

# Installation Instructions

Original Instructions



**Allen-Bradley**

by ROCKWELL AUTOMATION

## ControlLogix 5590 Controllers

ControlLogix® 5590 Standard Controllers:	1756-L902TS, 1756-L905TS, 1756-L908TS, 1756-L915TS, 1756-L925TS, 1756-L950TS, 1756-L980TS
ControlLogix-XT™ 5590 Controllers:	1756-L902TSXT, 1756-L905TSXT, 1756-L908TSXT, 1756-L915TSXT, 1756-L925TSXT, 1756-L950TSXT, 1756-L980TSXT
ControlLogix-XT 5590 Process Controllers:	1756-L905TPSXT, 1756-L915TPSXT, 1756-L950TPSXT, 1756-L980TPSXT
ControlLogix 5590 Safety Partners:	1756-L9SP, 1756-L9SPXT

Topic	Page
Product Advisories	3
Parts List	5
Required System Components	5
Product Dimensions	5
Connectors and Status Indicators	6
Install the Controller	6
Install the microSD Card	7
Connect to an EtherNet/IP Network	7
Confirm Installation	7
Specifications - ControlLogix 5590 Standard Controllers	8
Specifications - ControlLogix-XT 5590 Controllers	8
Specifications - ControlLogix-XT 5590 Controllers	8
Additional Resources	9

The ControlLogix 5590 controllers are configurable for standard, safety, redundancy, and Logix SIS applications to help enable faster system performance, capacity, productivity, and security to help meet the growing demands of smart machines and equipment for manufacturing. Controllers with an 'XT' in the catalog number provide extended protection in corrosive gas environments.

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**IMPORTANT** When a ControlLogix product that is rated for harsh environments (corrosive atmosphere, extended temperature, etc.) is used in a system with other ControlLogix products that have lower specification values, the system is derated to the lowest common value.

**EXAMPLE:** If the maximum operating temperature specification found in the Technical Data for your ControlLogix-XT module is 70 °C (158 °F) and you pair it with a ControlLogix chassis that is temperature rated to 60 °C (140 °F), your system is derated to 60 °C (140 °F).

To ensure that your system is equipped for harsh environments, compare the corrosive atmosphere, temperature, and other specifications found in the Technical Data publication for each product.

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**ATTENTION:** Read this document and the documents listed in the Additional Resources section about installation, configuration and operation of this equipment before you install, configure, operate or maintain this product. Users are required to familiarize themselves with installation and wiring instructions in addition to requirements of all applicable codes, laws, and standards.

Activities including installation, adjustments, putting into service, use, assembly, disassembly, and maintenance are required to be carried out by suitably trained personnel in accordance with applicable code of practice. If this equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

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

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

如果未按照制造商指定的方式使用该设备，则可能会损害设备提供的保护。

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

如果將設備用於非製造商指定的用途時，可能會造成設備所提供的保護功能受損。

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

Činnosti zahrnující instalaci, nastavení, uvedení do provozu, užívání, montáž, demontáž a údržbu musí vykonávat 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 zapewniające przez urządzenie może zostać ograniczone.

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

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

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

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

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

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

## Summary of Changes

This manual contains new and updated information. This list includes substantive updates only and is not intended to reflect all changes.

Topic	Page
Added 1756-L9SP catalog number	Throughout
Added SIL 3 information	Throughout

