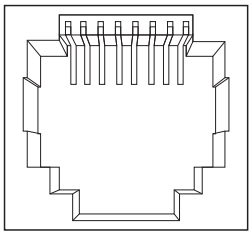
The switch has four alarm inputs and one Form C (single-pole, double-throw) alarm output relay circuits for external alarms. The input alarm relay circuits are designed to sense if the alarm input is open or closed relative to the alarm input reference pin. The output alarm relay circuit has one Form C relay, with one normally open (NO) and one normally closed (NC) contact. You can configure the output alarm relay as either normally energized or normally de-energized by using the CLI.

Alarm signals are connected to the switch through the 8-way alarm relay RJ45 connector. An alarm input and the common wiring connection are required to complete one input alarm circuit. You must provide either an NO or an NC dry contact to complete the alarm circuit between common and one of the four alarm inputs.

ATTENTION: Do not apply an external voltage source to the alarm inputs. Limit alarm output wiring to 48 V DC, 0.5 A.

An alarm output and the common wiring connection are required to complete one output alarm circuit. The Form C output alarm relay provides one NO and one NC dry contact

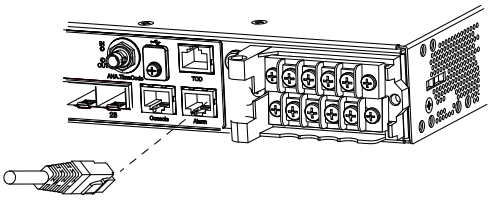
Pin	Label
1	Alarm 1 input
2	Alarm 2 input
3	Alarm output normally closed
4	Alarm 3 input
5	Alarm 4 input
6	Alarm output normally open
7	Alarm output common
8	Alarm input common



ATTENTION: Wire connections to the power and relay connector, must be UL- and CSA-rated, style 1007 or 1569 twisted-pair copper appliance wiring material (AWM) wire.

Attach the Alarm Relay Connector to the Switch

Insert the alarm relay RJ45 connector into the receptacle on the switch front panel.



Install or Remove an SFP Module

ATTENTION: Use SFP modules from only Rockwell Automation. For details about supported modules, see the Stratix Ethernet Device Specifications Technical Data, publication 1783-TD002.

SFP modules are inserted into SFP module slots on the front of the switch. These field-replaceable modules provide the uplink optical interfaces, send (TX) and receive (RX).

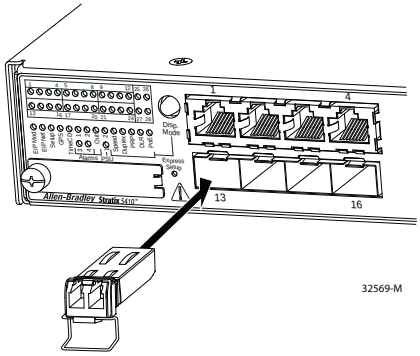
You can use any combination of compatible SFP modules:

- Each SFP module must be of the same type as the SFP module on the other end of the cable. The cable must not exceed the stipulated cable length for reliable communications.
- Once you install SFP modules in the switch, be aware that the overall temperature rating of the combined modules (switch and SFP modules) is limited to the lowest maximum temperature rating and the highest minimum temperature rating.

For cable length and temperature specifications, see the Stratix Ethernet Device Specifications Technical Data, publication 1783-TD002.

To insert or remove an SFP module into an SFP slot, follow these steps.

1. Attach an ESD-preventive wrist strap to your wrist and to a bare metal surface.
2. To insert an SFP module, do the following.
   a. Find the send (TX) and receive (RX) markings on the top of the module. On some SFP modules, the send and receive (TX and RX) markings are replaced by arrows that show the direction of the connection.
   b. If the module has a bale-clasp latch, move it to the open, unlocked position.
   c. Align the module in front of the slot opening and push until you feel the connector snap into place.

