

Foundation Fieldbus Linking Device for ControlNet and RSFieldbus Software

Technical Data

Combine the Power of PlantPAx with Foundation Fieldbus Technology

The Rockwell Automaton PlantPAx process automation system provides a single plant-wide control and information platform while the Foundation Fieldbus standard provides the ability to distribute the control architecture throughout your facility. Combine these two powerful technologies to enable integrated, seamless distribution of data and the execution of process function with multi-vendor field devices. Rockwell Automation achieves maximum benefits by joining the robust Foundation Fieldbus Linking Device for ControlNet with the easy-to-use RSFieldbus software to expertly bring fieldbus devices into the Integrated Architecture. The linking device communicates information from Foundation Fieldbus H1 process instrumentation via ControlNet for use within the Logix controller family and via High Speed Ethernet for use with FactoryTalk AssetCentre asset management solution.



Benefits

In today's competitive manufacturing environment, the ability to easily access field device data required for a plant optimization strategy can be your competitive advantage. The Rockwell Automation Foundation Fieldbus Linking Device for ControlNet (1757-FFLDC2, - FFLDC4) offers distributed control with the flexibility of remote mounting close to the field to maximize communication speed and minimize intrinsic safety concerns.

The linking device provides a consistent architecture and a common user experience for Foundation Fieldbus applications within the complete line of scalable Logix-based controllers. Our next generation, plant-wide system meets the needs of the entire enterprise with a single platform and development environment.

For increased confidence in Foundation Fieldbus applications, the linking device allows systems with redundant ControlLogix controllers and redundant ControlNet media to communicate with Foundation Fieldbus H1 process instrumentation.



FOUNDATION

Digital communication from field instrumentation to the process control and asset management system is facilitated with Foundation Fieldbus technology and the Rockwell automation Integrated Architecture.

Additionally, the linking device has been enhanced with Field Device Technology (FDT). FDT standardizes the communication interface between field devices and systems. The linking device applies FDT technology through the Device Type Manager (DTM) to seamlessly connect fieldbus devices to the PlantPAx Process Automation System. To add this asset management functionality and to increase the operational effectiveness of your system, visit the Rockwell Automation support website at: www.rockwellautomation.com/support/downloads.html to download the DTM.



LISTEN.
THINK.
SOLVE.

Allen-Bradley Automation

Allen-Bradley • Rockwell Software

**Rockwell
Automation**

H1, HSE, and ControlNet

The H1 protocol provides a distributed LAN for field devices, and digitally communicates at a rate of 31.25 kbit/s. ControlNet is a control and information level network that incorporates ControlNet standards imbedded in TCP/IP. This provides a ControlNet backbone that can communicate with Logix controllers and Foundation Fieldbus devices. The linking device is also an HSE node that connects either two or four H1 segments to an HSE network for use in asset management applications.

RSFieldbus and HSE give you a complete system view of your process instrumentation and control devices. Through the use of HSE, multiple linking devices can be connected and configured in a single RSFieldbus project. This arrangement offers you the ability to have a highly distributed network of linking devices throughout a facility on a robust backbone and allows you to configure and monitor all devices on the network segment. This flexibility leads to better project management of larger systems with many field devices.

