



**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 „Literaturverweise“ genannten Dokumente zur Installation, Konfiguration und Bedienung dieser Ausrüstung sorgfältig durch, bevor Sie dieses Produkt installieren, konfigurieren, bedienen oder instandsetzen. Benutzer müssen sich mit den Anweisungen zur Installation und Verdrahtung vertraut machen und müssen die Anforderungen aller geltenden Vorschriften, Gesetze und Normen kennen.

Aktivitäten wie Installation, Einstellung, Inbetriebnahme, Verwendung, Montage, Demontage und Instandsetzung müssen durch ausreichend geschultes Personal in Übereinstimmung mit den geltenden Durchführungsvorschriften ausgeführt werden.

Wenn diese Ausrüstung in einer Weise verwendet wird, die nicht vom Hersteller angegeben wurde, kann der von der Ausrüstung bereitgestellte Schutz 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, ayarlar, hizmete alma, kullanma, parçaları birleştirme, parçaları sökme ve bakım gibi aktiviteler sadece uygun eğitimli 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過適當訓練的人員進行，以符合適用的實作法規。

如果將設備用於非製造商指定的用途時，可能會造成設備所提供的保護功能受損。

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

Činnosti zahrnující instalaci, nastavení, uvedení do provozu, užívání, montáž, demontáž a údržbu musí vykonávat vhodné proškolený personál v souladu s příslušnými prováděcími předpisy.

Pokud se toto zařízení používá způsobem neodpovídajícím specifikaci výrobce, může být narušena ochrana, kterou toto zařízení poskytuje.

**UWAGA:** Przed instalacją, konfiguracją, użytkowaniem lub konserwacją tego produktu należy przeczytać niniejszy dokument oraz wszystkie dokumenty wymienione w sekcji Dodatkowe źródła omawiające instalację, konfigurację i procedury użytkowania tego urządzenia. Użytkownicy mają obowiązek zapoznać się z instrukcjami dotyczącymi instalacji oraz oprowadowania, jak również z obowiązującymi kodeksami, prawem i normami.

Działania obejmujące instalację, regulację, przekazanie do użytkowania, użytkowanie, montaż, demontaż oraz konserwację muszą być wykonywane przez odpowiednio przeszkolony personel zgodnie z obowiązującym kodeksem postępowania.

Jeśli urządzenie jest użytkowane w sposób inny niż określony przez producenta, zabezpieczenie zapewniane przez urządzenie może zostać ograniczone.

**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, 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.

## Marking

Analog Input  
1719-IF4HB

Manufacturer: Pepperl+Fuchs GmbH  
Lilienthalstraße 200, 68307 Mannheim, Germany

EC-Type Examination Certificate: BVS 12 ATEX E 024 X

Group, category, type of protection, temperature class:  $\text{Ex}$  II 3(1) G Ex nA [ia Ga] IIC T4 Gc  $\text{Ex}$  II (1) D [Ex ia Da] IIIC

## Validity

This document contains safety relevant instructions for installation, configuration, operation, and maintenance of the product.

Specific processes and instructions in this product information sheet require special provisions to guarantee the safety of the operating personnel.

Observe laws, standards, and directives applicable to the intended use and the operating location. Observe Directive 1999/92/EC in relation to hazardous areas.

Observe laws, standards, and directives applicable to the intended use and the operating location.

If the device replaces a predecessor device, the documentation for the verification of intrinsic safety must be adjusted. The corresponding technical data sheets, declarations of conformity, EC-type examination certificates, certificates and control drawings if applicable (see technical data sheet) are an integral part of this document. You can find this information under <http://www.rockwellautomation.com/literature>.

Due to constant revisions, documentation is subject to permanent change. Please refer only to the most up-to-date version, which can be found under <http://www.rockwellautomation.com/literature>.

## Target Group, Personnel

Responsibility for planning, assembly, commissioning, operation, maintenance, and dismantling lies with the plant operator.

Mounting, installation, commissioning, operation, maintenance and dismantling of the device may only be carried out by appropriate trained and qualified personnel. The product information sheet must be read and understood.

## Intended Use

The device is only approved for appropriate and intended use. Ignoring these instructions will void any warranty and absolve the manufacturer from any liability.

Use the device only within the specified ambient conditions.

Only use the device stationary.

The device is an electrical apparatus for hazardous areas of Zone 2.

The device is an associated apparatus according to IEC/EN 60079-11.

The I/O modules, com units, and power supplies of the remote I/O system must only be used together with the associated backplanes.

The backplane connections are non-intrinsically safe.

The I/O modules of the remote I/O system act as an interface between signals from the hazardous area and the non-hazardous area.

## Improper Use

Protection of the personnel and the plant is not ensured if the device is not being used according to its intended use.

