



ProcessLogix Fieldbus Interface Module (FIM)

(Catalog Number 1757-FIM)

For information about:	See Page:
Important User Information	2
Planning Considerations	4
Installing Fieldbus Interface Module 1757-FIM	5
Loading 1757-FIM Firmware	6
Hazardous Locations	7
Specifications	8

Package Contents:

- 1 Fieldbus Interface Module (1757-FIM)
- installation instructions

Important User Information

Because of the variety of uses for the products described in this publication, those responsible for the application and use of these products must satisfy themselves that all necessary steps have been taken to assure that each application and use meets all performance and safety requirements, including any applicable laws, regulations, codes and standards. In no event will Allen-Bradley be responsible or liable for indirect or consequential damage resulting from the use or application of these products.

Any illustrations, charts, sample programs, and layout examples shown in this publication are intended solely for purposes of example. Since there are many variables and requirements associated with any particular installation, Allen-Bradley does not assume responsibility or liability (to include intellectual property liability) for actual use based upon the examples shown in this publication.

Allen-Bradley publication SGI-1.1, *Safety Guidelines for the Application, Installation and Maintenance of Solid-State Control* (available from your local Allen-Bradley office), describes some important differences between solid-state equipment and electromechanical devices that should be taken into consideration when applying products such as those described in this publication.

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Throughout this publication, notes may be used to make you aware of safety considerations. The following annotations and their accompanying statements help you to identify a potential hazard, avoid a potential hazard, and recognize the consequences of a potential hazard:

WARNING



Identifies information about practices or circumstances that can cause an explosion in a hazardous environment, which may lead to personal injury or death, property damage, or economic loss.

ATTENTION



Identifies information about practices or circumstances that can lead to personal injury or death, property damage, or economic loss.

IMPORTANT

Identifies information that is critical for successful application and understanding of the product.

ATTENTION**Environment and Enclosure**

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

This equipment is considered Group 1, Class A industrial equipment according to IEC/CISPR Publication 11. Without appropriate precautions, there may be potential difficulties ensuring electromagnetic compatibility in other environments due to conducted as well as radiated disturbance.

This equipment is supplied as "open type" equipment. 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 interior of the enclosure must be accessible only by the use of a tool. Subsequent sections of this publication may contain additional information regarding specific enclosure type ratings that are required to comply with certain product safety certifications.

See NEMA Standards publication 250 and IEC publication 60529, as applicable, for explanations of the degrees of protection provided by different types of enclosure. Also, see the appropriate sections in this publication, as well as the Allen-Bradley publication 1770-4.1 ("Industrial Automation Wiring and Grounding Guidelines"), for additional installation requirements pertaining to this equipment.

Rockwell Automation Technical Support

If you need any assistance with the information found in this document, first call your local Rockwell Automation representative, then:

- Phone Support: (440) 646-5800
- Web Support: <http://www.ab.com>, under Support, click Product Support

Your Questions or Comments about this Manual

If you find a problem with this manual, please use the How are We Doing? form located in the Documentation section of Knowledge Builder to notify us.

Planning Considerations

Fieldbus Network References

Refer to the following publications for guidance in designing and implementing the Fieldbus network to be interfaced to the ProcessLogix system through the FIM and its companion Remote Termination Panel (RTP).

Pub Number	Publication Title	Scope	Source
AG-140	Wiring and Installation 31.25 kbit/s, Voltage Mode, Wire Medium Application Guide	Overview of what you need to know to wire, power, and layout network components	Fieldbus Foundation 9390 Research Blvd. Suite II-250 Austin Texas 78759-9780 www.fieldbus.org
AG-163	31.25 kbit/s Intrinsically Safe Systems	Complements the previous document, introduces you to the principles of intrinsic safety, and outlines how to apply approved devices in a hazardous area.	
AG-165	Fieldbus Installation and Planning Guide	Outlines things to consider before installing a Fieldbus network	

Fieldbus Wiring Selection and Calculation

The recommended cable for connecting Fieldbus devices is #18 AWG (0.8 mm²) shielded, twisted pair wire. It is important to calculate how the planned topology for your Fieldbus segment, selected wiring, supplied power and intended mix of Fieldbus devices may impact the overall performance of a Fieldbus network.

