

# XM-220 Dual Speed Module

Catalog Number 1440-SPD02-01RB

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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, hizmet alma, kulanma, 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 elektrické zapojení.

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

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

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

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

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

**OBST!** 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 bedradinginstructies, 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 publication contains new and updated information as indicated in the following table.

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DeviceNet Mode, Communication Rate, and Address	8

## 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 dans le système et est sujettes à inspection par les autorités locales qualifiées au moment de l'installation.</p>
 <p><b>WARNING: 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>WARNING: 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>

 <p><b>ATTENTION:</b></p> <ul style="list-style-type: none"> <li>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.</li> <li>Installation, adjustments, putting into service, use, assembly, disassembly, and maintenance shall be carried out by suitably trained personnel in accordance with applicable code of practice. 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.</li> <li>This equipment is certified for use only within the surrounding air temperature range of -20...65 °C (32...149 °F). The equipment must not be used outside of this range.</li> <li>The Serial port is intended for temporary local programming purposes only and not intended for permanent connection. The Serial cable is not to exceed 3.0 m (9.84 ft) and must not contain hubs.</li> <li>Do not remove or replace a Terminal Base unit while power is applied. Interruption of the backplane can result in unintentional operation or machine motion.</li> <li>Do not remove or replace an Adapter Module while power is applied. Interruption of the backplane can result in unintentional operation or machine motion.</li> <li>This product is grounded through the DIN rail to chassis ground. Use zinc plated chromate-passivated steel DIN rail to assure proper grounding. The use of other DIN rail materials (for example, aluminum or plastic) that can corrode, oxidize, or are poor conductors, can result in improper or intermittent grounding. Secure DIN rail to mounting surface approximately every 200 mm (7.8 in.) and use end-anchors appropriately. Be sure to ground the DIN rail properly. See to Industrial Automation Wiring and Grounding Guidelines, Rockwell Automation publication <a href="#">1770-4.1</a>, for more information.</li> <li>Use only a soft dry anti-static cloth to wipe down equipment. Do not use cleaning agents.</li> </ul>
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 <p><b>ATTENTION:</b> Electrical Safety Considerations</p> <p>Power to this equipment must be powered from a source compliant with the following:</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> </ul>
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**IMPORTANT** Any illustrations, charts, sample programs, and layout examples that are shown in this publication are intended solely for the purposes of example. Because there are many variables and requirements that are associated with any particular installation, Rockwell Automation does not assume responsibility or liability for actual use that is based on the examples that are shown in this publication.

## 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 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, V2, V1, V0 (or equivalent) 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 250 and IEC 60529, as applicable, for explanations of the degrees of protection provided by different types of enclosures.



**WARNING:**

- If you insert or remove the module while backplane power is on, an electric arc can occur. This could cause an explosion in hazardous location installations. Be sure that power is removed or the area is nonhazardous before proceeding.
- If you connect or disconnect the serial cable with power applied to this module or the serial device on the other end of the cable, 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 you connect or disconnect the XMBUS cable with power applied to this module or any device on the network, an electric arc can occur. This could cause an explosion in hazardous location installations. Be sure that power is removed or the area is nonhazardous before proceeding.
- If you connect or disconnect wiring while the field-side power is on, an electric arc can occur. This could cause an explosion in hazardous location installations. Be sure that power is removed or the area is nonhazardous before proceeding.
- 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.

## Prevent Electrostatic Discharge



**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.

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## European Hazardous Location Approval

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The following applies to products marked   II 3 G:

- Such modules are Equipment Group II, Equipment Category 3, and comply with the Essential Health and Safety Requirements relating to the design and construction of such equipment given in Annex II to Directive 2014/34/EU. See the EC Declaration of Conformity at <http://www.rockwellautomation.com/products/certification> for details.
  - The type of protection is <"Ex nA nC IIC T4 Gc"> according to EN 60079-15.
  - Such modules comply to Standards EN 60079-0:2012+A11:2013, EN 60079-15:2010, reference certificate number DEMKO 17 ATEX 1915X.
  - Such modules 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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## Special Conditions for Safe Use

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### WARNING:

- This equipment shall be mounted in an ATEX Zone 2 certified enclosure with a minimum ingress protection rating of at least IP54 (in accordance with EN 60079-15) and used in an environment of not more than Pollution Degree 2 (as defined in EN 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.
  - This equipment must be used only with ATEX certified Rockwell Automation backplanes.
  - Secure any external connections that mate to this equipment by using screws, sliding latches, threaded connectors, or other means provided with this product.
  - Do not disconnect equipment unless power has been removed or the area is known to be nonhazardous.
  - The Serial port is intended for temporary local programming purposes only and not intended for permanent connection. Do not use the Serial port in hazardous locations.
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## Mount the Module

The module mounts on a XM<sup>®</sup> 941 terminal base unit, catalog number 1440-TB-B. We recommend that you mount the module after connecting the wiring on the terminal base unit. See the XM-941 Terminal Base Installation Instruction, publication [GMSI10-IN021](#), or the XM-220 Dual Speed Module User Guide, publication [GMSI10-UM004](#), for wiring information.

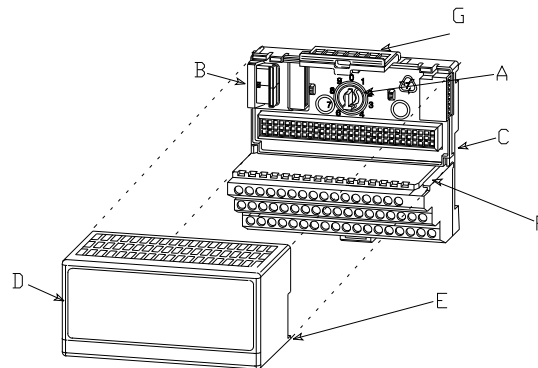


**ATTENTION:** The XM-220 module is compatible only with the XM-941 terminal base unit. Verify that the keyswitch on the terminal base unit is at position 4 for the XM-220 module.

Do not attempt to install XM-220 modules on other terminal base units.

Do not change the position of the keyswitch after wiring the XM-941 terminal base unit.

1. Verify the keyswitch (A) on the terminal base unit (C) is at position 4 as required for the XM-220 module.



2. Verify the side connector (B) is pushed fully to the left.

**IMPORTANT** You cannot install the module unless the connector is fully extended.

3. Make sure that the pins on the bottom of the module are straight so they align properly with the connector in the terminal base unit.
4. Position the module (D) with its alignment bar (E) aligned with the groove (F) on the terminal base unit.
5. Press firmly and evenly to seat the module in the terminal base unit.  
The module is seated when the latching mechanism (G) is locked into the module.
6. To install the next module in its terminal base unit, repeat steps 1...5.

All grounds in the system must be tied to the same point of the same grounding electrode system.

Maintain a 2.54 cm (1 in.) minimum clearance between the module and adjacent equipment. There are no orientation restrictions.

## DeviceNet Connection

The DeviceNet network is an open, global, industry-standard communication network that is designed to provide an interface through a cable from a programmable controller to a smart device, such as the XM-220 module. As multiple XM modules are interconnected, the DeviceNet network also serves as the communication bus and protocol that efficiently transfers data between the XM modules.

The XM-220 module includes a DeviceNet connection that lets the modules communicate with a programmable logic controller (PLC), distributed control system (DCS), or another XM module.

Connect the DeviceNet cable to the terminal base as shown in this table.

### DeviceNet Cable Connections

Connect	To	Terminal
Red wire	DeviceNet V+	26 (optional)
White wire	CAN High	23
Bare wire	Shield (Chassis)	10
Blue wire	CAN Low	24
Black wire	DeviceNet V-	27

**IMPORTANT** The DeviceNet power circuit through the XM module interconnect, which is rated at only 300 mA, is not intended or designed to power DeviceNet loads. Doing so could damage the module or terminal base.

**IMPORTANT** If the module is configured to operate in Normal mode (fully ODVA-compliant), DeviceNet V+ must be connected. See the XM-222 Dual Speed Module User Guide, publication [GMS110-UM004](#).



**ATTENTION:**

- You must ground the DeviceNet shield at only one location. Connecting the DeviceNet shield to terminal 10 grounds the DeviceNet shield at the XM module. If you intend to terminate the shield elsewhere, do not connect the shield to terminal 10.
- The DeviceNet network must also be referenced to earth ground at only one location. Connect DeviceNet V- to earth ground or chassis at one of the XM modules.
- The DeviceNet V+ and DeviceNet V- terminals are inputs to the XM module. Do not attempt to pass DeviceNet power through the XM terminal base to other non-XM equipment by connecting to these terminals. Failure to comply can result in damage to the XM terminal base and/or other equipment.