The device is not suitable for isolating signals in power installations unless this is noted separately in the corresponding technical data sheet.

## Mounting and Installation

Prior to mounting, installation, and commissioning of the device you should make yourself familiar with the device and carefully read the product information sheet.

Observe the product information sheets for the associated backplanes.

The device must only be operated in the specified ambient temperature range and at the specified relative humidity without condensation.

Do not mount the device at locations where an aggressive atmosphere may be present.

The device must be installed and operated only in an environment that ensures a pollution degree 2 (or better) according to IEC/EN 60664-1.

If used in areas with higher pollution degree, the device needs to be protected accordingly.

All circuits connected to the device must comply with the overvoltage category II (or better) according to IEC/EN 60664-1.

Do not mount a damaged or polluted device.

Only use accessories specified by the manufacturer.

Do not push the modules into the slots with too much force. The rear connections of the devices may be damaged if using excessive force.

Only plug and pull the energized module in the absence of a potentially explosive atmosphere.

Observe the installation instructions according to IEC/EN 60079-14.

Connection or disconnection of energized non-intrinsically safe circuits is only permitted in the absence of a potentially explosive atmosphere.

Before connecting or disconnecting circuits in the presence of a potentially explosive atmosphere, ensure that all non-intrinsically safe circuits are voltage-free and currentless.

## Requirements for Equipment Protection Level Gc

The device must be installed and operated only in surrounding enclosures that

- comply with the requirements for surrounding enclosures according to IEC/EN 60079-0,
- are rated with the degree of protection IP54 according to IEC/EN 60529.

## Requirements for Cables and Connection Lines

Observe the following points when installing cables and connection lines:

Observe the permissible core cross-section of the conductor.

The insulation stripping length must be considered.

When installing the conductors the insulation must reach up to the terminal.

If you use stranded conductors, crimp wire end ferrules on the conductor ends.

Never pull the cable. A wire could become loose from the terminal and protection against electric shock can no longer be ensured. Always pull the terminal.

Unused cables and connection lines must be either connected to terminals or securely tied down and isolated.

## Requirements for Usage as Associated Apparatus

If circuits with type of protection Ex i are operated with non-intrinsically safe circuits, they must no longer be used as circuits with type of protection Ex i.

Intrinsically safe circuits of associated apparatus (installed in nonhazardous area) can be led into hazardous areas. Observe the compliance of the separation distances to all non-intrinsically safe circuits according to IEC/EN 60079-14.

Observe the compliance of the separation distances between two adjacent intrinsically safe circuits according to IEC/EN 60079-14.

Observe the maximum values of the device, when connecting the device to intrinsically safe apparatus.

The respective peak values of the field device and the associated apparatus with regard to explosion protection should be considered when connecting intrinsically safe field devices with intrinsically safe circuits of associated apparatus (verification of intrinsic safety). Make sure to observe IEC/EN 60079-14 and IEC/EN 60079-25.

If more channels of one device are connected in parallel, ensure the parallel connection is made directly at the terminals of the device. When verifying the intrinsic safety, observe the maximum values for the parallel connection.

If no  $L_0$  and  $C_0$  values are specified for the simultaneous appearance of lumped inductances and capacitances, the following rule applies.

- The specified value for  $L_0$  and  $C_0$  is used if one of the following conditions applies:
  - The circuit has distributed inductances and capacitances only, e. g., in cables and connection lines.
  - The total value of  $L_1$  (excluding cable) of the circuit is < 1% of the specified  $L_0$  value.
  - The total value of  $C_1$  (excluding cable) of the circuit is < 1% of the specified  $C_0$  value.
- A maximum of 50% of the specified value for  $L_0$  and  $C_0$  is used if the following condition applies:
  - The total value of  $L_1$  (excluding cable) of the circuit is  $\geq$  1% of the specified  $L_0$  value.
  - The total value of  $C_1$  (excluding cable) of the circuit is  $\geq$  1% of the specified  $C_0$  value.
- The reduced capacitance for gas groups I, IIA and IIB must not exceed the value of 1  $\mu\text{F}$  (including cable). The reduced capacitance for gas group IIC must not exceed the value of 600 nF (including cable).

## Requirements for Non-Hazardous Areas

The device must be installed and operated only in surrounding enclosures that

- comply with the requirements for surrounding enclosures according to IEC/EN 60079-0,
- are rated with the degree of protection IP54 according to IEC/EN 60529.

Alternatively, it is permitted to install and operate the device in a controlled environment that ensures a pollution degree 2 according to IEC/EN 60664-1.

## Operation, Maintenance, Repair

Prior to using the device you should make yourself familiar with the device and carefully read the product information sheet.

Substitution of components may impair intrinsic safety.

