Installation Instructions

SynchLink Base Block

Catalog Number 1751-SLBA

This document describes how to install and use the 1751-SLBA SynchLink™ base block.

Related Publications

Publication Title	Publication Number
SynchLink Base Block Installation Instructions	1751-IN001A-EN-P
SynchLink 4-port Splitter Block Installation Instructions	1751-IN002A-EN-P
SynchLink Bypass Switch Block Installation Instructions	1751-IN003A-EN-P
ControlLogix SynchLink Module Installation Instructions	1756-IN575A-EN-P
SynchLink System Overview	1756-SO008A-EN-P
ControlLogix SynchLink Module User Manual	1756-UM521A-EN-P

Important User Information

Because of the variety of uses for the products described in this publication, those responsible for the application and use of this control equipment 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.

The illustrations, charts, sample programs and layout examples shown in this guide 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.

Throughout this manual we use notes to make you aware of safety considerations:

ATTENTION

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

Attention statements help you to:

- identify a hazard
- avoid a hazard
- recognize the consequences

IMPORTANT

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

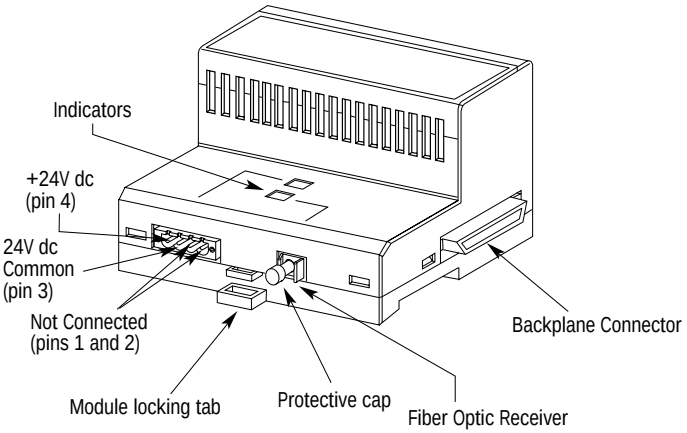
SynchLink Overview

We designed the SynchLink system to provide the synchronization and coordination of drive and motion control applications that are based on ControlLogix™ and PowerFlex 700s™ stations.

About the SynchLink Base Block

The base block converts optical signals coming from a SynchLink station to electrical signals, and then re-times and retransmits them simultaneously to a maximum of four 4-port splitter blocks. It also supplies power to splitter blocks. The base block requires a 24V dc power supply. The power supply connection is made via field wiring to a screw connector plug. The base block is DIN rail-mounted and is housed in a two-piece plastic enclosure. Figure 1 identifies the components of the base block.

Figure 1 - Components of the base block



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Prevent Electrostatic Discharge

ATTENTION

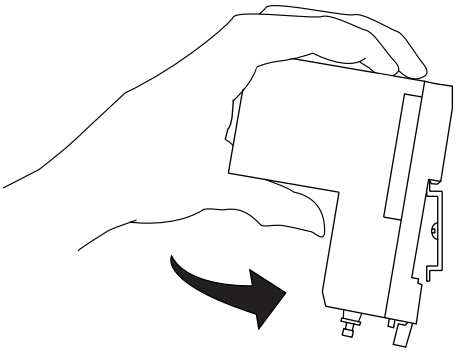
Electrostatic discharge can damage integrated circuits or semiconductors if you touch backplane connector pins. Follow these guidelines when you handle the base block:

- Touch a grounded object to discharge static potential.
- Wear an approved wrist-strap grounding device.
- Do not touch the backplane connector or connector pins.
- Do not touch circuit components inside the base block.
- If available, use a static-safe work station.
- When not in use, keep the base block in its static-shield box.