## Product Advisories



### ATTENTION:

- In case of malfunction or damage, no attempts at repair should be made. The controller should be returned to the manufacturer for repair. Do not dismantle the controller.
- The USB port is intended for temporary local programming purposes only and not intended for permanent connection. The USB cable is not to exceed 3.0 m (9.84 ft) and must not contain hubs.
- Use only a soft dry anti-static cloth to wipe down equipment. Do not use any cleaning agents.
- When ControlLogix 5590 standard controllers are installed in a 1756 series B chassis, this equipment is certified for use only within the surrounding air temperature range of 0...50 °C (32...122 °F). The equipment must not be used outside of this range.
- When ControlLogix 5590 standard controllers are installed in a 1756 series C chassis, this equipment is certified for use only within the surrounding air temperature range of 0...60 °C (32...140 °F). The equipment must not be used outside of this range.
- When ControlLogix-XT 5590 Process controllers are installed in a 1756 Series B Chassis, this equipment is certified for use only within the surrounding air temperature range of -25...+50 °C (-13...+122 °F). The equipment must not be used outside of this range.
- When ControlLogix-XT 5590 controllers and ControlLogix-XT 5590 Process controllers are installed in a 1756 Series C Chassis, this equipment is certified for use only within the surrounding air temperature range of -25...+60 °C (-13...+140 °F). The equipment must not be used outside of this range.
- When ControlLogix-XT 5590 controllers and ControlLogix-XT 5590 Process controllers are installed in a ControlLogix-XT series C chassis, this equipment is certified for use only within the surrounding air temperature range of -25...+70 °C (-13...+158 °F). The equipment must not be used outside of this range.
- When ControlLogix-XT 5590 controllers and ControlLogix-XT 5590 Process controllers are installed in a ControlLogix-ZXT chassis, this equipment is certified for use only within the surrounding air temperature range of -25...+70 °C (-13...+158 °F). The equipment must not be used outside of this range.



**ATTENTION:** Personnel responsible for the application of safety-related programmable electronic systems (PES) shall be aware of the safety requirements in the application of the system and shall be trained in using the system.

### IMPORTANT


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

## 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.
<p><b>WARNING:</b> <b>Explosion Hazard -</b></p> <ul style="list-style-type: none"> <li>• Do not disconnect equipment unless power has been removed or the area is known to be nonhazardous.</li> <li>• 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.</li> <li>• Substitution of components may impair suitability for Class I, Division 2.</li> <li>• If this product contains batteries, they must only be changed in an area known to be nonhazardous.</li> </ul>	<p><b>AVERTISSEMENT:</b> <b>Risque d'Explosion -</b></p> <ul style="list-style-type: none"> <li>• Couper le courant ou s'assurer que l'environnement est classé non dangereux avant de débrancher l'équipement.</li> <li>• 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.</li> <li>• La substitution de composants peut rendre cet équipement inadapté à une utilisation en environnement de Classe I, Division 2.</li> <li>• S'assurer que l'environnement est classé non dangereux avant de changer les piles.</li> </ul>

### European Hazardous Location Approval

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The following applies to products marked , II 3 G. Such products:

- 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, see EU Declaration of Conformity at [rok.auto/certifications](http://rok.auto/certifications) for details.
  - The type of protection is <Ex ec IIC T4 Gc> Equipment protection by increased safety "e". UL 22 ATEX 2817X.
  - 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 ATEX directive 2014/34/EU.
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### IEC Hazardous Location Approval

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The following applies to products with IECEx certification.

- Such products 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.
  - The type of protection is Ex ec IIC T4 Gc.
  - IECEx certificate number IECEx UL 22.0062X.
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### European Machinery Directive Approval

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The following applies to products with EU Machinery Directive certification:

- Are in conformity with the essential requirements of the EU Machinery Directive (2006/42/EC) when installed in accordance with the instructions contained in the product documentation.
- When a ControlLogix 5590 controller is enabled for safety and used in combination with the 1756-L9SP or 1756-L9SPXT safety partner, the type of protection is:
  - Cat. 4/PLe according to EN ISO 13849-1:2023
  - SIL CL 3 according to IEC-61508:2010
- When a ControlLogix 5590 controller is enabled for safety and not used in combination with the 1756-L9SP or 1756-L9SPXT safety partner, the type of protection is:
  - Cat. 3/PLd according to EN ISO 13849-1:2023
  - SIL CL 2 according to IEC-61508:2010
- Comply to Standards EN ISO 13849-1 and reference EC-Type certificate number TÜV 01/205/6058.

See the Product Certification link at [rok.auto/certifications](http://rok.auto/certifications) or Declarations of Conformity, Certificates, and other certification details including a full list of safety-related certifications.

