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FS-8705-51 – OPC UA

DATASHEET – Rev 5

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 for 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.

CONNECTION FACTS

This table summarizes the number of connections this driver supports for each of its modes.

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.

FORMAL DRIVER TYPE

Ethernet
Client or Server

FS-8705-51 – OPC UA

COMPATIBILITY

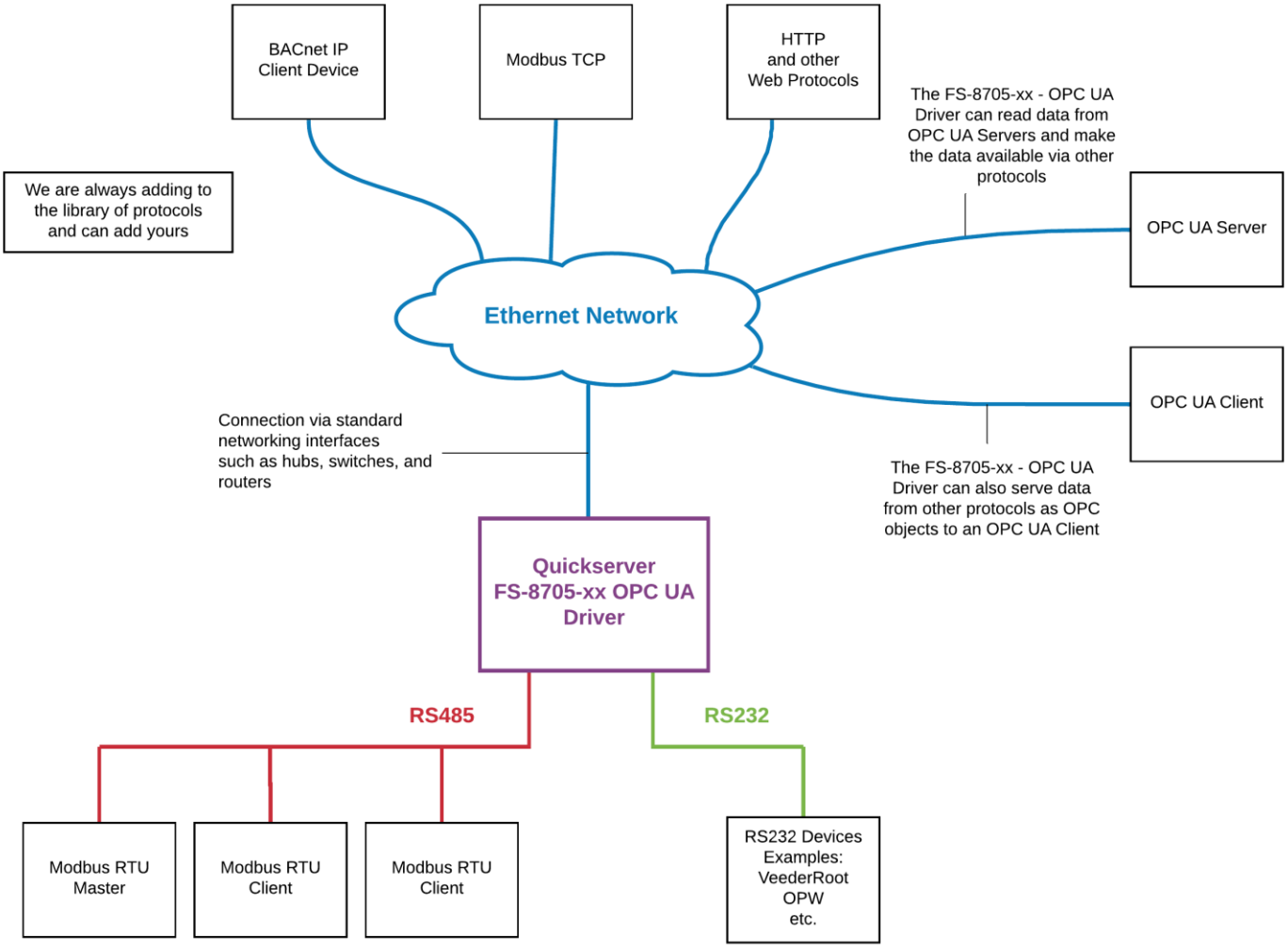
FIELDSERVER MODEL	COMPATIBLE
QuickServer FS-QS-1xxx	Yes
QuickServer FS-QS-2xxx	Yes
QuickServer FS-QS-3xxx	Yes

CONNECTION INFORMATION

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

CONNECTION CONFIGURATIONS

This block diagram lists common network connections that can monitor and/or serve OPCUA data using other protocols like Modbus® RTU/TCP, BACnet® and HTTP.



COMMUNICATION FUNCTIONS

Supported Datatypes

- Null
- Boolean
- Byte
- UInt16
- UInt32
- UInt64 *
- SByte
- Int16
- Int32
- Int64 *
- Float
- Double

__Note__: For the Client Driver, 64bit values can only be read and not written.

The following datatypes are currently **not** supported. If required, please contact Chipkin.

- String
- DateTime
- Guid
- ByteString

Supported OPC Attribute Types

The following is a list of attributes that can be read from an OPCUA object. The most common one will be the 'Value' attribute, but the OPCUA driver supports reading from the other attributes as well.
__Note__: The values of these attributes must be one of the supported datatypes listed above.

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

Supported Driver Functionality

Client:

- Connect (using opc.tcp or https)
- CreateSession (with or without username and password)
- Read
- Write*

__Note__: Writes are available as Write-throughs. Please contact Chipkin for more information.

Server:

- Read
- Write

__Note__ The OPC UA Server does support not security certificates at this time.

CUSTOMER SUPPORT

OPCUA Driver for FieldServer was developed by Chipkin, and we are proud to provide support for our products. For technical support, sales and customer service, please call us at 1 (866) 383-1657.

Thanks for choosing Chipkin's products and integration services to meet your building and industrial automation requirements!

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APPENDIX A: DEVICES TESTED

This tables summarize the OPCUA devices that have been tested. Other devices may be supported.

DEVICE	TESTED (FACTORY/SITE)
OPC Foundation Reference Client/Server	Factory
Test Server: opc.tcp://milo.digitalpetri.com:62541/milo	Factory

REVISION HISTORY

This table summarizes the update history for this protocol data sheet. Please contact Chipkin by phone or email for an updated version of this document.

DATE	RESP.	DRIVER VERSION	DOCUMENT REVISION	COMMENTS
27 Oct 2020	ACF	0.0.1	1	Created document
27 Oct 2020	ACF	0.0.1	2	Formatting
26 May 2020	ACF	0.0.1	3	Added unsupported server functionality.
27 May 2021	YC	0.01	4	Updated to new template
11 April 2025	ACF	1.0.2	5	Added support for Client Writes via Write-through Removed support for ByteString, String, GUID, and DateTime