

# Product Information

Original Instructions



**Allen-Bradley**

by ROCKWELL AUTOMATION

## FLEXHA 5000 8-Channel Universal I/O Module

Catalog Number 5015-U8IHFTXT

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**IMPORTANT** FLEXHA 5000™ 8-channel Universal I/O modules are part of a FLEXHA 5000 I/O system. The system is designed so that individual components can be installed and removed independent of each other. This publication only includes information about the Universal I/O module. For more information on how to install a complete FLEXHA 5000 I/O system, see the FLEXHA 5000 System Installation Instructions, publication [5015-IN001](#).

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The FLEXHA 5000 8-channel Universal I/O module is a fault-tolerant I/O module with eight isolated channels that can individually be configured to function as digital inputs, digital outputs, analog inputs, or analog outputs. For channels that are configured as analog input or analog output, HART functionality is also available. The I/O modules reside on an I/O base, catalog number 5015-A4IOXT, in the FLEXHA 5000 I/O system. The I/O base must be connected to the Adapter base, catalog number 5015-A2AXT, and the components that are used on that base.

The module provides the following:

- Quarter-turn actuator to lock the I/O module in place
- Module status indicators to monitor the I/O module operation
- Diagnostic status indicators to monitor some conditions on external devices that are connected to the I/O module
- Transferable mechanical keys that reduce the risk of installing the wrong replacement in a system



**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, ensamble, desensamble 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：本 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 규정에서 따라 적절한 교육을 받은 사용자를 통해서만 수행해야 합니다.

本 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 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, hizmet alma, kullanma, parçaları birleştirme, parçaları sökme ve bakım gibi aktiviteler sadece uygun eğitimli 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 zahrnují 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 i urządzenia. Użytkownicy mają obowiązek zapoznać się z instrukcjami dotyczącymi instalacji oraz przeprowadzania, 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.

**OBBS!** 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 bedragsinstructies, 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.

## Environment and Enclosure



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



This equipment is not intended for use in residential environments and may not provide adequate protection to radio communication services in such environments.

This equipment is supplied as open-type equipment for indoor use. It must be mounted within an enclosure that is suitably designed for those specific environmental conditions that 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 more information regarding specific enclosure type ratings that are required to comply with certain product safety certifications.


In addition to this publication, see the following:

- Industrial Automation Wiring and Grounding Guidelines, publication [1770-4.1](#), for more installation requirements.
- NEMA Standard 250 and EN/IEC 60529, as applicable, for explanations of the degrees of protection provided by enclosures.

North American Hazardous Location Approval

The following information applies when operating this equipment in hazardous locations:		Informations sur l'utilisation de cet équipement en environnements dangereux:	
<p>Products marked "CL I, DIV 2, GP A, B, C, D" are suitable for use in Class I Division 2 Groups A, B, C, D, Hazardous Locations and nonhazardous locations only. Each product is supplied with markings on the rating nameplate indicating the hazardous location temperature code. When combining products within a system, the most adverse temperature code (lowest "T" number) may be used to help determine the overall temperature code of the system. Combinations of equipment in your system are subject to investigation by the local Authority Having Jurisdiction at the time of installation.</p>		<p>Les produits marqués "CL I, DIV 2, GP A, B, C, D" ne conviennent qu'à une utilisation en environnements de Classe I Division 2 Groupes A, B, C, D dangereux et non dangereux. Chaque produit est livré avec des marquages sur sa plaque d'identification qui indiquent le code de température pour les environnements dangereux. Lorsque plusieurs produits sont combinés dans un système, le code de température le plus défavorable (code de température le plus faible) peut être utilisé pour déterminer le code de température global du système. Les combinaisons d'équipements dans le système sont sujettes à inspection par les autorités locales qualifiées au moment de l'installation.</p>	
	<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> </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> </ul>