Substitution of components may impair suitability for Zone 2.

Do not use a damaged or polluted device.

Only use accessories specified by the manufacturer.

The device must not be repaired, changed or manipulated.

If there is a defect, always replace the device with an original device from Rockwell Automation.

Do not push the modules into the slots with too much force. The rear connections of the devices may be damaged if using excessive force.

Only plug and pull the energized module in the absence of a potentially explosive atmosphere.

Observe IEC/EN 60079-17 for maintenance and inspection of associated apparatus.

Connection or disconnection of energized non-intrinsically safe circuits is only permitted in the absence of a potentially explosive atmosphere.

Before connecting or disconnecting circuits in the presence of a potentially explosive atmosphere, ensure that all non-intrinsically safe circuits are voltage-free and currentless.

## Requirements for Cables and Connection Lines

Observe the following points when installing cables and connection lines:

Observe the permissible core cross-section of the conductor.

The insulation stripping length must be considered.

When installing the conductors the insulation must reach up to the terminal.

If you use stranded conductors, crimp wire end ferrules on the conductor ends.

Never pull the cable. A wire could become loose from the terminal and protection against electric shock can no longer be ensured. Always pull the terminal.

Unused cables and connection lines must be either connected to terminals or securely tied down and isolated.

## Delivery, Transport, Disposal

Check the packaging and contents for damage.

Check if you have received every item and if the items received are the ones you ordered.

Keep the original packaging. Always store and transport the device in the original packaging.

Store the device in a clean and dry environment. The permitted ambient conditions (see technical data sheet) must be considered.

Disposing of device, packaging, and possibly contained batteries must be in compliance with the applicable laws and guidelines of the respective country.



At the end of its life, this equipment should be collected separately from any unsorted municipal waste.

## Additional Resources

These documents contain more information about related products from Rockwell Automation.

Resource	Description
1719 Ex I/O Technical Data sheet, publication <a href="#">1719-TD001</a> .	Provides complete technical data for each product in the 1719 Ex I/O family.
1719 Ex I/O User Manual, publication <a href="#">1719-UM001</a> .	User manual for the 1719 Ex I/O family.
1719 Ex I/O Installation Manual, publication <a href="#">1719-IN001</a> .	Provides installation instructions for 1719 Ex I/O modules.
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://www.rockwellautomation.com/products/certification">http://www.rockwellautomation.com/products/certification</a>	Provides declarations of conformity, certificates, and other certification details.

You can view or download publications at <http://www.rockwellautomation.com/literature/>. For Release Notes and other publications specific to your module, search the catalog number of the module. To order paper copies of technical documentation, contact your local Allen-Bradley distributor or Rockwell Automation sales representative.

## Rockwell Automation Support

Rockwell Automation provides technical information on the Web to assist you in using its products. At <http://www.rockwellautomation.com/support> you can find technical and application notes, sample code, and links to software service packs. You can also visit our Support Center at <https://rockwellautomation.custhelp.com/> for software updates, support chats and forums, technical information, FAQs, and to sign up for product notification updates. In addition, we offer multiple support programs for installation, configuration, and troubleshooting. For more information, contact your local distributor or Rockwell Automation representative, or visit <http://www.rockwellautomation.com/services/online-phone>.

### Installation Assistance

If you experience a problem within the first 24 hours of installation, review the information that is contained in the installation instructions. You can contact Customer Support for initial help in getting your product up and running.

United States or Canada	1.440.646.3434
Outside United States or Canada	Use the <a href="http://www.rockwellautomation.com/support/americas/phone_en.html">Worldwide Locator</a> at <a href="http://www.rockwellautomation.com/support/americas/phone_en.html">http://www.rockwellautomation.com/support/americas/phone_en.html</a> , or contact your local Rockwell Automation representative.

### New Product Satisfaction Return

Rockwell Automation tests all of its products to ensure that they are fully operational when shipped from the manufacturing facility. However, if your product is not functioning and needs to be returned, follow these procedures.

United States	Contact your distributor. You must provide a Customer Support case number (call the phone number above to obtain one) to your distributor to complete the return process.
Outside United States	Please contact your local Rockwell Automation representative for the return procedure.

### Documentation Feedback

Your comments will help us serve your documentation needs better. If you have any suggestions on how to improve this document, complete this form, publication [RA-DU002](#), available at <http://www.rockwellautomation.com/literature/>.

Rockwell Automation maintains current product environmental information on its website at <http://www.rockwellautomation.com/rockwellautomation/about-us/sustainability-ethics/product-environmental-compliance.page>.

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Asia Pacific: Rockwell Automation, Level 14, Core F, Cyberport 3, 100 Cyberport Road, Hong Kong, Tel: (852) 2887 4788, Fax: (852) 2508 1846