Visit the Relcom Inc. website www.relcominc.com for more information on available Fieldbus wiring products and more wiring design and installation data. They also offer a free Fieldbus Wiring Design and Installation Guide for downloading.

See the Foundation Fieldbus User Manual, publication 1757-UM006, for a condensed overview of Fieldbus wiring considerations.

Installing Fieldbus Interface Module 1757-FIM

Inserting the Module

Use the following steps to insert the FIM into the chassis:

ATTENTION**Preventing Electrostatic Discharge**

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.
 - If available, use a static-safe workstation.
 - When not in use, store the equipment in appropriate static-safe packaging.
-

1. Turn off the power supply in the chassis.

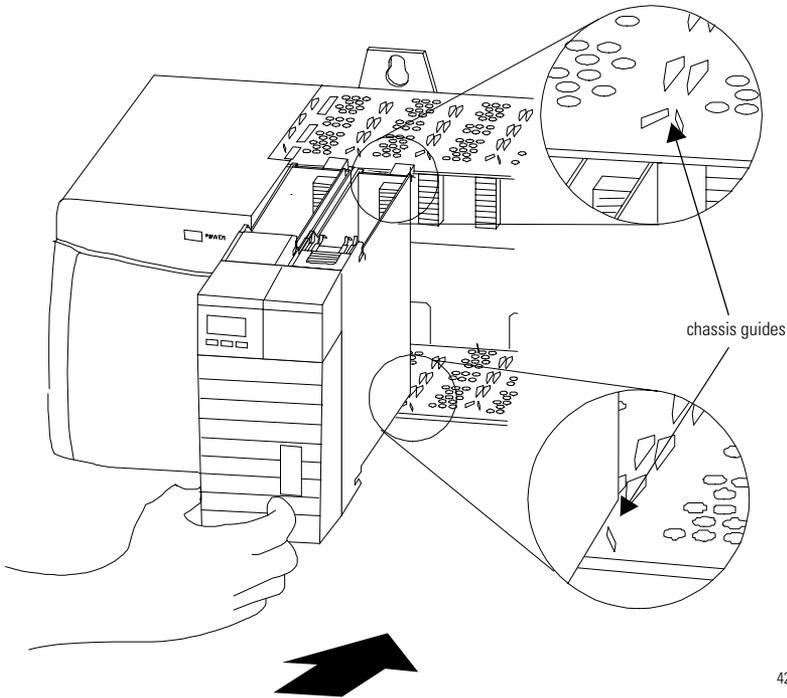
WARNING

When you insert or remove the FIM with power applied, an electrical arc can occur. This could cause an explosion in hazardous location installations.

Be sure that power is removed or the area is nonhazardous before proceeding.

2. Place the module at the desired chassis slots location. For example, slots 1 and 2. (Slot numbering is zero-based, the left most slot is “0”.)

3. Align the sides of the module with the chassis guides.



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4. Slide the module into the chassis until the module tabs snap into position.

Loading 1757-FIM Firmware

ATTENTION



If the FIM is not installed and pre-configured by the factory, users must load the FIM's firmware to make it fully operational. This is also true for any replacement FIM ordered separately from the factory.

Once the Control hardware is installed and system communications are established, refer to the Loading CPM Personality Image section in the Startup and Shutdown Guide in Knowledge Builder, to update the FIM's firmware. The procedure for loading the FIM's firmware is similar to the one used for loading the CPM's personality image.

Hazardous Locations

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>WARNING</p>  <p>EXPLOSION HAZARD</p> <ul style="list-style-type: none"> • Do not disconnect equipment unless power has been removed or the area is known to be nonhazardous. • Do not disconnect connections to this equipment unless power has been removed or the area is known to be nonhazardous. Secure any external connections that mate to this equipment by using screws, sliding latches, threaded connectors, or other means provided with this product. • Substitution of components may impair suitability for Class I, Division 2. • If this product contains batteries, they must only be changed in an area known to be nonhazardous. 	<p>AVERTISSEMENT</p>  <p>RISQUE D'EXPLOSION</p> <ul style="list-style-type: none"> • Couper le courant ou s'assurer que l'environnement est classé non dangereux avant de débrancher l'équipement. • Couper le courant ou s'assurer que l'environnement est classé non dangereux avant de débrancher les connecteurs. Fixer tous les connecteurs externes reliés à cet équipement à l'aide de vis, loquets coulissants, connecteurs filetés ou autres moyens fournis avec ce produit. • La substitution de composants peut rendre cet équipement inadapté à une utilisation en environnement de Classe I, Division 2. • S'assurer que l'environnement est classé non dangereux avant de changer les piles.