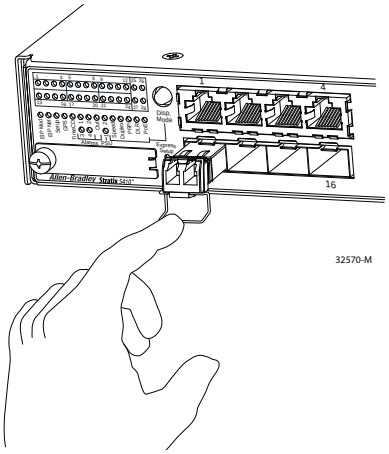


   d. If the module has a bale-clasp latch, close it.
   e. For fiber-optic SFP modules, remove the dust plugs and save.

ATTENTION: Do not remove the rubber plugs from the SFP module port or the rubber caps from the fiber-optic cable until you are ready to connect the cable. The plugs and caps protect the SFP module ports and cables from contamination and ambient light.

   f. Connect the SFP cables.

3. To remove an SFP module from an SFP slot, do the following.
   a. Disconnect the cable from the SFP module. For reattachment, note which cable connector plug is send (TX) and which is receive (RX).
   b. Insert a dust plug into the optical ports of the SFP module.
   c. If the module has a bale-clasp latch, pull the bale out and down to eject it. If the latch is obstructed and you cannot use your finger, use a small, flat-blade screwdriver or other long, narrow instrument.



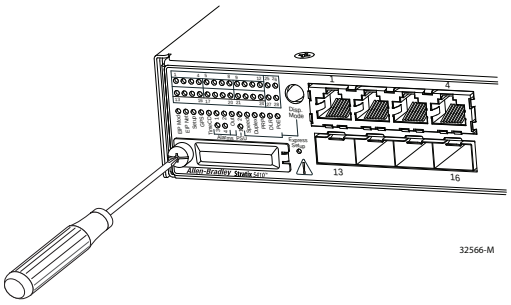
4. Grasp the SFP module, and carefully remove it from the slot.
5. Place the module in an antistatic bag or other protective environment.

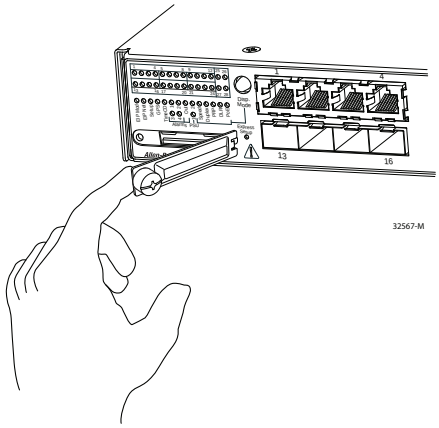
Install or Remove the SD Card

A secure digital (SD) card ships with the Stratix 5410 switch. The SD card contains the switch firmware and initial configuration. You can order a replacement SD card from Rockwell Automation, catalog number 1784-SD1, if needed. The replacement card ships without firmware and must be synced with the internal memory of the switch.

To install or replace the SD card, follow these steps.

1. On the front of the switch, locate the door that protects the SD card slot.
2. Loosen the captive thumb screw on the door by using a screwdriver and open the door.
   Use caution when removing the non-captive door.

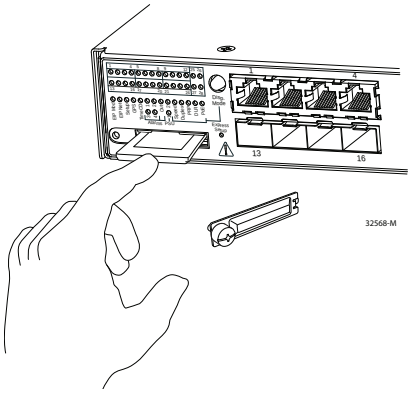




3. Install or remove the card.

   To install the card, slide it into the slot, and press it firmly in place until it latches in the spring loaded mechanism. The card is keyed so that you cannot fully insert it the wrong way.