**IMPORTANT** Terminate the DeviceNet network and adhere to the requirements and instructions in the ODVA Planning and Installation Manual - DeviceNet Cable System, which is available on the ODVA website <http://www.odva.org>.

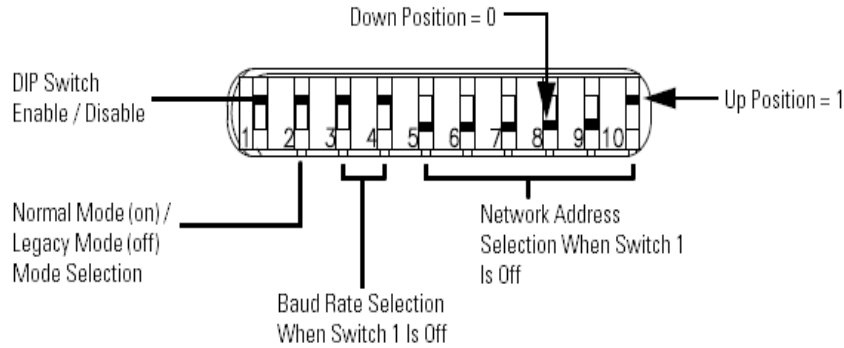


At the end of its life, this equipment should be collected separately from any unsorted municipal waste.

### DeviceNet Mode, Communication Rate, and Address

Under the slide at the top of the module, is a 10-position DIP switch that is used to set DeviceNet behavior, node address, and communication rate for the module. The switches are numbered from left to right and are applied as shown in [Figure 1](#) and [Table 1](#).

**Figure 1 - DIP Switch Bank**



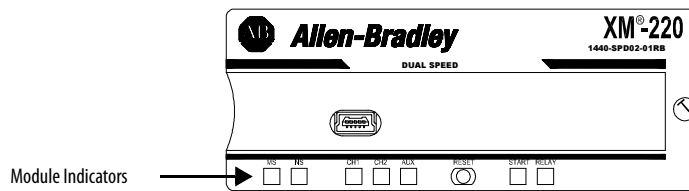
**Table 1 - DIP Switch Functions and Defaults**

Switch	Purpose	Function	Out-of-box Default Value	Out-of-box Switch Setting
1	DIP switch disable	Determines whether DIP switches 3...10 are enabled. <ul style="list-style-type: none"> <li>When this switch is in the off position, DIP switches 3...10 set the node address and communication rate for the module.</li> <li>When the switch is on, the device ignores DIP switches 3...10 and uses the network address and communication rate programmed in nonvolatile storage.</li> </ul>	Switches enabled	Off
2	Network mode	Sets the DeviceNet behavior of the module to either Normal mode (ODVA compliant) or Legacy mode, which is consistent with earlier XM module versions.	Normal (fully compliant)	On
3, 4	Data rate	When switch 1 is off (0), the DeviceNet communication rate is set.	125 Kbps	Both off
5...10	Node address	When switch #1 is off (0), the DeviceNet node address is set.	63	All on



## Module Indicators

The XM-220 module has seven status indicators, which are on top of the module.



**TIP** The AUX indicator is reserved for future use.

### Module Status Indicator

Color	State	Description
No color	Off	No power is applied to the module.
Green	Flashing red	Module performing power-up self-test.
	Flashing	Module operating in Program mode. <sup>(1)</sup>
	Solid	Module operating in Run mode. <sup>(2)</sup>
Red	Flashing	<ul style="list-style-type: none"> <li>Application firmware is invalid or not loaded. Download firmware to the module.</li> <li>Firmware download is currently in progress.</li> </ul>
	Solid	An unrecoverable fault has occurred. It is possible that the module must be repaired or replaced.

(1) Program mode - Typically this occurs when the module configuration settings are being updated with the XM Serial Configuration Utility. In Program mode, the module does not perform its normal functions. The signal processing/measurement process is stopped, and the status of the alarms is set to the disarm state to prevent a false alert or danger status.

(2) Run mode - In Run mode, the module collects measurement data and monitors each measurement device.

