Honeywell

Technical Information

Experion LX Foundation Fieldbus Integration Specification

LX03-470-120
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Product Introduction

1.1. Foundation Fieldbus

FOUNDATION fieldbus™ (FF) is an enabling technology for integrating field devices with digitally-based (Host) process control systems. It defines how "smart" field devices communicate and operate with other devices in a control network. The Fieldbus Foundation is the leading organization dedicated to a single international, interoperable fieldbus standard and responsible for FOUNDATION fieldbus. For more information about the Fieldbus Foundation, see the following website.

http://www.fieldbus.org/

1.2. Experion LX Integration

The **Experion LX®** System provides an effective and robust fieldbus interface through the Field Interface Module (FIM4).

The generic name used to identify the kit is FIM4 Kit. The Experion LX FIM4 Kit is a high-performance component that completely and transparently integrate FOUNDATION Fieldbus devices into the Experion LX.

A numerical suffix is added to the FIM designation to indicate the number of FF H1 networks that are provided by the module.

- **FIM4 Kit** with 4 H1 networks

FIM4 Kit can be used standalone or with the C300 process controller.

1.3. Terminology

Fieldbus terminology used in this document:

- **H1**: A term used to describe a Fieldbus network operating at 31.25 kbits/second.
- **H1 Field Device**: Compliant Field Devices (valves, transmitters, analyzers, etc.) that connect directly to an H1 fieldbus.
- **Interoperability**: The ability for multiple disparate devices from multiple vendors to operate safely and interact properly (per foundation specifications) on the same Fieldbus H1 network.
- **Link**: A Link is the logical medium by which H1 Fieldbus devices are interconnected. It is composed of one or more physical segments interconnected by bus Repeaters or Couplers.
- **LAS**: All of the devices on a link share a common schedule, which is administered by that link's current LAS (Link Active Scheduler). It is the data link layer name for a network.
- **Network**: A network as applied in this document is the termination of one or more Fieldbus segments into an interface card of the host system. In this document the term “link” and “network” are used interchangeably.
- **Segment**: A Segment is a section of an H1 fieldbus that is terminated in its characteristic impedance. Segments can be linked by Repeaters to form a longer H1 fieldbus. Each Segment can include up to 32 H1 devices.

2. Product Overview

2.1. Series 8 FIM4 Kit

All Series 8 interface modules, I/O modules, and the C300, use the concept of an IOTA (Input Output Terminal Assembly) where the IOTA mounts to a standard Series 8 mounting channel assembly. This provides for a standardized cabinet, mounting, power, and grounding infrastructure for all Series 8 modules (for additional details, see the appropriate Experion LX documentation).

As Figure 1 shows FIM4 module is mounted to a FIM4 IOTA. The FIM4 IOTA is 12 inches long and install on a din rail case. Redundant kit provide two FIM4 modules on IOTA, non-redudant kit use one FIM4 module on it.

Figure 1 also shows the various connection points. Note that 24 Vdc (to power the modules) is provided from the Power Control module (PartNumber: 51307038-100). There are also FTE (green & yellow) connectors for each FIM4 module. The FIM4 FTE (IP) index address is set using the rotary switches on the IOTA. This represents the last octet of the four octets that make up the complete FTE IP address. However, you can implement conditioners from other 3rd party vendors and hard wire the conditioners using standard FF H1 practices. Note that all power conditioners and the H1 network are isolated from the Series 8 power system.

The FIM4 is a standard FTE node. FIM4 can be used with a process controller or can be standalone. When used with a process controller it can only be a C300.