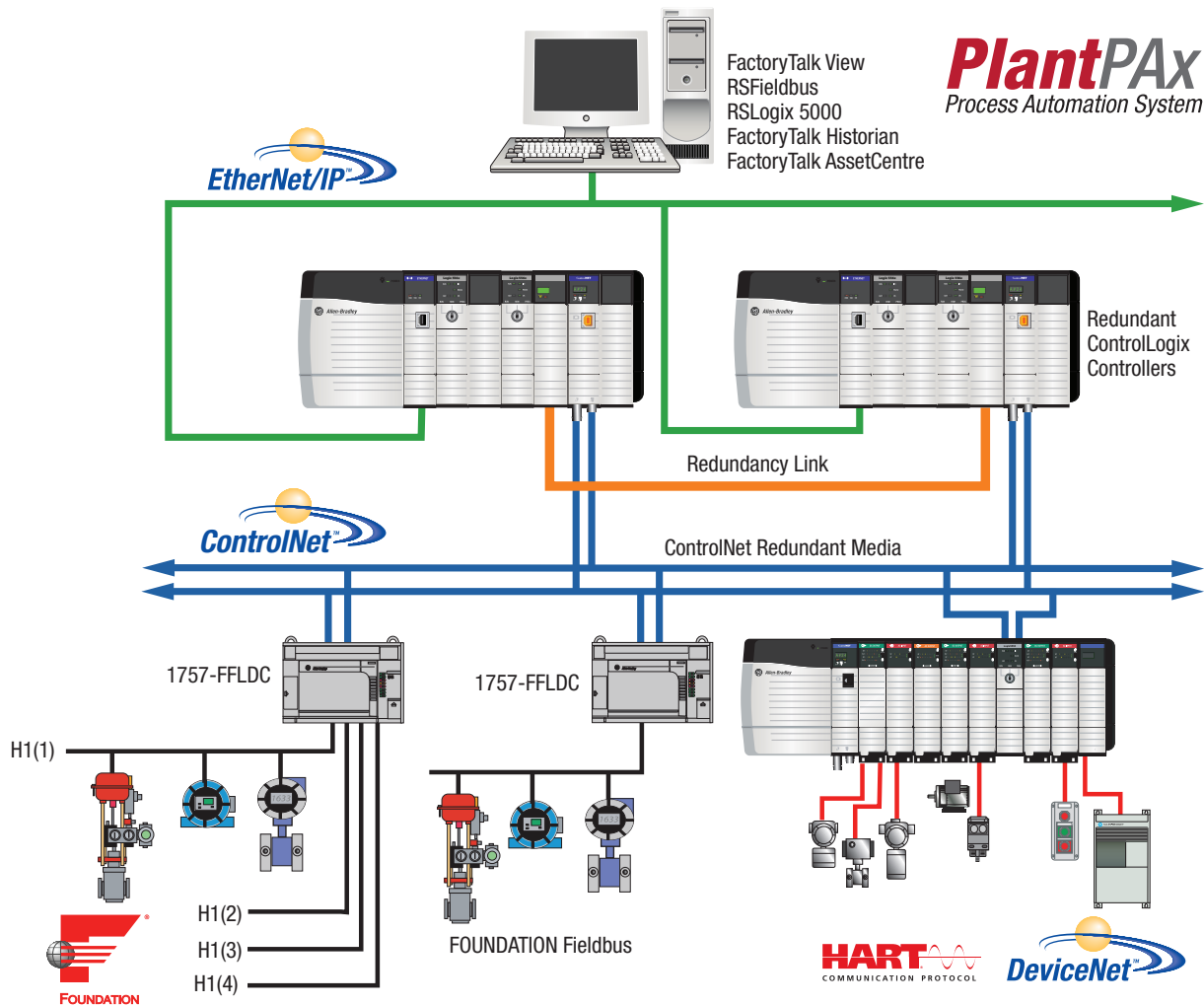
RSFieldbus for Field Instrumentation Management

RSFieldbus is used for the remote setup, configuration, operation and maintenance of Foundation Fieldbus devices, networks, and systems.

RSFieldbus is a full-function, graphical configuration environment that is versatile and simplifies the task of connecting an automation system to intelligent devices. With RSFieldbus, device configuration can be performed both offline, without physical instruments, and online for complete monitoring and instant access to modify device and control configurations.

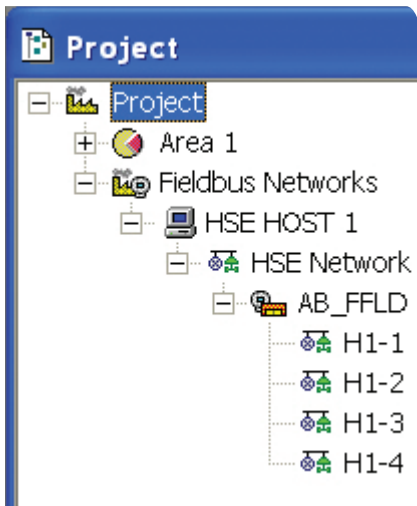
Integrated Architecture:

Foundation Fieldbus H1 devices connect to 1757-FFLDC linking device for ControlNet.



RSFieldbus includes auto detection and tag-addressing of connected Foundation Fieldbus devices for rapid deployment.

Employing the ISA S88 hierarchy and terminology to organize the system devices, RSFieldbus includes configurable templates, a library of preconfigured objects, and control strategies to reduce configuration effort. User-developed strategies are also supported to provide maximum flexibility and support of user-defined control schemes. RSFieldbus arrives preloaded with an extensive library of Device Description (DD) and capability (CFF files. These files include the information needed for a control system to configure and manage Foundation Fieldbus devices. With built-in support for adding and upgrading these files, RSFieldbus makes it easy to maintain the device libraries from a variety of Foundation Fieldbus device suppliers.



