



FieldServer Driver - Serial FS-8700-19 Metasys N2

Description

The Metasys N2 network supports communications with a diverse range of devices. Many N2 compatible devices use their own flavor of the protocol. The different flavors are designed to co-exist on the same N2 network. Care must be taken to ensure the device of interest is covered by the FieldServer implementation.

At present the FieldServer Metasys N2 driver will support communications with the following devices or classes of devices when acting as a client:

1. N2Open-compliant devices. N2Open is a published N2-compatible protocol enabling 3rd party device vendors to integrate with N2.
2. VMA 1400 series (with restrictions)
3. DX9100 and XT9100

When acting as a server the FieldServer Metasys N2 driver can emulate an N2Open device only.

FieldServer Mode	Nodes	Comments
Client	1	Only 1 client node allowed on Multidrop systems. Can communicate with: <ul style="list-style-type: none">• N2Open• VMA 1400 series (AI,BI,AO,BO and custom types)• DX9100 / XT9100
Server	255	

Formal Driver Type

Serial, Client or Server

Connection Information

Connection type:	RS-485 (Two wire, Half-Duplex)
Baud Rates:	9600 (N2 standard)
Data Bits:	8
Stop Bits:	1
Parity:	None
Multidrop Capability:	Yes

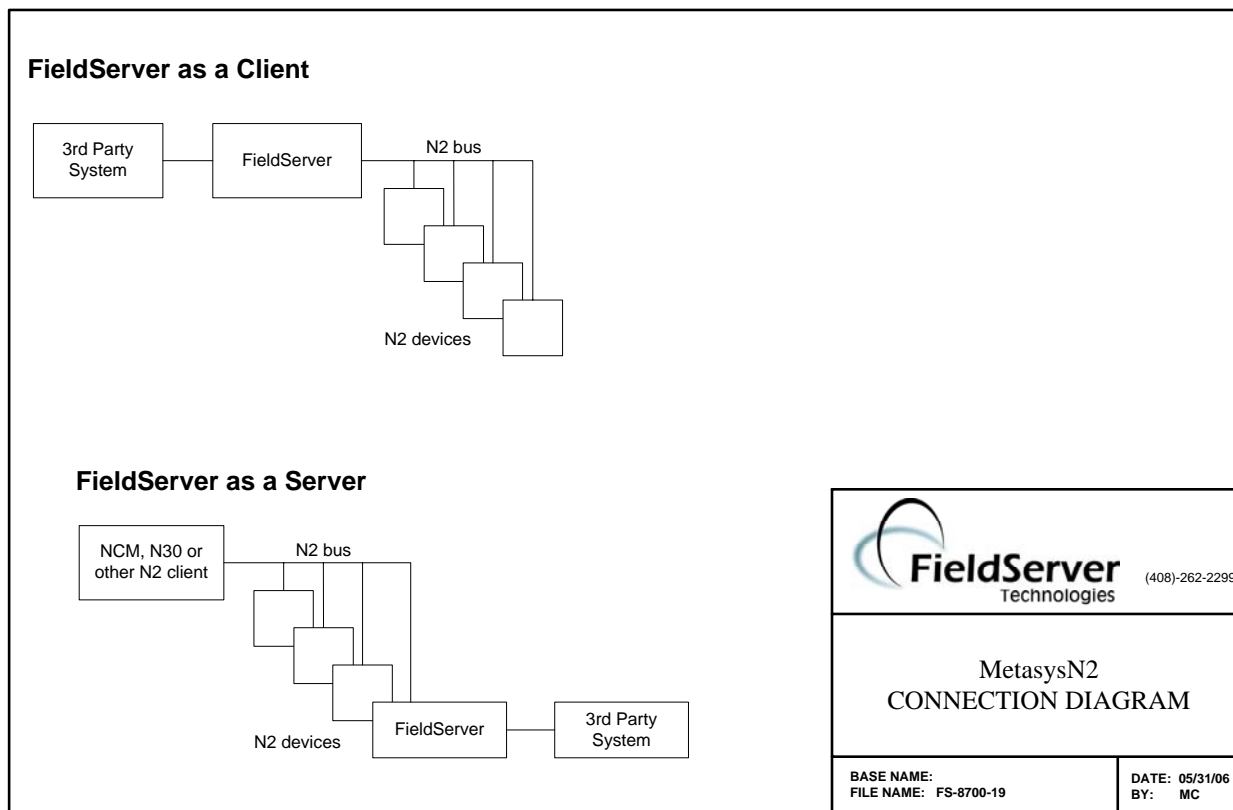


Devices Tested

Device	Supported	Tested (FACTORY, SITE)	N2Open Device
UNT	✓	Site	✓
VMA1410, VMA1420	✓	Factory and Site	
DX9100 with XT9100 extension	✓	Factory and Site	
LCP/DX9100	✗	not tested	
NCM (FieldServer as N2Open server)	✓	Factory and Site	✓
VAV	✓	Site	✓
AHU	✓	not tested	✓
VND	✓	not tested	✓
PHX	Consult Factory	not tested	Consult Factory
MIG	Consult Factory	not tested	Consult Factory
ILC	Consult Factory	not tested	Consult Factory
IFC	Consult Factory	not tested	Consult Factory
TC-9100	Consult Factory	not tested	Consult Factory
TEC1000	Consult Factory	not tested	Consult Factory



Connection Configurations



Connection Notes

Only one N2 client may be connected to a N2 network. If the FieldServer is to act as a client, ensure no other clients are connected to the same N2 network.