UK and European Hazardous Location Approval

<p>The following applies to products marked,  <b>II 3G:</b></p> <ul style="list-style-type: none"> <li>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 <a href="http://rok.auto/certifications">rok.auto/certifications</a> for details.</li> <li>The type of protection is Ex ec IIC T4 Gc. Equipment protection by increased safety "e".</li> <li>Equipment protection by increased safety "e", reference certificate number UL 22 ATEX 2745X and UL22UKEX2258X.</li> <li>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</li> </ul>
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IEC Hazardous Location Approval

<p>The following applies to products with IECEx certification:</p> <ul style="list-style-type: none"> <li>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.</li> <li>The type of protection is Ex ec IIC T4 Gc.</li> <li>IECEx certificate number IECEx UL 22.0033X.</li> <li>INMETRO certificate number UL-BR 22.4468X.</li> </ul>
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Prevent Electrostatic Discharge

	<p><b>ATTENTION:</b> This equipment is sensitive to electrostatic discharge, which can cause internal damage and affect normal operation. Follow these guidelines when you handle this equipment:</p> <ul style="list-style-type: none"> <li>Touch a grounded object to discharge potential static.</li> <li>Wear an approved grounding wriststrap.</li> <li>Do not touch connectors or pins on component boards.</li> <li>Do not touch circuit components inside the equipment.</li> <li>Use a static-safe workstation, if available.</li> <li>Store the equipment in appropriate static-safe packaging when not in use.</li> </ul>
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Electrical Safety Considerations

	<p><b>ATTENTION:</b></p> <ul style="list-style-type: none"> <li>SELV source approved to EN/IEC60950-1, EN/IEC61010-2-201 or EN/IEC62368-1 (ES1)</li> <li>PELV source approved to EN/IEC60950-1, EN/IEC61010-2-201 or EN/IEC62368-1 (ES1)</li> </ul>
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Specific Conditions of Use



**WARNING:**

- This equipment is not resistant to sunlight or other sources of UV radiation.
- This equipment shall be mounted in an UKEX/ATEX/IECEX/INMETRO Zone 2 certified enclosure with a minimum ingress protection rating of at least IP54 (in accordance with EN/IEC/ABNT NBR 60079-0) and used in an environment of not more than Pollution Degree 2 (as defined in EN/IEC 60664-1) when applied in Zone 2 environments. The enclosure must be accessible only by the use of a tool.
- This equipment shall be used within its specified ratings defined by Rockwell Automation.
- Transient protection shall be provided that is set at a level not exceeding 140% of the peak rated voltage value at the supply terminals to the equipment.
- The instructions in the user manual shall be observed.
- This equipment must be used only with UKEX/ATEX/IECEX/INMETRO certified Rockwell Automation backplanes.
- Secure any external connections that mate to this equipment by using screws, sliding latches, threaded connectors, or other means provided with this product.
- If you connect or disconnect the removable terminal block (RTB) for I/O connections with power applied, to avoid the spark, UNLOCK the IO module before removing the SA RTB.
- The equipment shall be installed in compliance with the enclosure, mounting, spacing and segregation requirements of the ultimate application.
- This equipment must be used with the following accessories.

Catalog Number	Description	
5015-A4IOXT	I/O Module Base	
5015-BIMXT	Backplane Interface Module	
5015-BEKITXT	Bus Expansion Module, Power Cable and Communication Cable, used if extension of the backplane is needed. The 5015-BEKITXT consists of the following models:	
	<b>Catalog Number</b>	<b>Description</b>
	5015-BEBRXT	Bank Expansion Base, Right
	5015-BEBLXT	Bank Expansion Base, Left
	5015-BECPWRXT	Backplane Power Extension Cable (length 2 m)
5015-BECCOMXT	Backplane Communication Extension Cable (length 2 m)	
5015-BP6NDXT	Back Plate GND Lug (part of backplate)	

- This equipment must be used with one of the following accessories.

Catalog Number	Description
5015-MP300XT	Mounting Plate 300 mm
5015-MP700XT	Mounting Plate 700 mm
5015-MP900XT	Mounting Plate 900 mm
5015-MP1250XT	Mounting Plate 1250 mm

- The equipment must be used with the following accessories.