Specifications

FIM Specifications	
Physical Interface	H1 FOUNDATION Fieldbus
Number of H1 Networks per FIM ¹ (Each network defined as a FOUNDATION Fieldbus 31.25 kbps H1 network)	2
Maximum Number of Fieldbus Devices per H1 Network	30 ²
Maximum Number of FIMs per 1757-PLX52 Controller (Each FIM counts as 3 IOMs in the IOMs/CPM calculation.)	21
Maximum Number of Fieldbus Devices per 1757-PLX52 Controller	1260 ²
Maximum Number of FIMs per Server (Redundant or Non-Redundant)	100
Maximum Number of H1 Networks per Server (Redundant or Non-Redundant)	200
Maximum Number of Fieldbus Devices per Server	3000
Maximum Single-Variable Publications per Second on an H1 network	15
Maximum number of VCRs (Virtual Communications Relationships) per Network	64 ³
Electro-static Discharge	IEC 1000-4-2: 1995
Operating Temperature	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): 0 to 60°C (32 to 140°F)
Storage Temperature	IEC 60068-2-1 (Test Ab, Un-packaged Non-operating Cold), IEC 60068-2-2 (Test Bb, Un-packaged Non-operating Dry Heat), IEC 60068-2-14 (Test Na, Un-packaged Non-operating Thermal Shock): -40 to 85°C (-40 to 185°F)
Relative Humidity	IEC 60068-2-30 (Test Db, Un-packaged Non-operating Damp Heat): 5 to 95% non-condensing
Vibration	IEC 60068-2-6 (Test Fc, Operating): 0.5g @ 10-500Hz
Shock	IEC 60068-2-27: Test Ea (Unpackaged shock, ES#002) Operating 5g Non-operating 20g

FIM Specifications											
Enclosure Type Rating	None (open-style)										
Barometric Pressure Altitude	-300 to +3000 m										
Certifications: (when product is marked)	<table border="0"> <tr> <td>UL</td> <td>UL Listed Industrial Control Equipment</td> </tr> <tr> <td>CSA</td> <td>CSA Certified Process Control Equipment for Class I, Division 2 Group A,B,C,D Hazardous Locations</td> </tr> <tr> <td>FM</td> <td>FM Approved Equipment for use in Class I Division 2 Group A,B,C,D Hazardous Locations</td> </tr> <tr> <td>CE ⁴</td> <td>European Union 89/336/EEC EMC Directive, compliant with: EN 50081-2; Industrial Emissions EN 50082-2; Industrial Immunity EN 61326; Meas./Control/Lab., Industrial Requirements EN 61000-6-2; Industrial Immunity</td> </tr> <tr> <td>C-Tick⁴</td> <td>Australian Radiocommunications Act, compliant with: AS/NZS 2064; Industrial Emissions</td> </tr> </table>	UL	UL Listed Industrial Control Equipment	CSA	CSA Certified Process Control Equipment for Class I, Division 2 Group A,B,C,D Hazardous Locations	FM	FM Approved Equipment for use in Class I Division 2 Group A,B,C,D Hazardous Locations	CE ⁴	European Union 89/336/EEC EMC Directive, compliant with: EN 50081-2; Industrial Emissions EN 50082-2; Industrial Immunity EN 61326; Meas./Control/Lab., Industrial Requirements EN 61000-6-2; Industrial Immunity	C-Tick ⁴	Australian Radiocommunications Act, compliant with: AS/NZS 2064; Industrial Emissions
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¹ Qualified for use with 50 ms CEE only

² The maximum number of supportable devices per network is highly dependent on application, bandwidth, devices, available current, bus length and topology. An understanding of Fieldbus is crucial to system sizing.

³ Each FIM network uses 2 VCRs, each device uses 2 VCRs, and each "published" connection to/from a PLX52 FB uses 1 VCR. Connections between devices do not use FIM VCRs.

⁴ See the Product Certification link at www.ab.com for Declarations of Conformity, Certificates, and other certification details.

Notes:

Notes:

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Foundation Fieldbus is a trademark of the Fieldbus Foundation.

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