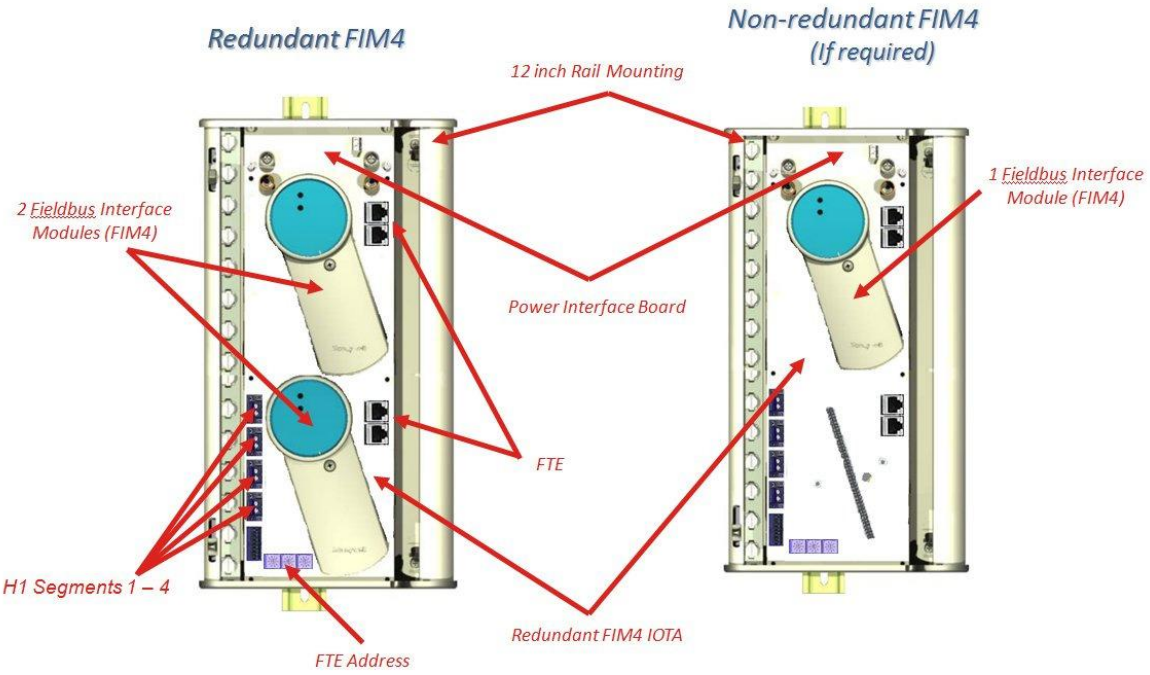

Figure 1: Series 8 FIM4 Kit types and configurations (redundant and non-redundant)

8. Model Numbers and Specifications

8.1. Model Numbers

Model Number	Model Description
S8-KFB4A1	Series 8 FIM4 Kit, Redundant
S8-KFB4B1	Series 8 FIM4 Kit, Non-Redundant
51307038-100	Power Control Module Assembly

8.2. Specifications

Series 8 Foundation Fieldbus Interface Module with 4 H1 Links (FIM4) Kits

Parameter	Specification
Physical Interface	H1 Foundation fieldbus
Number of H1 Networks per FIM (Each network defined as a Foundation fieldbus 31.25 kbps H1 network)	4
Indicators on Module	• 24V Power, Module & FTE Status LEDs • Front display panel with module and link state information
Indicators on IOTA	4 H1 Link Status LEDs (1 per Link)
Configurations	Non-redundant or redundant (side-by-side)
Electro-static Discharge	IEC 1000-4-2: 1995
Power Dissipation	5.3 watts
Module Current	0.212 amps @ 25 Vdc
H1 Link Connection	Using connectors on the IOTA

8.2.1. PCM

Parameter	Specification
Number of Inputs	2
Input Voltage Range	16~32 VDC
Number of Outputs	8
Load Current	Total 20 A Max @ 24 VDC
Under-Voltage Shutdown	DC output to the whole system is shutdown when the output power is lower than 19V.
Over-Voltage Shutdown	DC output to the whole system should be shutdown when the output power is higher than 28V.
Alarm	When the DC input voltage is not in normal status, output alarm signal.

8.3. Fieldbus Usage Model Numbers

CV-FFLXxx, are required based on the total number of FIMs (redundant or non-redundant pair) per Server actually in use. This applies equally to Series 8 FIM4. License model numbers are purchased in combinations that support the total number of FIMs required. Licenses must be purchased starting with the first FIM used.

Fieldbus Usage License Models (applicable to all FIM types)

Fieldbus Usage Licenses	
CV-FFLX01	Fieldbus Usage License, 1 FIM (FIM4)
CV-FFLX05	Fieldbus Usage License, 5 FIMs