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Find the *National Instruments 183904-01* at our website: *Click HERE*

FOUNDATION Fieldbus Host Interfaces

NI AT-FBUS Series, NI PCI-FBUS/2, NI PCMCIA-FBUS Series

- H1 (31.25 kb/s) interface
- 1 or 2 ports
- Intel 80386EX processor
- Yamaha YTZ420 Fieldbus interface chip
- Embedded FOUNDATION Fieldbus communications-stack software
- Transformer-isolated fieldbus connection
- Plug and Play feature (PCI-FBUS/2)

Operating Systems
- Windows 2000/NT/XP

Recommended Software
- LabVIEW
- Lookout
- NI-FBUS Configurator

Other Compatible Software
- C/C++
- Visual Basic

Driver Software (included)
- NI-FBUS Communications Manager

NEW



PC Interfaces

National Instruments AT-FBUS, PCI-FBUS and PCMCIA-FBUS devices connect FOUNDATION Fieldbus devices to standard desktop, industrial, and notebook personal computers. AT-FBUS and PCMCIA-FBUS are available in 1 and 2-port configurations. PCI-FBUS is available in 2-port configuration. All NI H1 (31.25 kb/s) interfaces have passed FOUNDATION Fieldbus conformance testing. We include NI-FBUS Communications Manager (CM) software for Windows 2000/NT/XP with each interface. NI-FBUS CM provides a high-level interface to FOUNDATION Fieldbus devices without requiring in-depth knowledge of lower level fieldbus protocols. HMI and distributed control system (DCS) applications can use NI-FBUS CM for data collection and control on the fieldbus. With the PCI-FBUS and AT-FBUS, a desktop industrial computer can act as the host in a FOUNDATION Fieldbus system. Applications for the PCMCIA-FBUS include portable data logging and in-the-field configuration and maintenance of devices and networks.

PC Hardware

The NI FBUS interfaces use an Intel 80386EX microprocessor to execute the fieldbus communications stack software and a Yamaha YTZ420 as the fieldbus interface chip. The connection to the fieldbus network is transformer isolated.

The AT-FBUS and PCI-FBUS use a standard DB-9 male D-Sub connector to attach to the fieldbus network.

The PCMCIA-FBUS connects to the fieldbus using a cable that provides two connectors to attach to the fieldbus network – DB-9 male D-Sub connector and Combicon-style pluggable screw terminals.

Also included is the NI-FBUS CM, a DLL that you can use with NI LabVIEW and Lookout application software products, as well as programming environments such as Microsoft Visual C++, Visual Basic. With the NI-FBUS OPC server, you can connect to a broad range of application software packages, including LabVIEW and Lookout as well as other HMI/SCADA applications with OPC client interfaces. NI-FBUS CM is designed for multiple processes and multithreaded applications. With NI-FBUS CM, your applications can access fieldbus segments connected to the computer using one or more FBUS interface boards.

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FOUNDATION Fieldbus Host Interfaces

Specifications

Interface Card	Typical Current	Maximum Current
AT-FBUS	750 mA	850 mA
AT-FBUS/2	800 mA	900 mA
PCMCIA-FBUS	500 mA	750 mA
PCMCIA-FBUS/2	500 mA	750 mA
PCI-FBUS/2	820 mA	1 A

Physical

Dimensions

- AT ..... 10.7 by 19.1 cm (4.2 by 7.5 in.)
- PCI ..... 10.7 by 17.5 cm (4.2 by 6.9 in.)
- PCMCIA..... Type II PC card

I/O connector

- AT, PCI..... DB-9 male per fieldbus link
- PCMCIA..... DB-9 male and Combicon terminal per fieldbus link (cable included)

Operating Environment

- Ambient temperature..... 0 to 55 °C
- Relative humidity ..... 10 to 90%, noncondensing

Storage Environment

- Ambient temperature..... -20 to 70 °C
- Relative humidity ..... 5 to 95%, noncondensing

