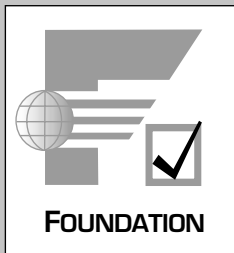


Network Monitors with Foundation Fieldbus® Interface Capability

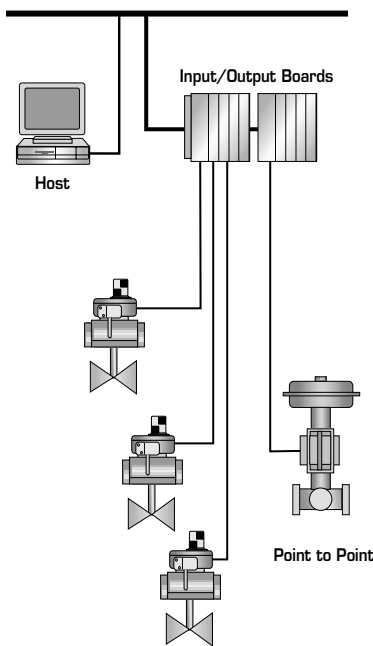
Intellis™ Foundation Fieldbus® Overview



WESTLOCK
Network Systems Group

Intellis™ 7300

Foundation Fieldbus® Network Systems



Foundation Fieldbus®

Foundation Fieldbus communications protocol is an industry proven international standard (IEC 61158) designed for use in the process industry. Features include multi-drop capabilities (as many as 32 devices per segment), extended trunk length, single loop integrity, "control in the field", power and communications on a shielded twisted pair network, and compatibility with intrinsically safe networks.

Physical Media	Twisted pair for communications, and power
Maximum Distance	1900m, including spurs
Maximum Network Monitors per System	6/segment if bus powered & IS 32/segment bus powered & non-IS
Maximum I/O Points per System	192 discrete
Current Consumption Per Network Monitor	18-24mA max. with Piezo operator 32mA max. with ULP coil
Interface Capability	All PLC's & DCS supporting the FF protocol
Communications Method	Peer to peer
Error Checking	Manchester encoding
Network Topology	Daisy Chain, trunk/drop (spurs), branching drop (spurs), point to point
Transmission Speed	31.25 kbps
Redundancy	Yes
Valve Specific Diagnostics	Yes

Westlock reserves the right to change product designs and specifications without notice, and is not responsible for errors and omissions.