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### Special Condition of Use

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#### WARNING:

- This equipment is not resistant to sunlight or other sources of UV radiation.
  - This equipment shall be mounted in an 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.
  - Provision shall be made to prevent the rated voltage from being exceeded by transient disturbances of more than 140% of the peak rated voltage when applied in Zone 2 environments.
  - The instructions in the user manual shall be observed.
  - 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.
  - This equipment must be used only with ATEX/IECEx certified Rockwell Automation® backplanes.
  - The USB port is intended for temporary local programming purposes only and not intended for permanent connection. If you connect or disconnect the USB cable with power applied to this module or any device on the USB network, an electric arc can occur. This could cause an explosion in hazardous location installations. Do not use the USB port in hazardous locations. Be sure that power is removed or the area is nonhazardous before proceeding.
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### Environment and Enclosure

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#### ATTENTION:

This equipment is intended for use in a Pollution Degree 2 industrial environment, in overvoltage Category II applications (as defined in EN IEC 60664-1), at altitudes up to 2000 m (6562 ft) without derating.

This equipment isn't 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 non-metallic. 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 different types of enclosure.
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**IMPORTANT** ControlLogix 5590 controllers require a NEMA 1 or equivalent, windowless, metal enclosure.

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## Parts List

The controller ships with these parts:

- 8 GB microSD™ card (1784-MSD8, 1784-MSD8XT), preinstalled in the controller

## Required System Components

To use the controller, a chassis and power supply are required. For controller and chassis operating specifications, see the 1756 ControlLogix Controller Specifications Technical Data, publication [1756-TD001](#).

Before you install the controller, make sure to see these ControlLogix Chassis and Power Supply Installation Instructions:

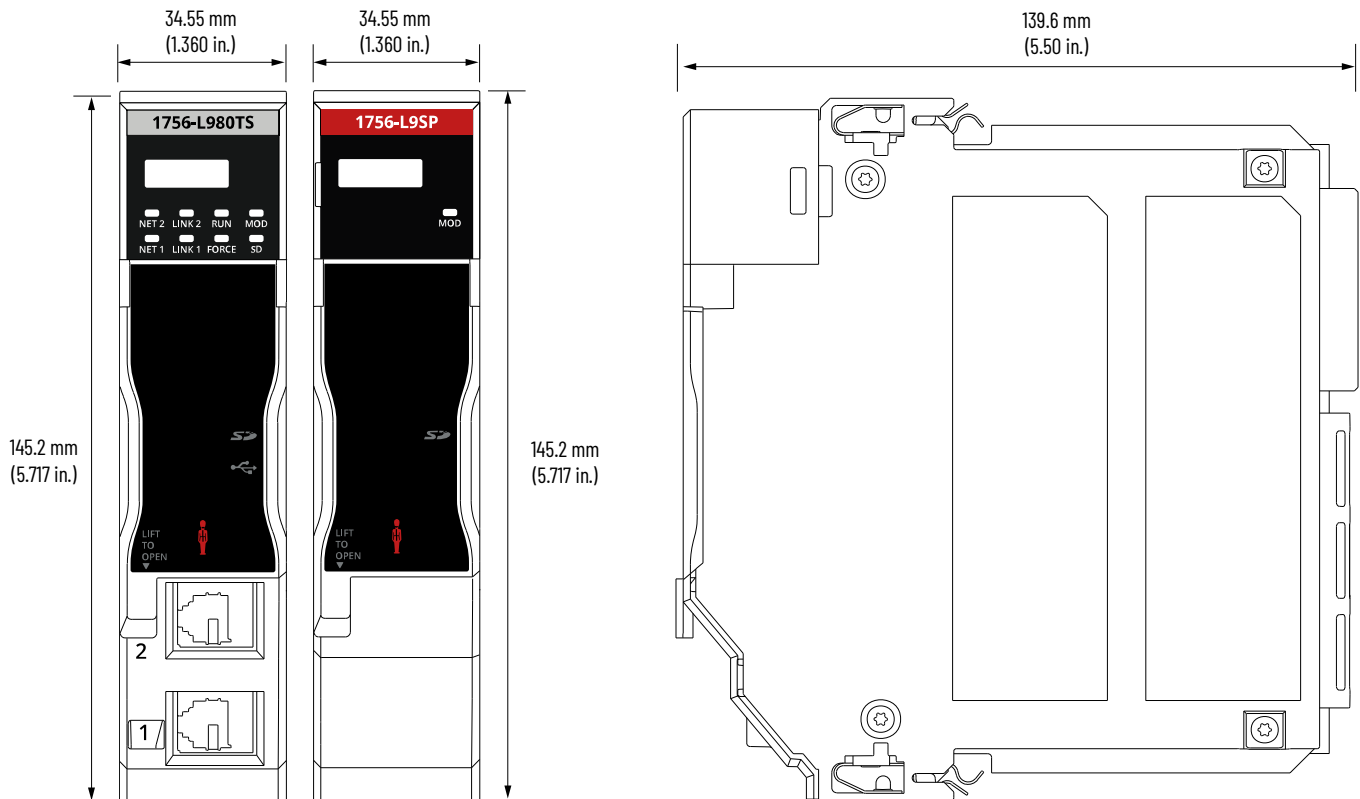
- ControlLogix Chassis Installation Instructions, publication [1756-IN621](#)
- ControlLogix Power Supply Installation Instructions, publication [1756-IN619](#)
- ControlLogix Redundant Power Supply Installation Instructions, publication [1756-IN620](#)