Noise Emission

- AT, PCI, PCMCIA..... FCC Class A Certified

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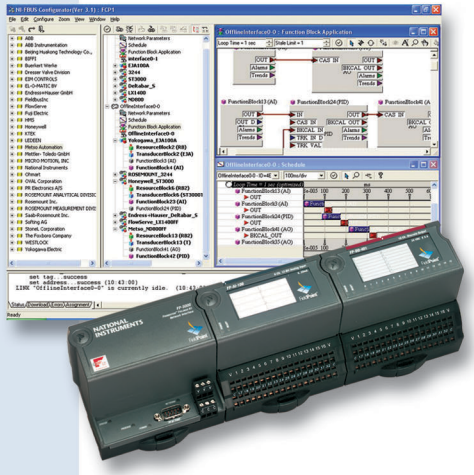
FOUNDATION Fieldbus Configuration Software and I/O Controller for FieldPoint

NI-FBUS Configurator

- 32-bit Windows 2000/NT/XP application for complete FOUNDATION Fieldbus segment configuration
- Assignment of device tags and addresses
- Assignment of function block tags
- Configuration of function block linkages and execution schedules
- Download/upload configurations and schedules
- Friendly, multiwindow user interface
- Online help using Device Descriptions

NI FP-3000

- Fieldbus controller for National Instruments FieldPoint distributed I/O system
- FOUNDATION Fieldbus H1 interface
- FOUNDATION Fieldbus function blocks
  - AI, AO, DI, DO, CDO, and PID
- Custom expression function block
- Runs as link master or basic device
- Intelligent diagnostics and maintenance
- HotPnP plug and play operation
- -40 to 55 °C operating range



Fieldbus Configuration Software

NI-FBUS Configurator is a 32-bit Windows 2000/NT/XP application that provides tools for complete configuration of FOUNDATION Fieldbus segments. An easy-to-use, multiwindow interface guides you through all aspects of fieldbus configuration.

NI-FBUS Configurator automatically detects devices when you connect them to fieldbus; and they go online. You can automatically or manually configure device tags to meet your requirements.

Function Block Configuration

When connected to a fieldbus network or after loading an existing configuration from disk, NI-FBUS Configurator displays all the function blocks available within a device. NI-FBUS Configurator recognizes all standard blocks as well as any manufacturer-specific custom blocks found in a device and included in the device description. NI-FBUS Configurator can automatically assign tags for the function blocks within a device. You link function blocks to create a fieldbus control scheme by graphically connecting the parameters of function blocks to one another. Function block linking includes online error checking, ensuring that you can make only valid function block parameter connections. NI-FBUS Configurator uses device descriptions to provide online documentation of function blocks and parameters.

Schedule Creation

NI-FBUS Configurator automatically generates the optimal execution schedule for function blocks and communication between function blocks. You can manually adjust the schedule timing to meet your specific control requirements. The schedule editor shows a time-based representation of function block execution and data communication that you can adjust by simply grabbing a function block with your mouse and moving it to the desired part of the schedule.

Fieldbus I/O Controller

The National Instruments FP-3000 is a network interface module for the FieldPoint I/O system. Each FP-3000 network module connects a node of up to nine FieldPoint I/O modules to a FOUNDATION Fieldbus network. The FieldPoint I/O system consists of AI, AO, DI, DO, relay, RTD, and thermocouple modules. In addition, the FP-3000 executes PID, the expression function block for custom control algorithms, and is Link Active Scheduler (LAS) capable. The network module also provides several diagnostic and autoconfiguration features, which simplify installation, use, and maintenance.

For more information on the FieldPoint distributed I/O system and the FP-3000 communication network module, see page 528.

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FOUNDATION Fieldbus HSE (Ethernet) Interface

NI FBUS-HSE/H1

- High-speed Ethernet linking device
- Ethernet TCP/IP 10BaseT (10 Mb/s) interface
- 2-port H1 (31.25 kb/s) output interface
- According to class 42a of HSE profile
- Runs as link master
- OPC Server 2.0
- Configure HSE linking device
- HSE communications capability

