



FieldServer Driver **FSXXXX-XX** *XML TCP Ethernet Driver*

XML Protocol

The XML protocol was designed as a generic communications protocol between devices utilizing XML-like tagging. The benefits of an XML protocol are its open and flexible design, as well as the ease in which it can be read. All data is passed as ASCII text organized within a user defined tagging structure. An XML parser can interpret messages of different structures provided it can recognize the tagging design. This means that devices can send different message contents, in a different order and understand each other if they use the same XML message tagging design. ASCII messages are an open and portable means of transferring data which is both human and machine readable. Without prior knowledge of the specific protocol, the contents of a message can be understood because the data is self describing.

A generic XML protocol was developed for use with devices typically used in conjunction with the Field Server. The protocol is described in the XML Protocol Serial Driver Manual. The XML driver implements a subset of this protocol which is also discussed in the Manual. A device which implements this protocol subset can be used in conjunction with this driver.

Description

The XML Tcp driver allows the FieldServer to transfer data to and from devices over an Ethernet connection.

The FieldServer can emulate either a Server or Client. The driver is an active client driver. This means that it initiates read polls with a device which is expected to provide responses. Server functionality is provided by the driver too.

The driver communicates data between devices via data tables (arrays) of a single data type. As the tables typically contains more than one data element, the retrieved data is stored in a number of consecutive data array locations in the FieldServer.

The driver can be configured to read a specific variable from an XML device and store its value using optional scaling in a configurable location in a FieldServer data array.

The Fieldserver can emulate a large number of virtual nodes when configured as a server. When configured as a client the Fieldserver can poll any reachable IP address.



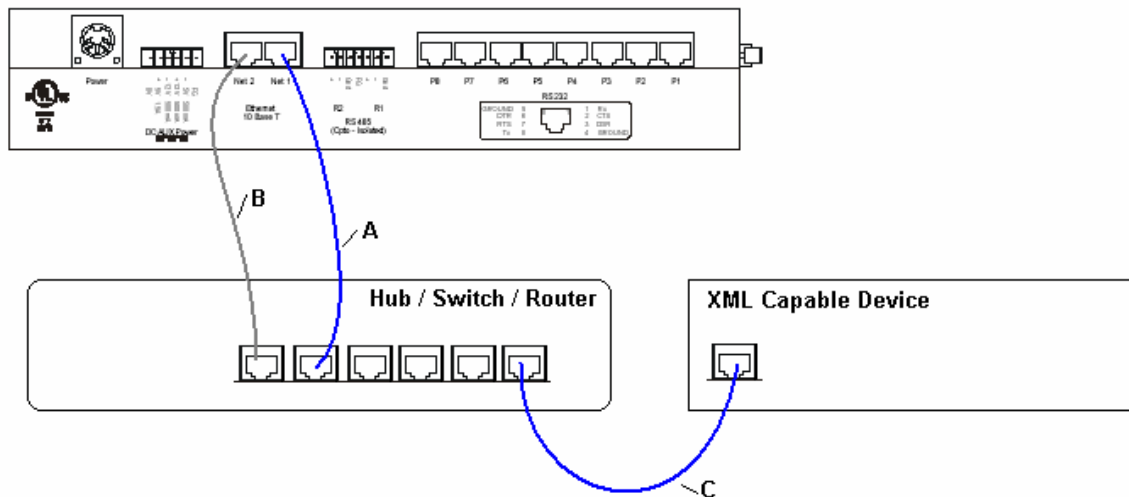
Formal Driver Type

Ethernet
Client and Server

Connection Information

Connection type: Ethernet TCP/IP
Hardware interface: Adapters N1 / N2
Multidrop Capability: No
Source Port: 6001

Connection configurations



Segment A - 'Off the shelf' Ethernet patch cable with RJ45 connectors
Segment B - Alternate to 'A' – Adapters N1 or N2 may be used.
Segment C - 'Off the shelf' Ethernet patch cable with RJ45 connectors

Connection Notes

There are no special connection considerations.



Limitations and Exclusions

The XML driver implements a subset of the XML Protocol described in the XML Driver Manual. If the sequence of message tags and nesting is not in the expected sequence, the parser will not read the messages.

The ASCII messages are expected to be terminated with a newline and null character. If additional stop or start bytes exist between messages, the driver may not be able to parse the data.

The data buffers are limited to 3K. If messages exceed 3K in total length including data, then messages may be truncated and invalid. Response and inter-character timeouts may need to be adjusted for each configuration to account for transmission and processing delays if large messages are expected.

Port expansion is not supported in this driver.

The broadcast address cannot be used as the IP address of the remote device.

Revision History

Date	Driver Version	Document Revision	Resp	Comment
16Jan03	1.03a	0	PMC	Initial Release