### Network Status (NS) Indicator

Color	State	Description
No color	Off	Module is not online: <ul style="list-style-type: none"> <li>Module is autobauding.</li> <li>No power is applied to the module; see Module Status indicator.</li> </ul>
Green	Flashing	Module is online (DeviceNet network) but no connections are currently established. <sup>(1)</sup>
	Solid	Module is online with connections currently established.
Red	Flashing	One or more I/O connections are in the timed-out-state.
	Solid	Failed communication (duplicate MAC ID or bus-off).

(1) Normal operation when the module is not a slave to an XM-220, programmable controller, or other master device.

*Channel 1 and Channel 2 Indicator*

Color	State	Description
No color	Off	<ul style="list-style-type: none"> <li>Normal operation with alarm limits on the channel.</li> <li>No power applied to the module; see Module Status indicator.</li> </ul>
Yellow	Solid	An alert level alarm condition exists on the channel (and no transducer fault, tachometer fault, or danger level alarm condition exists).
	Flashing	Tachometer fault (no transducer fault) condition exists on the channel.
Red	Solid	A danger level alarm condition exists on the channel (and no transducer fault or tachometer fault condition exists).
	Flashing	A transducer fault condition exists on the channel.

*Startup (Start) Indicator*

Color	State	Description
Yellow	Off	Startup period is not in effect.
	Solid	Startup period is in effect: <ul style="list-style-type: none"> <li>Module can inhibit the Tach Fault alarm status.</li> <li>Module can monitor for locked rotor conditions.</li> </ul>

*Relay Indicator*

Color	State	Description
Red	Off	Onboard relay is not activated.
	Solid	Onboard relay is activated.

**Self-Test**

The XM-220 module performs a self-test at powerup. The self-test includes a status indicator test and a device test. During the status indicator test, the indicators turn on independently and in sequence for approximately 0.25 seconds.

The device test occurs after the status indicator test. The Module Status indicator is used to indicate the status of the device self-test.

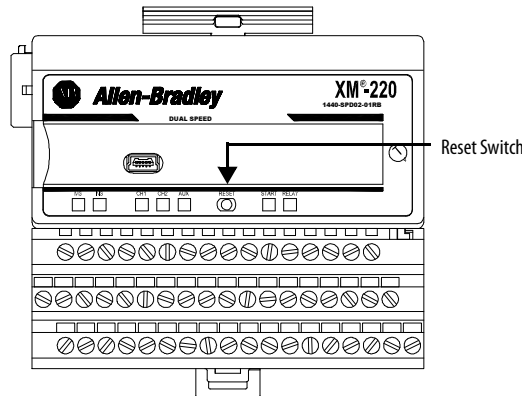
Module Status Indicator State	Description
Flashing red and green	Device self-test is in progress.
Solid green or flashing green	Device self-test completed successfully, and the firmware is valid and running.
Flashing red	Device self-test completed, the hardware is OK, but the firmware is invalid. Or, the firmware download is in progress.
Solid red	Unrecoverable fault, hardware failure, or Boot Loader program corruption.

## Reset Switch



**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.

The XM-220 module has an external reset switch on top of the module. The Reset switch can be used to reset all latched relays, including the relays in the Relay expansion module when it is attached to the XM-220 module.



**IMPORTANT** The Reset switch resets the relays only if the input is no longer in alarm or the condition that caused the alarm is no longer present.

## Install the XM Serial Configuration Utility Software

The XM Documentation and Configuration Utility CD is packaged with the XM modules. It contains the XM Serial Configuration Utility software, a set of user guides, hazardous location installation drawings, and electronic data sheet (EDS) files that are used by network configuration tools such as RSNetWorx™ for DeviceNet software. The user guides are in portable document format (PDF), and must be viewed with Adobe Acrobat Reader software.

To install the XM Serial Configuration Utility software, follow these steps.

1. Insert the XM Documentation and Configuration Utility CD-ROM into the CD-ROM drive.

Autorun Status	Result
Enabled	The Setup program starts automatically and the XM Serial Configuration Utility opening screen appears.
Disabled	Follow these steps. 1. Click Start, and then click Run. The Run dialog box appears. 2. In the Open box, type x:\autorun, where x is the letter of the drive containing the XM Documentation and Configuration Utility CD-ROM. 3. Click OK. The XM Serial Configuration Utility opening screen appears.