Operating Systems
- Windows 2000/NT/XP

Recommended Software
- LabVIEW
- Lookout
- NI-FBUS Configurator

Other Compatible Software
- C/C++
- Visual Basic

Driver Software (included)
- NI-FBUS Communications Manager

NEW



Overview

The National Instruments FBUS-HSE/H1 is a high-speed Ethernet (HSE) linking device that couples a 10 Mb/s Ethernet network to two H1 FOUNDATION Fieldbus segments. The linking device complies with Class 42a of the HSE profile and acts as the link-active scheduler (LAS) for the H1 segments, as well as manages all fieldbus communications. It provides connectivity to H1 devices through HSE network and support function block configurations and scheduling on H1 segments. The HSE linking device is configured from any Windows 2000/NT/XP based Ethernet-enabled workstation using the National Instruments NI-FBUS Configurator software. NI-FBUS Communications Manager software is included with the HSE linking device. The FBUS-HSE/H1 linking device, serving as link masters for 31.25-kbps H1 segments connected to the HSE network running at 10 Mbps or higher, is a crucial component in FOUNDATION technology. H1 is optimized for traditional process control applications, while HSE, which employs lower-cost, commercial off-the-shelf (COTS) Ethernet equipment, is designed for high-performance control applications and plant information integration. The combined H1/SHE solution allows for full integration of sensor, process/ discrete control, and hybrid/batch control subsystems with higher level, supervisory applications. The HSE linking device is the key to integrate H1 and HSE technology.

Specifications

Network

Network interface	10BaseT and 100BaseTX Ethernet
Cabling distance	100 m for HSE
Power supply range	11 to 30 VDC
Power consumption	8 W

Mechanical Dimensions

Dimensions	10.9 by 10.9 by 9.1 cm (4.3 by 4.3 by 3.6 in.)

Operating Environment

Ambient temperature	0 to 55 °C
Relative humidity	10 to 90%, noncondensing

Storage Environment

Ambient temperature	-55 to 85 °C
Relative humidity	5 to 95%, noncondensing

Noise Emission

FBUS-HSE/H1	FCC Class A Certified

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FOUNDATION Fieldbus Starter Systems

Process Control Starter Kit

The Fieldbus Process Control Kit contains all required components necessary for a small Fieldbus control system.

- PC interface (ISA) hardware
- NI-FBUS Configurator software
- NI Lookout HMI software
- NI FP-3000 (Fieldbus I/O controller)
- Fieldbus benchtop power supply and cabling

Fieldbus Host Starter Kits

The Fieldbus Host Starter Kit includes all components necessary to set up a FOUNDATION Fieldbus host system. The Host Starter Kit includes the following:

- PC interface (ISA, PCI, or PCMCIA) hardware
- NI-FBUS configurator software
- NI Lookout HMI software
- Fieldbus benchtop power supply and cabling

Ordering Information

Fieldbus Interface Devices

NI AT-FBUS (1 port) 777281-01
NI AT-FBUS/2 (2 ports) 777281-02
NI PCI-FBUS/2 (2 ports) 778573-01
NI PCMCIA-FBUS (1 port) 777282-01
NI PCMCIA-FBUS/2 (2 ports) 777282-02
NI FBUS-HSE/H1 778079-01
Includes hardware and NI-FBUS CM software.

Fieldbus I/O Controller

FP-3000 777833-01

Fieldbus Configuration Software

NI-FBUS Configurator with:
- AT-FBUS 777380-01
- PCI-FBUS 778651-01
- PCMCIA-FBUS 777381-01
- FBUS-HSE/H1 778080-01

NI-FBUS Configurator (software only) 777283-01

Fieldbus Communications Manager Software

NI-FBUS CM software (HSE) 778541-01

Fieldbus Network Monitor Software

NI-FBUS Monitor with:
- AT-FBUS 777241-01
- PCMCIA-FBUS 777377-01

NI-FBUS Monitor (software only) 777522-01

Starter Systems

Fieldbus Process Control Starter Kit 778083-P1*
Fieldbus Host Starter Kit with:
- AT-FBUS 777456-P1*
- PCI-FBUS/2 ..... 778655-P1*
- PCMCIA-FBUS 777457-P1*

Cables and Power Supply

PCMCIA-FBUS cable (1 port) 183809-01
PCMCIA-FBUS/2 cable (2 ports) 183904-01
Fieldbus benchtop power supply kit 777335-P1*

For FOUNDATION Fieldbus product support, please visit our online technical support site at ***ni.com/support***, or send e-mail to fieldbus.support@ni.com. Please note that we do not offer phone support for FOUNDATION Fieldbus products.

*Power supply (P)
0 = U.S. 120 VAC
3 = Universal Euro 240 VAC

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