Component	Catalog Number
ControlLogix Chassis, series C and series B	1756-A4, 1756-A4K, 1756-A7, 1756-A7K, 1756-A10, 1756-A10K, 1756-A13, 1756-A13K, 1756-A17, 1756-A17K
ControlLogix Power Supply	1756-PA72, 1756-PA72K, 1756-PA75, 1756-PA75K, 1756-PB72, 1756-PB72K, 1756-PB75, 1756-PB75K, 1756-PC75, 1756-PH75 1756-PA50, 1756-PA50K, 1756-PB50, 1756-PB50K 1756-PA75R, 1756-PA75RK, 1756-PB75R, 1756-PB75RK, 1756-PSCA2, 1756-PSCA2K
ControlLogix-ZXT Chassis or ControlLogix-XT Chassis, series C	1756-A7ZXT, 1756-A10ZXT 1756-A7XT, 1756-A10XT
ControlLogix-XT Power Supply	1756-PAXT, 1756-PBXT 1756-PA30XT, 1756-PB30XT 1756-PAXTR, 1756-PBXTR 1756-PA75XT, 1756-PB75XT



**ATTENTION:** If you are using a ControlLogix 5590 standard controller to the maximum temperature of 60 °C (140 °F), you must use a ControlLogix chassis, series C. If you are using a ControlLogix-XT 5590 or ControlLogix-XT 5590 Process controller to the maximum temperature of 70 °C (158 °F), you must use a ControlLogix-ZXT chassis or a ControlLogix-XT chassis, series C.

## Product Dimensions

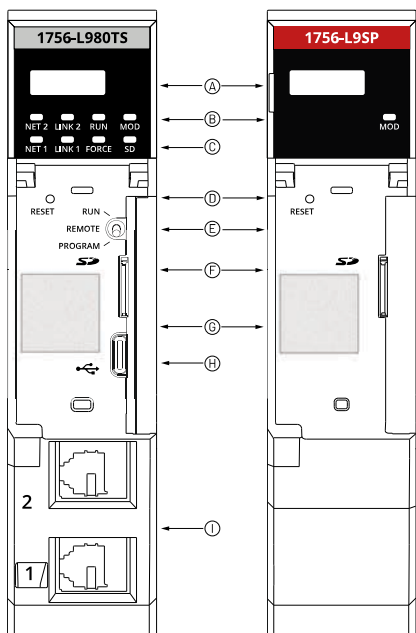


Front view: ControlLogix 5590 Controller, ControlLogix 5590 Safety Partner

Side view: ControlLogix 5590 Controller, ControlLogix 5590 Safety Partner

## Connectors and Status Indicators

This panel resides behind the front door.