RSFieldbus HSE OPC Server

The OPC server provided with RSFieldbus is a direct interface to data in the Foundation Fieldbus application. Through this interface, parameters in Foundation Fieldbus devices can be accessed by applications such as FactoryTalk AssetCentre, FactoryTalk View, and FactoryTalk Historian. Process data from Foundation Fieldbus can also be distributed to any application software that has OPC capability.



System Requirements

Operational System	Windows XP with SP1 or SP2 Windows 2000 with SP2 or SP4 Windows Server 2003
Processor	Pentium III 733 MHz
RAM	256 MB
Free HDD Space	152 MB
Display	1024 x 768 – True Color
Additional Hardware	CD ROM Ethernet Network Interface Card
Additional Software	RSLogix 5000, V12 or later

FFLDC Hardware

Catalog Number	Number of H1 Segments
1757-FFLDC2	2
1757-FFLDC4	4

RSFieldbus Software

Catalog Number	Licenses
9308-RSFB64ENE	64 Function Blocks
9308-RSFB256ENE	256 Function Blocks
9308-RSFB1024ENE	1024 Function Blocks
9308-RSFBENU1	Upgrade from 64 to 256 Function Blocks
9308-RSFBENU2	Upgrade from 64 to 1024 Function Blocks
9308-RSFBENU3	Upgrade from 256 to 1024 Function Blocks

When choosing an RSFieldbus license, keep in mind that a typical device requires a minimum of three blocks: Resource, Transducer, and Process Control. For example, a 64 block RSFieldbus license will support approximately 21 devices. Any devices that requires more than three blocks will reduce the number of supported devices.

FFLDC Specifications

Physical Interfaces	2 or 4 H1 FOUNDATION Fieldbus interfaces 1 10/100 Ethernet interface (HSE, IP)
Number of H1 Networks ⁽¹⁾ per FFLD	2 for 1757-FFLDC2, 4 for 1757-FFLDC4
Maximum Number of Fieldbus Devices per H1 Segment	16 (8... 10 recommended)
Maximum Number of Fieldbus Devices per linking device	32 for the 1757-FFLDC2 linking device 64 for the 1757-FFLDC4 linking device
Virtual Communication Relationships (VCR)	64 publisher and 64 subscriber per H1 channel
Power Requirements	450 mA @ 24V dc (± 20%), 1.5 A In Rush Current
Panel Mounting Screw Torque (using M4 or #8 Screws)	10-16 in-lb (1.1-1.8Nm)
Program Retention (unpowered)	21 days
Electrostatic Discharge	IEC 61000-4-2: 6 kV contact discharges 8 kV air discharges
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 15g Non-operating 30g
Enclosure Type Rating	None (open-style)
Barometric Pressure Altitude	2000 m
Certifications: (when product is marked)	<ul style="list-style-type: none"> cULus UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada CE⁽²⁾ European Union 89/336/EEC EMC Directive, compliant with: <ul style="list-style-type: none"> • EN 50081-2; Industrial Immunity • EN 61326; Meas./Control/Lab., Industrial Requirements • EN 61000-6-2; Industrial Immunity • EN 61000-6-4; Industrial Emissions C-Tick⁽²⁾ Australian Radiocommunications Act, compliant with: <ul style="list-style-type: none"> • AS/NZS 2064; Industrial Emissions Ex⁽²⁾ European Union 94/9/EC ATEX Directive, compliant with: <ul style="list-style-type: none"> • EN 60079-15; Potentially Explosive Atmospheres, Protection "n" • EN 60079-0; General Requirements • II 3 G Ex nA nL IIC CI ControlNet Int'l conformance tested to ControlNet specifications FF FOUNDATION Fieldbus H1 CTk Registered

(1) Each network defined as a FOUNDATION Fieldbus 31.25 kbps H1 network per FFLD

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

Rockwell Automation, Listen. Think. Solve., ControlLogix, FactoryTalk and PlantPAx are registered trademarks of Rockwell Automation, Inc. RSFieldbus is a trademark of Rockwell Automation, Inc.

All trademarks and registered trademarks not belonging to Rockwell Automation are property of their respective companies.

www.rockwellautomation.com

Power, Control and Information Solutions Headquarters

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

Europe/Middle East/Africa: Rockwell Automation, Vorstlaan/Boulevard du Souverain 36, 1170 Brussels, 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