Foundation Fieldbus®

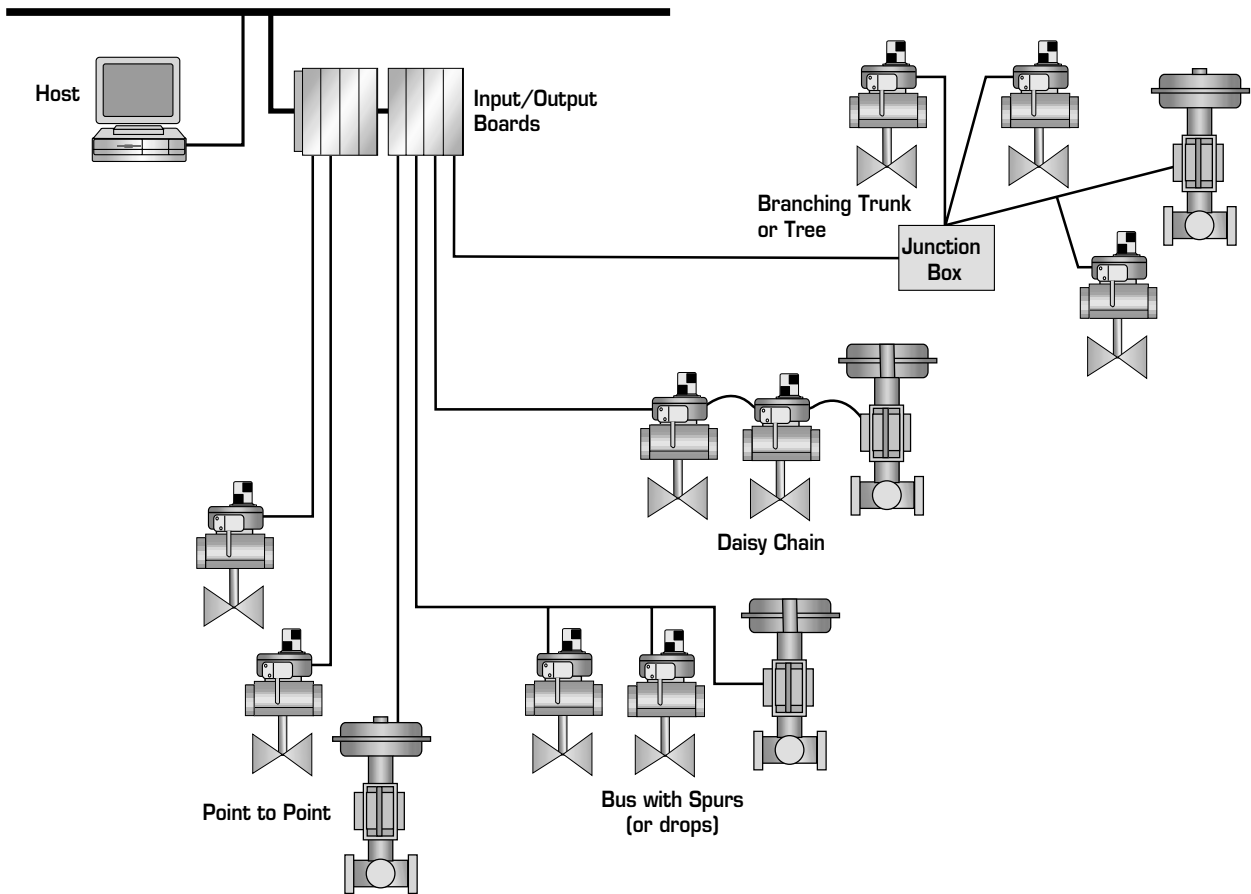
How The System Operates

Field Network

A field network consists of a group of Network Monitors interconnected with a common communications protocol. With the Foundation Fieldbus Intellis™ System, I/O service and diagnostics are communicated over a local area field network.

Network Monitor

Each Network Monitor is assigned a unique address by the configurator. This number identifies one Network Monitor from all the other Network Monitors in the system.



Number of I/O points on a single network.

Because each segment may connect up to 32 Network Monitors, the total number of programmable discrete I/O points would be 192 per segment.

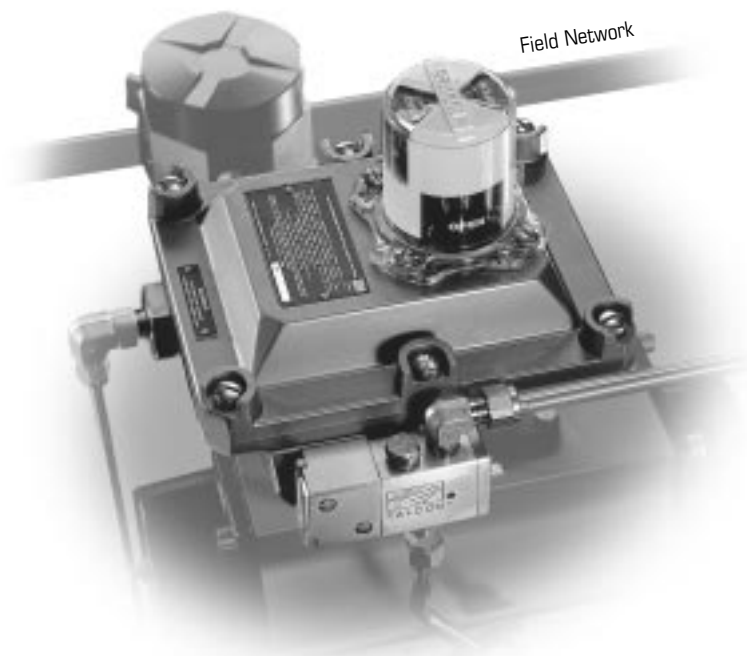
Number of I/O points on a single system.