Letter	Item	Description
A	4-character display	Scrolls information about the module.
B	Module Status Indicators	Indicates the current state of the module (MOD, RUN, FORCE, SD).
C	Ethernet Status Indicators	Indicates the current state of transmission of data on the EtherNet/IP™ network (LINK, NET).
D	Reset Button	<b>ControlLogix 5590 controller:</b> Stage 1 reset clears the application program and memory, retains the IP address, and retains all network settings. Stage 2 reset returns the controller to out-of-box settings (including firmware). <b>ControlLogix 5590 safety partner:</b> Returns the safety partner to out-of-box settings (including firmware).
E	Mode switch (Remote, Run, Program)	3-position toggle switch.
F	microSD card slot	8 GB microSD Card (1784-MSD8, 1784-MSD8XT) included.
G	QR Code	Scan to access product information and support.
H	USB-C Port	Connect a USB-C cable or dongle.
I	Ethernet Ports 1 and 2	Dual, 1 Gb embedded Ethernet ports. Configurable for Dual-IP Addresses or DLR.

## QR Code

### IMPORTANT

- Verify the QR Code: Before scanning, check that the QR Code is laser-etched directly onto the device. This ensures it is the original and has not been tampered with.
- Avoid Modified QR Codes: If you see any labels, stickers, or other materials covering or altering the QR Code, do not use it. These modifications could lead to unsafe or incorrect links.
- Report Suspicious QR Codes: If you encounter a QR Code that looks tampered with, report it to your support team for further investigation.
- Use Trusted Scanning Apps: Ensure you use a reliable QR Code scanning app to avoid potential security risks.

## Install the Controller



**ATTENTION:** Select products that are rated for corrosive atmospheres ship with port plugs, covers, or memory cards installed which provide connectors with a degree of protection in corrosive gas environments. Once the factory packaging seal is broken, plugs or covers must remain installed in all unoccupied ports and memory cards must remain installed for the product to maintain its corrosive atmosphere rating. If temporary access is required, port plugs, covers, memory cards, and so on can be removed, but must be reinstalled after temporary access is complete.



**WARNING:** When you insert or remove the controller 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 electrical arcing causes excessive wear to contacts on both the controller and its mating connector. Worn contacts can create electrical resistance that can affect controller operation.



**WARNING:** When you press the reset button while 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.

When installing a controller, you can do the following:

- Place the controller in any slot.
- Use multiple controllers in the same chassis.
- For redundancy or Logix SIS applications, place the controllers in the same slot in each chassis.
- For SIL 3/PLE safety applications, install the safety partner in the slot immediately to the right of the primary controller.

You can install or remove a controller while chassis power is on and the system is operating.



**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:

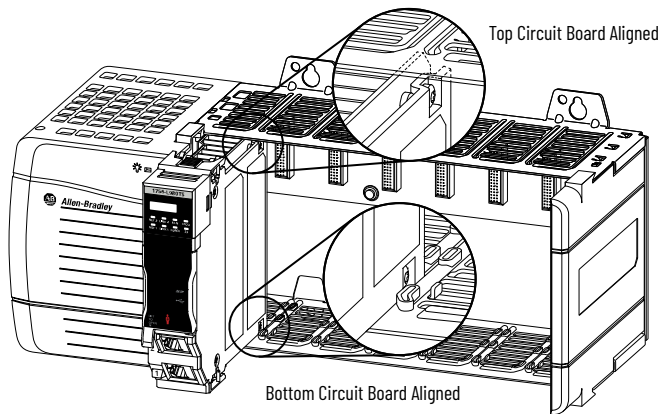
- Touch a grounded object to discharge potential static.
- Wear an approved grounding wriststrap.
- Do not touch connectors or pins on component boards.
- Do not touch circuit components inside the equipment.
- Use a static-safe workstation, if available.
- Store the equipment in appropriate static-safe packaging when not in use.

- If you are using a ControlLogix-ZXT chassis, remove the backplane connector cover from the slot into which you're installing the controller.