Catalog Number	Description
5015-RTBPXT	Removable Terminal Block Push-in Simplex
5015-RTBPWPXT	Removable Terminal Block for Power Conditioner/Sensor Actuator Power, Push-in
5015-RTBRPXT	Removable Terminal Block, Push-in Duplex
5015-STBPXT	Shield RTB, Push-in
5015-ECRXT	End Cap/Terminator
5015-N2IOXT	I/O Slot Filler
5015-N2RTBXT	RTB Filler
5015-N2SAXT	SA Power Filler



**ATTENTION:**

- In case of malfunction or damage, no attempts at repair should be made. The module should be returned to the manufacturer for repair. Do not dismantle the module.
- Use only a soft dry anti-static cloth to wipe down equipment. Do not use any cleaning agents.
- Do not discard the end cap. Use this end cap to cover the exposed interconnections on the last module on the DIN rail. Failure to do so could result in equipment damage or injury from electric shock.

**IMPORTANT**

To ensure proper operation and high immunity to electrical noise, always use Belden 8761 (shielded, twisted pair) or equivalent wire. For points that require 3 wires, always use Belden 8771 (shielded, twisted) or equivalent wire.

## Before You Begin

Before you install the I/O module, at minimum, you must install the following:

- Mounting plate
- Adapter base

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**IMPORTANT** You can only mount the Adapter base in the horizontal orientation. However, it cannot be installed in a horizontal flat, that is, facing the sky, orientation.

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- I/O base

## Install the I/O Modules

The I/O modules have a quarter-turn actuator that locks the modules onto the I/O base. Out of the box, the quarter-turn actuator is in the up position. At the back of the I/O modules, the other end of the quarter-turn actuator installs and locks into the I/O base.

In a single FLEXHA 5000 I/O system, you can install a maximum of 24 I/O modules using six I/O bases.

1. Push the I/O module into a slot position on the I/O base.  
Orange keys on the back of the power conditioner seat into position on the Adapter base.
2. To lock the I/O module in place, use an RA 1492-N90 or equivalent-sized screwdriver to push the quarter-turn actuator in and turn it 90° clockwise.

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**IMPORTANT** If you turn the quarter-turn actuator more than 90° clockwise, you can damage the actuator.

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## Wire the Removable Terminal Blocks

[Table 1](#) lists the wire sizes that each RTB type supports.

The following apply to all RTBs:

- Torque = 0.7 +/-0.11 Nm (6 +/-1 in-lb)
- Wires are rated at 105 °C (221 ° F) or greater, 1.2 mm (3/64 in.) insulation max

Table 1 - FLEXHA 5000 RTB Wire Sizes

Catalog Number	Supported Wire Sizes
5015-RTBPWPXT	<ul style="list-style-type: none"> <li>• 4 mm<sup>2</sup> (12 AWG) solid copper wire, max</li> <li>• 4 mm<sup>2</sup> (12 AWG) stranded copper wire, without ferrule, max</li> <li>• 2.5 mm<sup>2</sup> (14 AWG) stranded copper wire, with ferrule, max</li> <li>• 2.5 mm<sup>2</sup> (14 AWG) stranded copper wire, without ferrule, max</li> </ul>
5015-RTBPXT	<ul style="list-style-type: none"> <li>• 0.34...4 mm<sup>2</sup> (22...12 AWG) solid copper wire, max</li> <li>• 0.14...2.5 mm<sup>2</sup> (26...14 AWG) stranded copper wire, with ferrule, max</li> <li>• 0.34...2.5 mm<sup>2</sup> (22...14 AWG) stranded copper wire, without ferrule, max</li> </ul>
5015-RTBRPXT	
5015-STBPXT	

## Specifications

For a list of all specifications, see the FLEXHA 5000 I/O System Specifications Technical Data, publication [5015-TD001](#).

