



FieldServer
FS-8700-62 J-Bus
Driver Manual
(Supplement to the FieldServer Instruction Manual)

APPLICABILITY & EFFECTIVITY

Effective for all systems manufactured after December 2017.

Driver Version: 4.02
Document Revision: 4.B

Technical Support

Please call us for any technical support needs related to the FieldServer product.

Sierra Monitor Corporation
1991 Tarob Court
Milpitas, CA 95035

Website: www.sierramonitor.com

U.S. Support Information:

+1 408 964-4443

+1 800 727-4377

Email: support@sierramonitor.com

EMEA Support Information:

+44 2033 1813 41

Email: support.emea@sierramonitor.com

TABLE OF CONTENTS

- 1 J-Bus Description 4**
- 2 Driver Scope of Supply 4**
 - 2.1 Supplied by Sierra Monitor Corporation 4
 - 2.2 Provided by the Supplier of 3rd Party Equipment..... 4
 - 2.2.1 Required 3rd Party Hardware..... 4
- 3 Hardware Connections..... 5**
- 4 Data Array Parameters 6**
- 5 Configuring the Fieldserver as a J-Bus client 7**
 - 5.1 Client Side Connection Parameters 7
 - 5.2 Client Side Node Parameters 7
 - 5.3 Client Side Map Descriptor Parameters 8
 - 5.3.1 FieldServer Specific Map Descriptor Parameters 8
 - 5.3.2 Driver Related Map Descriptor Parameters 8
 - 5.3.3 Timing Parameters 8
 - 5.3.4 Map Descriptor Example 8
- 6 Configuring the FieldServer as a J-Bus Server 9**
 - 6.1 Server Side Connection Descriptors 9
 - 6.2 Server Side Node Descriptors 9
 - 6.3 Server Side Map Descriptors..... 10
 - 6.3.1 FieldServer Specific Map Descriptor Parameters 10
 - 6.3.2 Driver Specific Map Descriptor Parameters 10
 - 6.3.3 Map Descriptor Example1 10
 - 6.3.4 Map Descriptor Example 2 10

1 J-BUS DESCRIPTION

The J-Bus driver allows the FieldServer to transfer data to and from devices over either RS-232 or RS-485 using J-Bus protocol. The FieldServer can emulate either a Server or Client.

The information that follows describes how to expand upon the factory defaults provided in the configuration files included with the FieldServer.

2 DRIVER SCOPE OF SUPPLY

2.1 Supplied by Sierra Monitor Corporation

PART #	Description
FS-8915-10	UTP cable (7 foot) for Ethernet connection
FS-8917-01	RJ45 to DB25M connection adapter
FS-8700-62	Driver manual

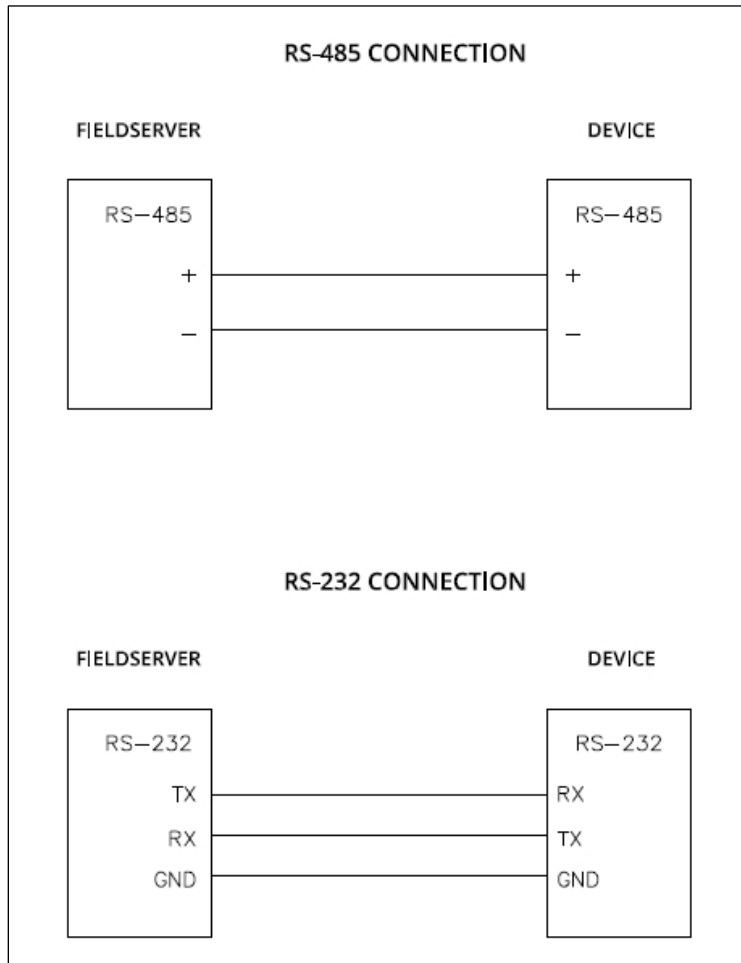
2.2 Provided by the Supplier of 3rd Party Equipment