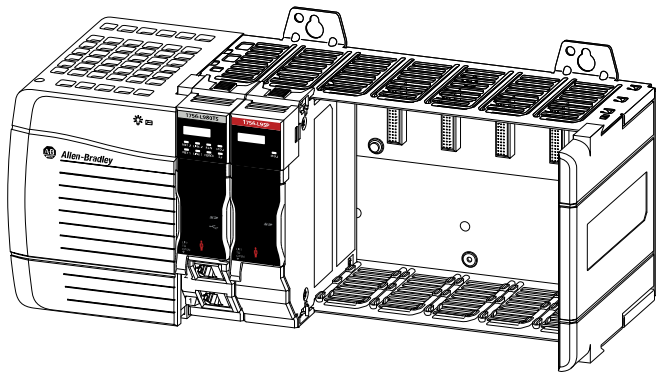


**ATTENTION:** Select ControlLogix chassis are shipped with backplane connector covers installed to provide a degree of protection from corrosive atmospheres. Once the factory packaging seal is broken, these covers must remain installed in unused slots at all times for the chassis to maintain its corrosive atmosphere rating. If components installed into the chassis are later removed, reinstall a backplane connector cover in the vacated slot to maintain the corrosive atmosphere rating of the chassis.

- Align the circuit board with the top and bottom guides in the chassis.



- Slide the controller into the chassis until it snaps into place.
- Verify that the controller is flush with the power supply, modules, or other installed system components.
- For SIL 3/PLe safety applications, repeat steps 1...4 to install the safety partner in the slot immediately to the right of the primary controller.



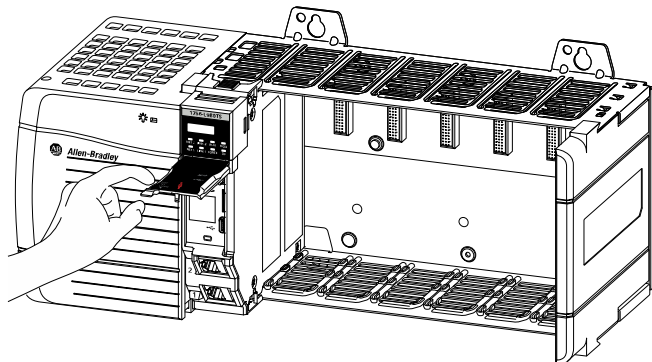
## Install the microSD Card



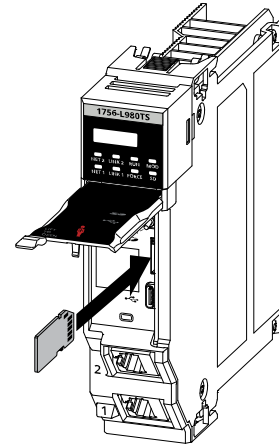
**WARNING:** When you insert or remove the microSD memory card while power is on, an electric arc can occur. This could cause an explosion in hazardous location installations. Be sure that power is removed or the area is nonhazardous before proceeding.

If the microSD card is not already installed in the controller, then complete these steps to install the microSD card.

- To access the microSD card slot, use the tab to lift the door.



- Position the microSD card so that the contact end goes into the controller, with the contacts on the right and the label on the left.



- Insert the microSD card into the card slot and gently press the card until it clicks into place.
- The card slides in easily, if it is oriented correctly. You can insert the card only one way.
- Close the door.

## Confirm Installation

After you have inserted the controller into the chassis and applied power, the 4-character display and status indicators display status information for the controller.

For information on how to interpret the 4-character display messages and the status indicators, see the ControlLogix 5590 Controllers User Manual, publication [1756-UM900](#).

## Connect to an EtherNet/IP Network

By default, the controllers are configured to use Dual-IP mode, and each Ethernet port is DHCP-enabled. Dual-IP mode requires a unique IP address for each Ethernet port. The controllers also support Linear/DLR mode, a mode that requires only one IP address.

For more information on how to set the IP address for a controller that uses Dual-IP or Linear/DLR mode, see the ControlLogix 5590 Controllers User Manual, publication [1756-UM900](#).

If you are connecting the controller directly to an EtherNet/IP network, then connect an RJ45 cable to an Ethernet port on the controller.