Installing the Base Block

To install the base block on the DIN rail:

1. Position the base block on the 35×7.5mm DIN rail (Allen-Bradley catalog number 199-DR1) at a 30° angle.



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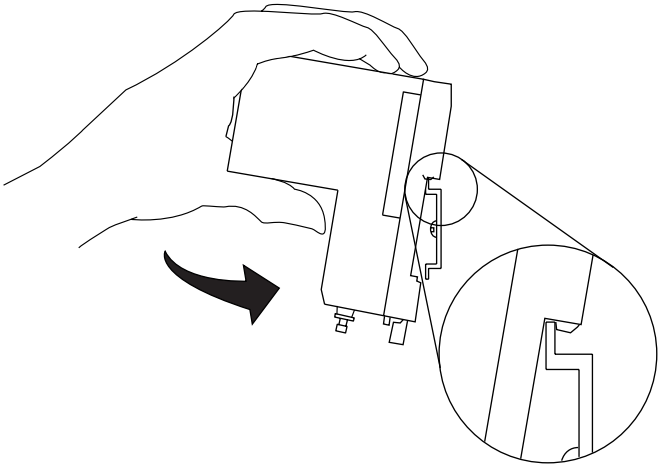
2. Hook the lip of on the rear of the base block onto the top of the DIN rail and rotate the base block onto the rail.



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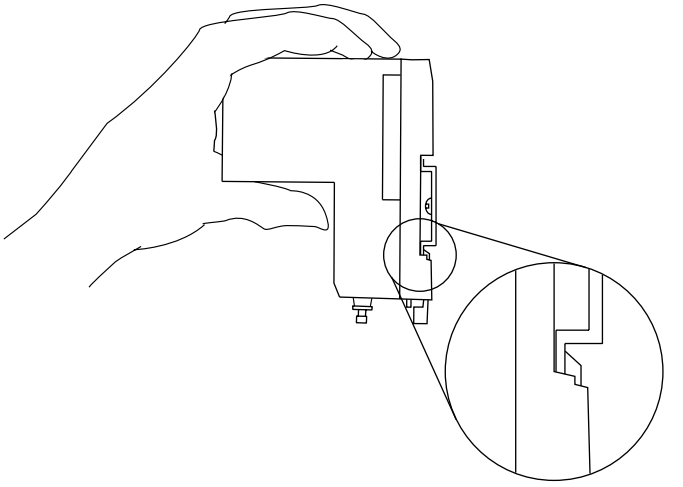
3. Press the base block down to the DIN rail until flush.



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The locking tab should snap into position and lock the base block to the DIN rail. If the tab does not snap into position, follow step 4. If the tab does snap into position, proceed to step 5.

4. Use a screwdriver to move the locking tab down while you press the base block flush onto the DIN rail. Release the locking tab to lock the base block into place. If necessary, push up on the locking tab to lock the base block into place.

5. Once you attach the base block to the DIN rail, slide the base block to the left.

ATTENTION

Be certain that you secure the base block and 4-port Splitter blocks together with DIN rail anchors. Failure to do so may result in loss of communication and/or damage to blocks.

Failure to use the DIN rail interlocks in hazardous location installations could cause an explosion.

The total number of 4-port splitters that can be attached to the base block cannot exceed **four**.

IMPORTANT

If you exceed the base block's power limit, you may cause damage to the base block.

6. Connect the block wiring as shown in Wiring the Base Block.

Wiring the Base Block

To wire the base block and connect power:

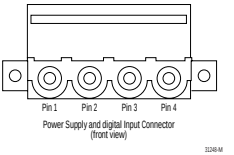
ATTENTION

Do not look directly into the fiber ports or fiber cables. Light levels may cause damage to eyesight.

1. Connect pre-terminated fiber optic cable to the fiber optic connector shown in Figure 1. That is, connect RxIN to SynchLink station transmitter, TxIN.

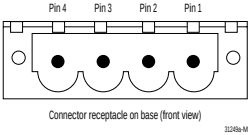
2. Pre-wire the removable connector plug as shown on the base block label. The wire length between the 24V dc power supply and the base block must be less than 3m.

Connect	To pin
+24V dc	4
24V dc Common	3
Pins 1 and 2 are not connected.	



IMPORTANT Do not connect 24V dc Common to Chassis Ground.

