

Foundation Fieldbus Protocol Overview

Intellis 7300



Foundation Fieldbus is a powerful networking solution that reduces the cost and time required to install and wire industrial automation devices and provides a wealth of diagnostic data from the field. A single FF Intellis System will accommodate up to 32 valves and 192 discrete I/O points. FF has the capability to interconnect complex and simple devices from multiple vendors on the same network. FF supports true distributed control allowing for configuration of devices for local control in the field, in the host or both.

Foundation Fieldbus is an open networking standard which provides an open specification for both the control application and the communication on the bus. The specification grew out of work done by the IEC and the ISA to define an international fieldbus standard. The final H1 specification¹ was released in August of 1996 while the final specification for HSE2 was released in April of 2000.

The Fieldbus Foundation oversees the FF specification and conformance testing of FF products. It is open to any manufacturer or user of this protocol with a worldwide membership of over 100 companies.

Physical Media	Two wire cable (communications & power)
Maximum Distance	1900m, including spurs
Maximum Network Monitors per System	6/segment if bus powered & IS 12/segment if bus powered & non-IS, 32/seg. if neither bus powered nor IS
Maximum I/O Points per System	192/network
Current Consumption Per Network Monitor	18-24 mA IS & 32 mA w/ ULP coil
Interface Capability	All PLC's & DCS supporting the Foundation Fieldbus protocol
Communications Method	Publisher/subscriber, token ring & client/server
Error Checking	Manchester encoding
Network Topology	Trunk & drop, zero drop, tree & star
Transmission Speed	31.25 kbps
Redundancy	Yes
Valves Specific Diagnostics	Yes