FieldServer Protocol Driver Sheet
OPC UA

FS-8705-51 Version: 1.0? / Rev. 1.A

1 DESCRIPTION

The OPC UA Driver allows the FieldServer to transfer data to and from devices over Ethernet using the OPC UA protocol. The OPC UA Driver uses TCP, either connecting to an OPC UA server using regular OPC TCP or securely using HTTPS. If using HTTPS, users can upload their client certificate and private key. The default port is 26543 and is configurable.

The driver was developed from the OPC Unified Architecture protocol specification from the OPC Foundation. The specification can be found at https://opcfoundation.org/developer-tools/specifications-unified-architecture.

The FieldServer can emulate both a Client and a Server. When configured as a Client, the OPC UA driver will connect to the configured OPC UA Servers and attempt to read the requested data points. This data is stored on the FieldServer to be mapped to other protocols or simply to be viewed. When configured as a Server, the OPC UA driver creates an endpoint that other OPC UA Clients can connect to and creates the OPC objects and attributes based on the configuration to make data from other protocols available to OPC UA Clients.

1.1 Connection Facts

FieldServer Mode	Nodes	Comments
Client	*	The client mode can connect to multiple OPC UA Servers as a Client to read multiple data points. The limiting factor is the point count of the FieldServer device.
Server	1	The server mode supports setting up one OPC UA resource endpoint, but multiple OPC UA clients can connect to it to read data.

2 FORMAL DRIVER TYPE

Ethernet

Client or Server

3 COMPATIBILITY

FieldServer Model	Compatible
ProtoCessor	Yes
ProtoCarrier	Yes
ProtoNode	Yes
ProtoAir	Yes

4 CONNECTION INFORMATION

Connection Type: Ethernet
Ethernet Speeds Supported: 10Base-T, 100Base-T

5 DEVICES TESTED

Device	Tested (FACTORY, SITE)
OPC Foundation Reference Client / Server	FACTORY

6 COMMUNICATIONS OPTIONS SUPPORTED

6.1 Data Types Supported

Data Type	Comments
Null	A two-state logical value (true or false).
Boolean	An integer value between -128 and 127.
SByte	An integer value between 0 and 255.
Byte	An integer value between -32 768 and 32 767.
Int16	An integer value between 0 and 65 535.
UInt16	An integer value between -2 147 483 648 and 2 147 483 647.
Int32	An integer value between 0 and 4 294 967 295.
UInt32	An integer value between -9 223 372 036 854 775 808 and 9 223 372 036 854 775 807.
Int64	An integer value between 0 and 18 446 744 073 709 551 615.
UInt64	A two-state logical value (true or false).
Float	32 bit IEEE floating point.
Double	An IEEE double precision (64 bit) floating point value.
String	A sequence of Unicode characters.
DateTime	A DateTime value is encoded as a 64 bit signed integer which represents the number of 100 nanosecond intervals since January 1, 1970 (UTC).
Guid	A 16 byte value that can be used as a globally unique identifier.
ByteString	A sequence of octets.

6.2 Supported OPC Attribute Types

NodeId	EventNotifier
NodeClass	Value
BrowseName	DataType
DisplayName	ValueRank
Description	ArrayDimensions
WriteMask	AccessLevel
UserWriteMask	UserAccessLevel
IsAbstract	MinimumSamplingInterval
Symmetric	Historizing
InverseName	Executable
ContainsNoLoops	

6.3 Supported Functionality

Client	- Connect (using OPC TCP or https) - Create Session (with or without username and password) - Read
Server	- Read - Write

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