3. Insert the removable connector plug into the mating connector receptacle on the base block.



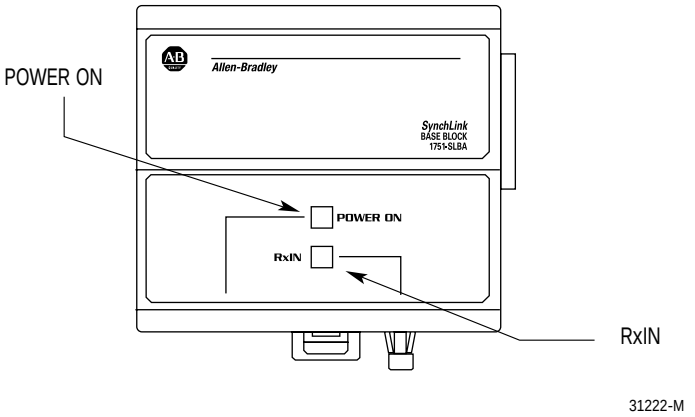
4. Screw the removable connector to the base block with the left and right mounting screws.

IMPORTANT Make sure the base block and splitter blocks are attached and secured prior to applying power to the base block. Failure to do so may cause damage to the base block and companion blocks.

Indicators

Figure 2 identifies the status indicators on the base block.

Figure 2 - Status indcators



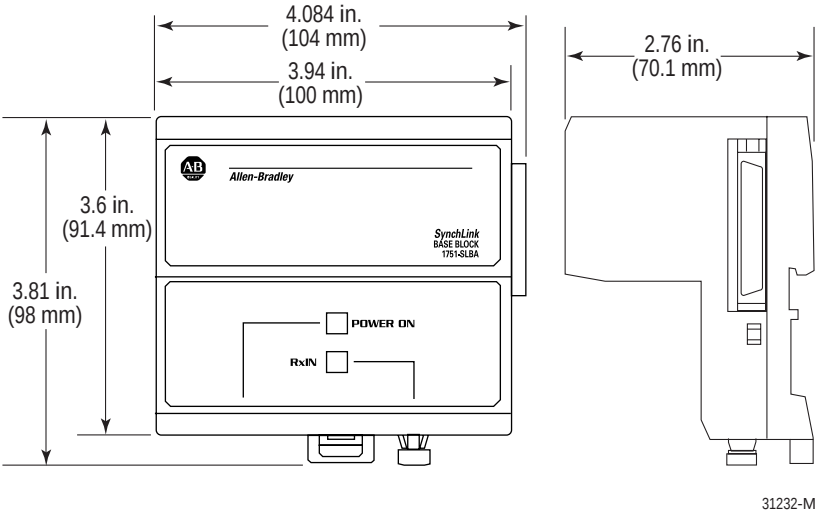
Status Indicators

Indicator	When LED is ON
Power ON	24V dc power is applied to the block
RxIN	optical signals are received from the SynchLink station

Mounting Dimensions

Figure 3 provides mounting dimensions for the base block.

Figure 3 - Mounting dimensions



European Communities (EC) Directive Compliance

If this product has the CE mark it is approved for installation within the European Union and EEA regions. It has been designed and tested to meet the following directives.

EMC Directive

This product is tested to meet the Council Directive 89/336/EC Electromagnetic Compatibility (EMC) by applying the following standards, in whole or in part, documented in a technical construction file:

- EN 50081-2 EMC - Generic Emission Standard, Part 2 - Industrial Environment
- EN 50082-2 EMC - Generic Immunity Standard, Part 2 - Industrial Environment

This product is intended for use in an industrial environment.

Low Voltage Directive

This product is tested to meet Council Directive 73/23/EEC Low Voltage, by applying the safety requirements of EN 61131-2 Programmable Controllers, Part 2 - Equipment Requirements and Tests. For specific information required by EN 61131-2, see the appropriate sections in this publication, as well as the Allen-Bradley publication Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1.

Open style devices must be provided with environmental and safety protection by proper mounting in enclosures designed for specific application conditions. See NEMA Standards publication 250 and IEC publication 529, as applicable, for explanations of the degrees of protection provided by different types of enclosure.

Hazardous Location information

The following information applies when operating this equipment in hazardous locations:

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.

WARNING

EXPLOSION HAZARD

- 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.