   To remove the card, push it in and let it pop out via the spring-loaded mechanism. Grasp the card top and pull it out. Place it in an antistatic bag to protect it from static discharge.



4. Close the guard door and fasten the captive screw by using a screwdriver to keep the door in place.

Connect to 10/100/1000 Ethernet, PoE/PoE+ Ports

The 10/100/1000 ports on the switch automatically configure themselves to operate at the speed of attached devices. If the attached ports do not support autonegotiation, you can explicitly set the speed and duplex parameters. Connecting devices that do not autonegotiate or that have their speed and duplex parameters that are manually set can reduce performance or result in no linkage.

The Auto-MDIX feature is enabled by default. Unless this feature is disabled, you can use either straight-through or crossover cables to connect to other devices on the network.

To maximize performance, choose one of these methods for configuring the Ethernet ports:

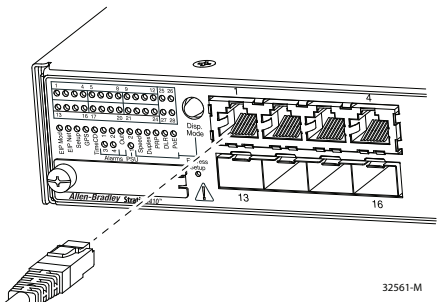
- Let the ports autonegotiate both speed and duplex
- Set the port speed and duplex parameters on both ends of the connection

To connect a device to a 10/100/1000 Ethernet, PoE/PoE+ port, follow these steps.

1. Choose one of these options:
   - If the auto-MDIX feature is enabled, connect either a crossover or straight-through cable to an RJ45 connector on the front panel. The default setting for auto-MDIX is enabled.
   - If auto-MDIX is disabled, use the following guidelines to choose the cable for connecting the 10/100/1000 Ethernet ports to other devices.

Device	Crossover Cable[1]	Straight-through Cable[1]
Switch to switch	Yes	No
Switch to hub	Yes	No
Switch to computer or server	No	Yes
Switch to router	No	Yes

(1) 100BASE-TX and 1000BASE-T traffic requires twisted four-pair, Category 5, Category 5e, or Category 6 cable. 10BASE-T traffic uses Category 3 or Category 4 cable.



2. Connect the other end of the cable to an RJ45 connector on the other device.

   The port status indicator turns on when both the switch and the connected device have an established link.

   The port status indicator is amber while Spanning Tree Protocol (STP) discovers the topology and searches for loops. This process can take as long as 30 seconds, and then the Port status indicator turns green.

   The following conditions can prevent the Port status indicator from turning On:

   - The device at the other end is not turned On.
   - A problem exists with a cable or the adapter that is installed in the attached device.
3. Reconfigure and restart the connected device if necessary.
4. To connect another device, repeat this procedure.

Connect to SFP/SFP+ Ports

To connect a fiber-optic cable to an SFP or SFP+ module, follow these steps.

1. Remove the rubber plugs from the module port and fiber-optic cable, and store them for future use.
2. Insert one end of the fiber-optic cable into the SFP module port.
3. Insert the other cable end into a fiber-optic receptacle on a target device.
4. Observe the port status indicator:
   - The status indicator turns amber while the SFP discovers the network topology and searches for loops. This process takes about 30 seconds, and then the port status indicator turns green.
   - The status indicator turns green when the switch and the target device have an established link.
   - The status indicator turns off if the target device is not turned on or there is a problem with the cable or the adapter in the target device.
5. If necessary, reconfigure and restart the switch or the target device.

Confirm Installation

Before installing the switch in its final location, power on the switch, and verify that the switch powers up.

The time that is required for the switch to start up is directly related to your switch configuration. Start time is negatively affected by such things as the following:

- Spanning Tree Learning mode
- Number of files or images in onboard memory

To test the switch, follow these steps.