**WARNING:** If you connect or disconnect the communications cable with power applied to this controller 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.



**ATTENTION:** 10 Mbps Ethernet automatic negotiations are functional, however, they are not fully supported or intended for normal use. Use 10 Mbps Ethernet connections, only if necessary, during temporary setup.

## Specifications - ControlLogix 5590 Standard Controllers

Attribute	1756-L902TS, 1756-L905TS, 1756-L908TS, 1756-L915TS, 1756-L925TS, 1756-L950TS, 1756-L980TS, 1756-L9SP
Temperature, operating IEC 60068-2-1 (Test Ad, Operating Cold), IEC 60068-2-14 (Test Nb, Operating Thermal Shock)	0 °C ≤ Ta ≤ +60 °C (+32 °F ≤ Ta ≤ +140 °F) Standard Chassis, Series C 0 °C ≤ Ta ≤ +50 °C (+32 °F ≤ Ta ≤ +122 °F) Standard Chassis, Series B
Conformal coated	No
Enclosure type rating	None (open-style)
Voltage and current ratings	1.2 A @ 5.1V DC 5 mA @ 1.2V DC
Isolation voltage	50V (continuous), Basic Insulation type, USB port to Backplane, Ethernet port to Backplane, and USB Port to Ethernet port.
Wire size	Ethernet cabling and installation according to IEC 61918 and IEC 61784-5-2
Temperature code	T4

## Specifications - ControlLogix-XT 5590 Controllers

Attribute	1756-L902TSXT, 1756-L905TSXT, 1756-L908TSXT, 1756-L915TSXT, 1756-L925TSXT, 1756-L950TSXT, 1756-L980TSXT, 1756-L9SPXT
Temperature, operating IEC 60068-2-1 (Test Ad, Operating Cold), IEC 60068-2-14 (Test Nb, Operating Thermal Shock)	-25 °C ≤ Ta ≤ +70 °C (-13°F ≤ Ta ≤ +158 °F)
Conformal coated	Yes
Corrosive atmosphere • ASTM B845-97 Method K Accelerated Test (30-Day Exposure) • Plus additional Rockwell Automation proprietary accelerated corrosive environment test protocol for specific industries with sources of gaseous sulfur compounds.	Severity Level GX <sup>(1)(2)</sup> per ANSI/ISA 71.04-2013, Airborne Contaminants—Gases Severity Level CX <sup>(1)</sup> per IEC 60721-3-3:2019, Chemically Active Substances
Enclosure type rating	None (open-style)
Voltage and current ratings	1.2 A @ 5.1V DC 5 mA @ 1.2V DC
Isolation voltage	50V (continuous), Basic Insulation type, USB port to Backplane, Ethernet port to Backplane, and USB Port to Ethernet port.
Wire size	Ethernet cabling and installation according to IEC 61918 and IEC 61784-5-2. Where the operating temperature exceeds 60 °C, the maximum cable length is 20 meters.
Temperature code	T4

(1) Once the factory packaging seal is broken, plugs or covers must remain installed in all unoccupied ports and memory cards must remain installed for the product to maintain its corrosive atmosphere rating.  
 (2) Up to 2100 angstroms of film growth per 30 days of copper and/or silver reactivity.

## Specifications - ControlLogix-XT 5590 Process Controllers

Attribute	1756-L905TPSXT, 1756-L915TPSXT, 1756-L950TPSXT, 1756-L980TPSXT
Temperature, operating IEC 60068-2-1 (Test Ad, Operating Cold), IEC 60068-2-14 (Test Nb, Operating Thermal Shock)	-25 °C ≤ Ta ≤ +70 °C (-13°F ≤ Ta ≤ +158 °F)
Conformal coated	Yes
Corrosive atmosphere • ASTM B845-97 Method K Accelerated Test (30-Day Exposure) • Plus additional Rockwell Automation proprietary accelerated corrosive environment test protocol for specific industries with sources of gaseous sulfur compounds.	Severity Level GX <sup>(1)(2)</sup> per ANSI/ISA 71.04-2013, Airborne Contaminants—Gases Severity Level CX <sup>(1)</sup> per IEC 60721-3-3:2019, Chemically Active Substances
Enclosure type rating	None (open-style)
Voltage and current ratings	1.2 A @ 5.1V DC 5 mA @ 1.2V DC
Isolation voltage	50V (continuous), Basic Insulation type, USB port to Backplane, Ethernet port to Backplane, and USB Port to Ethernet port.
Wire size	Ethernet cabling and installation according to IEC 61918 and IEC 61784-5-2. Where the operating temperature exceeds 60 °C, the maximum cable length is 20 meters.
Temperature code	T4