2.2.1 Required 3rd Party Hardware

Part #	Description
	J-Bus device

3 HARDWARE CONNECTIONS

The FieldServer is connected to the J-Bus Device as shown in connection drawing.
 Configure the J-Bus Device according to manufacturer's instructions.



4 DATA ARRAY PARAMETERS

Data Arrays are “protocol neutral” data buffers for storage of data to be passed between protocols. It is necessary to declare the data format of each of the Data Arrays to facilitate correct storage of the relevant data.

Section Title			
Data_Arrays	Column Title	Function	Legal Values
Data_Array_Name	Provide name for Data Array.	Up to 15 alphanumeric characters	
Data_Array_Format	Provide data format. Each Data Array can only take on one format.	Float, Bit, Uint16, Sint16, Packed_Bit, Byte, Packed_Byte, Swapped_Byte	
Data_Array_Length	Number of Data Objects. Must be larger than the data storage area required by the Map Descriptors for the data being placed in this array.	1-10,000	

Example

```

// Data Arrays
Data_Arrays
Data_Array_Name , Data_Array_Format , Data_Array_Length
DA_AI_01 , Uint16 , 200
DA_AO_01 , Uint16 , 200
DA_DI_01 , Bit , 200
DA_DO_01 , Bit , 200
    
```

5 CONFIGURING THE FIELDSEVER AS A J-BUS CLIENT

For detailed information on FieldServer configuration, refer to the FieldServer Configuration Manual. The information that follows describes how to expand upon the factory defaults provided in the configuration files included with the FieldServer (see “.csv” sample files provided with the FieldServer).

This section documents and describes the parameters necessary for configuring the FieldServer to communicate with a J-Bus Server.

The configuration file tells the FieldServer about its interfaces, and the routing of data required. In order to enable the FieldServer for J-Bus communications, the driver independent FieldServer buffers need to be declared in the “Data Arrays” section, the destination device addresses need to be declared in the “Client Side Nodes” section, and the data required from the Servers needs to be mapped in the “Client Side Map Descriptors” section. Details on how to do this can be found below.

NOTE: In the tables below, * indicates an optional parameter and the bold legal values are default.

5.1 Client Side Connection Parameters

Section Title		
Connections ¹		
Column Title	Function	Legal Values
Port	Specify which port the device is connected to the FieldServer.	P1-P2, R1-R2
Baud*	Specify baud rate.	110-115200 Standard baud rates only
Parity*	Specify parity.	Even, Odd, None, Mark, Space
Data_Bits*	Specify data bits.	7, 8
Stop_Bits*	Specify stop bits.	1
Protocol	Specify protocol used.	J-Bus
Poll_Delay*	Time between internal polls.	0-32000 seconds, 0.5 seconds

Example

```

// Client Side Connections
Connections
Port , Protocol , Baud , Parity , Data_Bits , Stop_Bits , Poll_Delay
P8 , J-Bus , 9600 , None , 8 , 1 , 0.100s
    
```

5.2 Client Side Node Parameters

Section Title		
Nodes		
Column Title	Function	Legal Values
Node_Name	Provide name for Node.	Up to 32 alphanumeric characters
Node_ID	Modbus station address of physical Server node.	1-1255
Protocol	Specify Protocol used.	J-Bus
Port	Specify through which port the device is connected to the FieldServer.	P1-P2, R1-R2

Example

```

// Client Side Nodes
Nodes
Node_Name , Node_ID, , Protocol , Port
PLC 1 , 1 , J-Bus , P1
    
```

¹ Handshaking is not supported.