Informations sur l'utilisation de cet équipement en environnements dangereux :

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.

AVERTISSEMENT

RISQUE D'EXPLOSION

- 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 1, Division 2.
- S'assurer que l'environnement est classé non dangereux avant de changer les piles.

Rockwell Automation Support

Rockwell Automation offers support services worldwide, with over 75 sales/support offices, over 500 authorized distributors, and 260 authorized systems integrators located throughout the United States alone, plus Rockwell Automation representatives in every major country around the world. Contact your local Rockwell Automation representative for:

- sales and order support
- product technical training
- warranty support
- support service agreements

Obtain Pre-Sales Product Support

If you need to contact Rockwell Automation for pre-sales product support, try one of the following methods:

- Call your local Rockwell Automation representative
- Network Pre-sales support line, 1.440.646.3638 (3NET)
- Pre-Sales e-mail, RACle3net@ra.rockwell.com

Obtain Technical Product Support

If you need to contact Rockwell Automation for technical assistance, try one of the following methods:

- Call your local Rockwell Automation representative
- Post-Sales Technical Support, 1.440.646.5800
- Fax Back system, 1.440.646.5436 (requires a touch-tone telephone)
- Web Links http://www.ab.com — as a registered member, open to http://www.ab.com/mem/technotes/techmain.html

Specifications

Power Supply		To comply with CE Low Voltage directives, you must use a Safety Extra Low Voltage (SELV) or a Protected Extra Low Voltage (PELV) power supply to power this base block. Use a NEC/CEC Class 2 power supply in order to comply with UL and CSA requirements.
Input Voltage Rating		0.6A @ 24V dc nominal
Output Voltage Rating		1.2A @ 5.1V dc nominal
Input Voltage Range		20V dc to 30V dc A regulated power supply is recommended.
Communication Rate		5M bit/s
Power Consumption		600mA maximum for external 24V supply based on worst case block loading (four splitters)
Terminal Block Torque Requirements		5-7 in-lb. maximum
Environmental Conditions[1]		
	Operating Temperature	0ºC - 60ºC
	Storage Temperature	-40ºC - 85ºC
	Relative Humidity	5 to 95%, 0ºC - 60ºC non-condensing
Shock	Operating	30g peak acceleration, 11 (± 1)ms pulse width
	Non-operating	50g peak acceleration, 11 (± 1)ms pulse width
	Vibration	Tested 5 g @ 10 - 500Hz per IEC 68-2-6
Fiber Optic Cable		
	Fiber Type	200/230 micron HCS (Hard Clad Silica)
	Fiber Termination Type	Versalink V-System
	Assemblies	Cable assemblies can be ordered from Allen-Bradley, catalog number 1403-CFxxx (xxx = length in meters); or from Lucent Technologies, Specialty Fiber Technologies division.
	Maximum Length	300 meters
	Minimum Length	1 meter
Power Conductors		
	Wire Size	12 gauge maximum, 24 gauge minimum (#12 AWG to 24 AWG), stranded
	Category	2[2]
	Maximum Length	3 meters

Agency Certifications When product is marked:	 Listed Industrial Control Equipment  Certified Process Control Equipment Certified Class I, Division 2, Group A, B, C, D  Marked for all applicable directives  N223 marked for all applicable acts

(1) This product must be mounted within a suitable system enclosure to prevent personal injury resulting from accessibility to live parts. The interior of this enclosure must be accessible only by the use of a tool. This industrial control equipment is intended to operate in a Pollution Degree 2 environment, in overvoltage category II applications, (as defined in IEC publication 664A) at altitudes up to 2000 meters without derating.

(2) You use this category information for planning conductor routing as described in publication 1770-4.1, "Industrial Automation Wiring and Grounding Guidelines."

Notes:

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European Headquarters SA/NV, avenue Herrmann Debroux, 46, 1160 Brussels, Belgium, Tel: (32) 2 663 06 00, Fax: (32) 2 663 06 40
Asia Pacific Headquarters, 27/F Citicorp Centre, 18 Whitfield Road, Causeway Bay, Hong Kong, Tel: (852) 2887 4788, Fax: (852) 2508 1846

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