(1) Once the factory packaging seal is broken, plugs or covers must remain installed in all unoccupied ports and memory cards must remain installed for the product to maintain its corrosive atmosphere rating.  
 (2) Up to 2100 angstroms of film growth per 30 days of copper and/or silver reactivity.

## Additional Resources

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

Resource	Description
1756 ControlLogix and GuardLogix Controller Specifications Technical Data, publication <a href="#">1756-TD001</a>	Provides controller specifications, including communication options, memory use, compatibilities, redundancy, and available accessories.
1756 ControlLogix Power Supplies Specifications Technical Data, publication <a href="#">1756-TD005</a>	Provides technical specifications for ControlLogix power supplies.
1756 ControlLogix Chassis Specifications Technical Data, publication <a href="#">1756-TD006</a>	Provides chassis specifications, including spacing requirements, mounting dimensions, and available accessories.
ControlLogix Chassis Installation Instructions, publication <a href="#">1756-IN621</a>	Provides information on how to install ControlLogix chassis.
ControlLogix Power Supply Installation Instructions, publication <a href="#">1756-IN619</a>	Provides information on how to install ControlLogix standard power supplies.
ControlLogix Redundant Power Supply Installation Instructions, publication <a href="#">1756-IN620</a>	Provides information on how to install ControlLogix redundant power supplies.
ControlLogix 5590 Controllers User Manual, publication <a href="#">1756-UM900</a>	Provides information on how to configure, select I/O modules, manage communication, develop applications, and troubleshoot the ControlLogix 5590 controllers.
ControlLogix 5590 High Availability Systems User Manual, publication <a href="#">1756-UM901</a>	Describes how to design, configure, program, monitor, and troubleshoot ControlLogix 5590 Logix SIS and redundancy systems.
Replacement Guidelines: Logix 5000 Controllers Reference Manual, publication <a href="#">1756-RM100</a>	Compares ControlLogix controllers, and provides guidelines on the features, functions, instruction updates, and differences between controllers.
Industrial Automation Wiring and Grounding Guidelines, publication <a href="#">1770-4.1</a>	Provides general guidelines for installing a Rockwell Automation industrial system.
Product Certifications website, <a href="http://rok.auto/certifications">rok.auto/certifications</a>	Provides declarations of conformity, certificates, and other certification details.

You can view or download publications at [rok.auto/literature](http://rok.auto/literature).

**Notes:**

**Notes:**

## Rockwell Automation Support

Use these resources to access support information.

<b>Technical Support Center</b>	Find help with how-to videos, FAQs, chat, user forums, Knowledgebase, and product notification updates.	<a href="http://rok.auto/support">rok.auto/support</a>
<b>Local Technical Support Phone Numbers</b>	Locate the telephone number for your country.	<a href="http://rok.auto/phonesupport">rok.auto/phonesupport</a>
<b>Technical Documentation Center</b>	Quickly access and download technical specifications, installation instructions, and user manuals.	<a href="http://rok.auto/techdocs">rok.auto/techdocs</a>
<b>Literature Library</b>	Find installation instructions, manuals, brochures, and technical data publications.	<a href="http://rok.auto/literature">rok.auto/literature</a>
<b>Product Compatibility and Download Center (PCDC)</b>	Download firmware, associated files (such as AOP, EDS, and DTM), and access product release notes.	<a href="http://rok.auto/pcdc">rok.auto/pcdc</a>

## 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](http://rok.auto/pec).

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