2. Follow the instructions that appear to install the XM Serial Configuration Utility.
3. When you are finished installing the software, remove the XM Documentation and Configuration Utility CD-ROM from the CD-ROM drives; store it in a safe place.

## Specifications

The following table lists the technical specifications for the XM-220 module.

Attribute	XM-220
Temperature, operating IEC 60068-2-1 (Test Ad, Operating Cold), IEC 60068-2-2 (Test Bd, Operating Dry Heat), IEC 60068-2-14 (Test Nb, Operating Thermal Shock)	-20 °C < Ta < +65 °C (-4 °F < Ta < +149 °F)
Temperature, ambient, max	65 °C (149 °F)
Temperature, surrounding air, max	65 °C (149 °F)
Enclosure type rating	None (open-style)
Voltages and current ratings	Supply: 24V DC, 0.3 A max, SELV  Relay: 120V AC, 0.5 A, resistive 110V DC, 0.5 A, resistive 30V DC, 1.0 A, resistive
Isolation voltage	250V (continuous), Basic Insulation Type, relay to all other circuits. Isolation between other circuits is not rated. Type tested at 1500V AC for 60 s
Wire type	Signal connections: shielded Power and relay connections: unshielded
Pilot duty rating	Relay port: not rated
North American temp code	T4 A
ATEX temp code	T4

## Additional Resources

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

Resource	Description
XM-941 Terminal Base Installation Instruction, publication <a href="#">GMS10-IN021</a>	Provides Terminal Base wiring and grounding information.
XM-220 Dual Speed Module User Guide, publication <a href="#">GMS10-UM004</a>	Provides Terminal Base wiring and grounding information.
1440 XM Monitoring Modules Specifications Technical Data, publication <a href="#">1440-TD001</a>	Provides technical specifications for the 1440 series of monitoring modules.
XM-220 Dual Speed Module User Manual, publication <a href="#">1440-UM001</a>	Provides details on the installation of the XM-124 as well as module configuration, operation, and technical specifications.
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/global/certification/overview.page">http://www.rockwellautomation.com/global/certification/overview.page</a>	Provides declarations of conformity, certificates, and other certification details.

You can view or download publications at <http://www.rockwellautomation.com/literature/>. To order paper copies of technical documentation, contact your local Allen-Bradley distributor or Rockwell Automation sales representative.

## Rockwell Automation Support

Use the following resources to access support information.

<b>Technical Support Center</b>	Knowledgebase Articles, How-to Videos, FAQs, Chat, User Forums, and Product Notification Updates.	<a href="https://rockwellautomation.custhelp.com/">https://rockwellautomation.custhelp.com/</a>
<b>Local Technical Support Phone Numbers</b>	Locate the phone number for your country.	<a href="http://www.rockwellautomation.com/global/support/get-support-now.page">http://www.rockwellautomation.com/global/support/get-support-now.page</a>
<b>Direct Dial Codes</b>	Find the Direct Dial Code for your product. Use the code to route your call directly to a technical support engineer.	<a href="http://www.rockwellautomation.com/global/support/direct-dial.page">http://www.rockwellautomation.com/global/support/direct-dial.page</a>
<b>Literature Library</b>	Installation Instructions, Manuals, Brochures, and Technical Data.	<a href="http://www.rockwellautomation.com/global/literature-library/overview.page">http://www.rockwellautomation.com/global/literature-library/overview.page</a>
<b>Product Compatibility and Download Center (PCDC)</b>	Get help determining how products interact, check features and capabilities, and find associated firmware.	<a href="http://www.rockwellautomation.com/global/support/pcdc.page">http://www.rockwellautomation.com/global/support/pcdc.page</a>

## Documentation Feedback

Your comments will help us serve your documentation needs better. If you have any suggestions on how to improve this document, complete the How Are We Doing? form at [http://literature.rockwellautomation.com/idc/groups/literature/documents/du/ra-du002\\_-en-e.pdf](http://literature.rockwellautomation.com/idc/groups/literature/documents/du/ra-du002_-en-e.pdf).

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

**[www.rockwellautomation.com](http://www.rockwellautomation.com)**

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**Power, Control and Information Solutions Headquarters**

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) 2 663 0600, Fax: (32) 2 663 0640

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

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