Since each host can accommodate multiple segments I/O counts adequate for any process can be obtained.

NETWORK MONITORS

A Foundation Fieldbus® Network System is established by integrating an OnBoard I/O module directly within the Westlock Network Monitor. Each I/O card has the capability to accept input/output signals from automated valves, position sensors, solenoid valves, emissions monitors and external devices (level alarms, temperature and pressure sensors, flow switches, etc.)

Automated Valve Network Monitor



The Automated Valve Network Monitor couples directly to the pneumatic actuator. It houses three functional components; position sensors, low-power solenoid valve, and an OnBoard I/O module. The OnBoard I/O module is capable of accepting four input and two output devices.

ONBOARD I/O CARD

- INPUT 1:** Valve Position Sensor (open)
- INPUT 2:** Valve Position Sensor (closed)
- INPUT 3:** External Device
- INPUT 4:** External Device
- OUTPUT 1:** Solenoid Valve (actuation control)
- OUTPUT 2:** Dual Coil Application or External Device

External Device Network Monitor



An External Device Network Monitor is available for control or monitoring of non-valve related devices (sensors, alarms, actuators, indicating lights, etc.).

Depending upon the process layout, a wide range of options exist. Standard units are supplied with protective diodes and optical isolation features. External Device Network Monitors are available in **4 input/2 output** configuration. Power requirements for each external device are considered within the design parameters of the overall system.

Foundation Fieldbus®

Communications Overview

The Fieldbus Foundation defined application layer is based on Function Blocks. Function Blocks are structures with defined behavior used to represent different types of functions that the device performs. The parameter of these blocks follow a standard framework, but manufacturers are free to enhance the standard features and add additional functions as necessary. Every Fieldbus Foundation device has a Resource Block, Function Blocks, and possibly a Transducer Block.

Once the hardware of a FF device is configured, fieldbus communication is used to configure the transducer block parameters. The desired transducer functionality is associated with a specific function block via a Channel. The host system is used to link the function blocks together to create a control application that can be downloaded to the devices on the segment.

Foundation Fieldbus provides the user with standardization, calibration, diagnostic and status data that enables users of FF registered products to benefit from the advantage of "smart" instruments.

The following companies manufacture hosts for Foundation Fieldbus (FF) that have undergone the Fieldbus Foundation's Host Interoperability Support Test (HIST).

- ABB
- Fisher-Rosemount
- Foxboro
- Honeywell
- Smar
- Yokogawa

Description of the HIST

Foundation Fieldbus does not intend to define the features and components of a FF host. Each host is defined by the manufacturer to provide specific functions within a fieldbus network. A host could be a configuration tool, a recording device, alarm display panel, human machine interface or a combination of functionality. The HIST provides generic test procedures.

A generic set of FF host features that may be implemented within a host are defined to implement a set of applicable test procedures. A host will conform to some, or perhaps all features as defined by the host checklist. As hosts can have various definitions, not all features may be applicable to a host implementation. It is not expected that every host should support each feature.

Many of the test procedures require that features be supported by both the device as well as the host.

WESTLOCK

Westlock Controls Corp.

280 Midland Avenue
Saddle Brook, NJ 07663
201-794-7650
Fax: 201-794-0913

EUROPE

Westlock Controls LTD.

22 Chapman Way
Royal Tunbridge Wells, Kent
TN23EF England
011-44-189-251-6277
Fax: 011-44-189-251-6279

SOUTH AMERICA

Westlock Equipamentos De Controles Ltda.

Rua, Sao Paulo 291 - Alphaville
Banueri, Sao Paulo
SP 06464-130
011-55-11-4191-0930
Fax: 011-55-11-4191-0931

www.westlockcontrols.com