1. Apply power to the switch.

   If the switch is directly connected to a power source, locate the circuit breaker on the panel board that services the circuit. Switch the circuit breaker to the On position.
2. Verify the start-up process.

   When you power on the switch, it begins a start-up process. The Setup status indicator blinks green as the IOS software image loads. If the process fails, the Setup status indicator turns red.

   IMPORTANT Start-up failures can be fatal to the switch. Contact your Rockwell Automation representative immediately if your switch does not complete the start-up process successfully.
3. After successfully running this test, do the following:
   a. Turn off power to the switch.
   b. Disconnect the cables.
   c. Decide where you want to install the switch.

Specifications

Attribute	1783-IMS28NDC, 1783-IMS28RDC, 1783-IMS28GNDC, 1783-IMS28GRDC	1783-IMS28NAC, 1783-IMS28RAC, 1783-IMS28GNAC, 1783-IMS28GRAC
Power input	24…60V DC, 10 A	100…240V AC, 50…60 Hz, 2 A (per slot) or 100…250V DC, 2 A (per slot)
PoE output, max	54V DC, 15.4 W	
PoE+ output, max	54V DC, 30 W	
Alarm relay	30V DC, 1 A or 48V DC, 0.5 A	
Torque, power supply mount screw	0.904…1.13 N•m (8…10 in•lb)	
Torque, power terminal screw	0.96 N•m (± 0.06 N•m) or 8.5 in•lb (± 0.5 in•lb)	
Torque, functional ground lug screw	3.39 N•m (± 0.23 N•m) or 30 in•lb (± 2 in•lb)	
Temperature, operating	-40 °C<Ta<+60 °C (-40…+140 °F)	
Temperature, ambient, max	60 °C (140 °F)	
Temperature, surrounding air, max	60 °C (140 °F)	
Enclosure type rating	None (open-style)	
Isolation voltage	60V (continuous), basic insulation type	
Wire size, Ethernet connections	RJ45 connector according to IEC 60603-7, 2 or 4 pair Category 5e minimum cable according to TIA 568-B.1 or Category 5 cable according to ISO/IEC 24702	
Wire size, functional ground	13.3 mm^2 (6 AWG) solid or stranded copper wire	
Wire size, alarm connections	Category 5e minimum cable according to TIA 568-B.1 or Category 5 cable according to ISO/IEC 24702	
Wire size, power supply	3.3 mm^2 (12 AWG) twisted-pair copper wire	1.3 mm^2 (16 AWG) twisted-pair copper wire
Wire type	Copper	
Pilot duty rating	Alarm not rated	
North American temp code	T4	
ATEX temp code	T4	
RED certification[1]	Hereby, Rockwell Automation declares that the radio equipment type Stratix 5410 is in compliance with Directive 2014/53/EU. The full text of the EU Declaration of Conformity is available at the following internet address: www.rockwellautomation.com.	

(1) For a complete list of Stratix 5410 certifications, see the Stratix Ethernet Device Specifications Technical Data, publication 1783-TD001.

Power Supply Specifications

Attribute	1783-IMXDC	1783-IMXAC
Input	24…60V DC, 10 A	100 …240V AC, 2.0 A or 100 …250V DC, 2.0 A
Output	-54V DC…2.9 A or 4.5V DC, 0.5 A	-54V DC, 2.9 A or 4.5V DC, 0.5A

Additional Resources

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

Resource	Description
Stratix Ethernet Device Specifications Technical Data, publication 1783-TD002	Provides specification information for Ethernet switches and other devices.
Stratix Ethernet Switches User Manual, publication 1783-UM007	Provides information about configuring, monitoring, and troubleshooting the switches.
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 http://www.rockwellautomation.com/global/literature-library/overview.page. To order paper copies of technical documentation, contact your local Allen-Bradley distributor or Rockwell Automation sales representative.

Notes:

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

Documentation Feedback

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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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