### 5015-U8IHFTX Universal I/O Specifications

Attribute	Value
Temperature, operating IEC 60068-2-14 (Test Na and Nb, Non Operating and Operating Thermal Shock)	-30 °C ≤ Ta ≤ +70 °C (-22 °F ≤ Ta ≤ +158 °F) - If the I/O module is installed in an I/O Base that is mounted horizontally. -30 °C ≤ Ta ≤ +60 °C (-22 °F ≤ Ta ≤ +140 °F) - If the I/O module is installed in an I/O Base that is mounted vertically.
Temperature, surrounding air, max	70 °C (158 °F) - If the I/O module is installed in an I/O Base that is mounted horizontally. 60 °C (140 °F) - If the I/O module is installed in an I/O Base that is mounted vertically.
Voltage and Current Ratings	
BP	76.6 mA @ 15V DC
SA	1.5 A @ 24V DC
AI, HART (SINK/SOURCE)	4...20 mA/50 mA max
AO, HART (SINK/SOURCE)	4...20 mA/25 mA max
DI (SINK/SOURCE)	24V DC, 2.5 mA/30 mA
DO (SINK/SOURCE)	24V DC, 0.5 A/100 mA
DO PILOT DUTY (SINK/SOURCE)	24VDC, 1A/200 mA
Wiring category <sup>(1)</sup>	2 - signal ports (USB) (via RTB on I/O Base)
Isolation voltage	250V (continuous), Basic Insulation Type Channel to Channel 250V (continuous), Basic Insulation Backplane to Field
Temp code	T4

(1) Use this Conductor Category information for planning conductor routing as described in the appropriate System Level Installation Manual. Also refer to Industrial Automation Wiring and Grounding Guidelines, publication [1770-4.1](#), for more installation information.

## Additional Resources

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

Resource	Description
FLEXHA 5000 I/O System Installation Instructions, publication <a href="#">5015-IN001</a>	Describes how to install a FLEXHA 5000 I/O system.
FLEXHA 5000 I/O System User Manual, publication <a href="#">5015-UM001</a>	Describes how to configure, maintain, and troubleshoot a FLEXHA 5000 I/O system.
FLEXHA 5000 I/O System Specifications Technical Data, publication <a href="#">5015-TD001</a>	Provides specifications and wiring diagrams for FLEXHA 5000 I/O modules, EtherNet/IP™ adapter, and other system components.
Industrial Components Preventive Maintenance, Enclosures, and Contact Ratings Specifications, publication <a href="#">IC-TD002</a>	Provides a quick reference tool for Allen-Bradley® industrial automation controls and assemblies.
Safety Guidelines for the Application, Installation, and Maintenance of Solid-state Control, publication <a href="#">SBI-1.1</a>	Designed to harmonize with NEMA Standards Publication No. ICS 1.1-1987 and provides general guidelines for the application, installation, and maintenance of solid-state control in the form of individual devices or packaged assemblies incorporating solid-state components.
Industrial Automation Wiring and Grounding Guidelines, publication <a href="#">1770-4.1</a>	Provides general guidelines for installing a Rockwell Automation industrial system.
Product Certifications website, <a href="#">rok.auto/certifications</a>	Provides declarations of conformity, certificates, and other certification details.

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

**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).

Rockwell Otomasyon Ticaret A.Ş. Kar Plaza İş Merkezi E Blok Kat:6 34752, Çerçenköy, İstanbul, Tel: +90 (216) 5698400 EEE Yönetmeliğine Uygundur

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AMERICAS: Rockwell Automation, 1201 South Second Street, Milwaukee, WI 53204-2496 USA, Tel: (1) 414.382.2000, Fax: (1) 414.382.4444

EUROPE/MIDDLE EAST/AFRICA: Rockwell Automation NV, Pegasus Park, De Kleetlaan 12a, 1831 Diegem, Belgium, Tel: (32) 2663 0600, Fax: (32) 2 663 0640

ASIA PACIFIC: Rockwell Automation SEA Pte Ltd, 2 Corporation Road, #04-05, Main Lobby, Corporation Place, Singapore 618494, Tel: (65) 6510 6608, FAX: (65) 6510 6699

UNITED KINGDOM: Rockwell Automation Ltd., Pitfield, Kiln Farm, Milton Keynes, MK11 3DR, United Kingdom, Tel: (44)(1908) 838-800, Fax: (44)(1908) 261-917

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