Communications Functions – Supported Functions at a Glance:

Data Types Supported – N2Open

FieldServer Data Type	Description (or Device Data Type)
Analog_Input	Analog Input (AI)
Digital_Input	Binary Input (BI)
Analog_Output	Analog Output (AO)
Digital_Output	Binary Output (BO)
Float_Reg	Internal Float value (ADF)
Integer	Internal Integer value (ADI)
Byte	Internal Byte value (BD)

Read Operations Supported – N2Open

FieldServer as a Client	FieldServer as a Server
Read Current Value (all data types)	Read Current Value (all data types)
direct read, Change-of-State (COS) poll	direct read, Change-of-State (COS) poll
Read Attribute (all data types):	Read Attribute (all data types):
direct read, specifying a legal attribute number	direct read, specifying a legal attribute number
	Identify Self command

Write (Control) Operations Supported – N2Open

FieldServer as a Client ¹	FieldServer as a Server ¹
Override Current Value (all data types) implemented as Write on FieldServer	Override Current Value (all data types) implemented as Write on FieldServer
Override Release (all data types)	Override Release (all data types)
Write Attribute (all data types) direct write, specifying a legal attribute number	Write Attribute (all data types) direct write, specifying a legal attribute number

Listing of Supported Attributes – N2Open

Data Type	Attribute No.	Attribute
Analog Input	1	Object Configuration
	2	Object Status
	3	Analog Input Value
	4	Low Alarm Limit
	5	High Alarm Limit
	6	Low Warn Limit
	7	High Warn Limit
	8	Differential

¹ On a Metasys network there should be only one device overriding a value at any time. Otherwise it is possible that the Metasys Master sees a value different to the overwritten value as the FieldServer will respond to a poll with the value last read from the Slave device.



Data Type	Attribute No.	Attribute
Binary Input	1	Object Configuration
	2	Object Status
Analog Output	1	Object Configuration
	2	Object Status
	3	Current Value
Binary Output	1	Object Configuration
	2	Object Status
	3	Minimum On-Time
	4	Minimum Off-Time
	5	Maximum Cycles/Hour
Internal Float	1	Object Status
	2	Current Value
Internal Integer	1	Object Status
	2	Current Value
Internal Byte	1	Object Status
	2	Current Value

Unsupported Functions and Data Types – N2Open

Function	Reason
Time Update	Not required
Read Memory Diagnostics	Not required
Warm Start Message	Not required
Status Update Message	Not required
Programming messages (upload, download)	FieldServer is a data transfer device, and as such, programming messages are not required

Data Types Supported – VMA

FieldServer Data Type	Description (or Device Data Type)
Analog_Input	Analog Input (AI)
Digital_Input	Binary Input (BI)
Analog_Output	Analog Output (AO)
Digital_Output	Binary Output (BO)
Float_Reg	Internal Float value (ADF)
Integer	Internal Integer value (ADI)

Unsupported Data Types – VMA (Refer to Driver Manual for Details)

FieldServer Data Type	Description (or Device Data Type)
Byte	Internal Byte value (BD)

Read Operations Supported – VMA

FieldServer as a Client	FieldServer as a Server
Read Current Value (all data types)	Not applicable
Direct Read, Change-of-State (COS) poll	



Write (control) Operations Supported – VMA

FieldServer as a Client	FieldServer as a Server
Write / Override Current Value (all data types) implemented as Write on FieldServer	Not applicable
Override Release (AI and BI only) use writes for outputs and internal values	

Unsupported Functions and Data Types – VMA

Function	Reason
Programming messages (upload, download)	FieldServer is a data transfer device, and as such, programming messages are not required.

Data Types Supported - DX9100

FieldServer Data Type	Description (or Device Data Type)
Not specified for DX9100 device type	Supported sections of Address Map:
	general control module
	programmable modules 1-12
	analog input modules 1-8
	analog output modules 1-2
	digital output modules 3-8
	extension modules 1-8
	time schedules 1-8
	optimal start/stop modules 1-2
analog output modules 9-10	
auxiliary analog output modules 11-13	

Read Operations Supported - DX9100

FieldServer as a Client	FieldServer as a Server
Read of all points supported	Not applicable

Write (control) Operations Supported - DX9100

FieldServer as a Client	FieldServer as a Server
Write of all points supported	Not applicable
DX9100 may not allow writes to specific values	

Unsupported Functions and Data Types - DX9100

Function	Reason
Programming messages	FieldServer is a data transfer device, and as such, programming messages are not required



THIS PAGE INTENTIONALLY LEFT BLANK