5.3 Client Side Map Descriptor Parameters

5.3.1 FieldServer Specific Map Descriptor Parameters

Section Title		
Map_Descriptors		
Column Title	Function	Legal Values
Map_Descriptor_Name	Name of this Map Descriptor.	Up to 32 alphanumeric characters
Data_Array_Name	Name of Data Array where data is to be stored in the FieldServer.	One of the Data Array names from Data Array section above
Data_Array_Offset	Starting location in Data Array.	0 to maximum specified in Data Array section above
Function	Function of Client Map Descriptor.	RDBC

5.3.2 Driver Related Map Descriptor Parameters

Column Title	Function	Legal Values
Node_Name	Name of Node to fetch data from.	One of the node names specified in "Client Node Descriptor" above
Data_Type	Data type of the related J-Bus register.	AR, AI, DI, DO
Address	Starting address of read block.	0 - 65535
Length	Specifies how many register bits etc. to read.	0 – 125 for Analog values 0 – 2000 for Binary values
Data_Array_Low_Scale*	Scaling zero in Data Array.	-32767 to 32767, 0
Data_Array_High_Scale*	Scaling max in Data Array.	-32767 to 32767, 100
Node_Low_Scale*	Scaling zero in Connected Node.	-32767 to 32767, 0
Node_High_Scale*	Scaling max in Connected Node.	-32767 to 32767, 100

5.3.3 Timing Parameters

Column Title	Function	Legal Values
Scan_Interval	Seconds per scan.	0-32000, 1

5.3.4 Map Descriptor Example

```
// Client Side Map Descriptors

Map_Descriptors
Map_Descriptor_Name , Data_Array_Name , Data_Array_Offset , Function , Node_name
CMD_AI_01           , DA_AI_01           , 0                , RDBC   , PLC 1
CMD_AO_01           , DA_AO_01           , 0                , RDBC   , PLC 1

, Data_Type , Address , Length , Scan_Interval
, AR        , 0       , 20     , 1.000s
, AR        , 0       , 20     , 1.000s
```


6 CONFIGURING THE FIELDSEVER AS A J-BUS SERVER

For detailed information on FieldServer configuration, refer to the FieldServer Configuration Manual. The information that follows describes how to expand upon the factory defaults provided in the configuration files included with the FieldServer (see “.csv” sample files provided with the FieldServer).

This section documents and describes the parameters necessary for configuring the FieldServer to communicate with a J-Bus Client.

The configuration file tells the FieldServer about its interfaces, and the routing of data required. In order to enable the FieldServer for J-Bus communications, the driver independent FieldServer buffers need to be declared in the “Data Arrays” section, the FieldServer virtual node(s) needs to be declared in the “Server Side Nodes” section, and the data to be provided to the clients needs to be mapped in the “Server Side Map Descriptors” section. Details on how to do this can be found below.

NOTE: In the tables below, * indicates an optional parameter and the bold legal values are default.

6.1 Server Side Connection Descriptors

Section Title		
Connections ²		
Column Title	Function	Legal Values
Port	Specify which port the device is connected to the FieldServer.	P1-P2, R1-R2
Baud*	Specify baud rate.	110 – 115200 standard baud rates only
Parity*	Specify parity.	Even, Odd, None , Mark, Space
Data_Bits*	Specify data bits.	7 , 8
Stop_Bits*	Specify stop bits.	1
Protocol	Specify protocol used.	J-Bus

Example

```

// Server Side Connections

Connections
Port , Protocol , Baud , Parity , Data_Bits , Stop_Bits
P1 , J-Bus , 9600 , None , 8 , 1
    
```

6.2 Server Side Node Descriptors

Section Title		
Nodes		
Column Title	Function	Legal Values
Node_Name	Provide name for node.	Up to 32 alphanumeric characters
Node_ID	Node ID of physical Server node.	1 – 255
Protocol	Specify protocol used.	J-Bus

Example

```

// Server Side Nodes

Nodes
Node_Name , Node_ID , Protocol
MBP_Srv_11 , 11 , J-Bus
    
```

² Handshaking is not supported.

6.3 Server Side Map Descriptors

6.3.1 FieldServer Specific Map Descriptor Parameters

Section Title		
Map_Descriptors		
Column Title	Function	Legal Values
Map_Descriptor_Name	Name of this Map Descriptor.	Up to 32 alphanumeric characters
Data_Array_Name	Name of Data Array where data is to be stored in the FieldServer.	One of the Data Array names from "Data Array" section above
Data_Array_Offset	Starting location in Data Array.	0 to maximum specified in "Data Array" section above
Function	Function of Client Map Descriptor.	Server

6.3.2 Driver Specific Map Descriptor Parameters

Column Title	Function	Legal Values
Node_Name	Name of Node to fetch data from.	One of the node names specified in "Client Node Descriptor" above
Data_Type	Data type of the related J-bus register.	AR, AI, DI, DO
Address	Starting address of read block.	0 - 65535
Length	Specifies how many register bits etc. to read.	0 – 125 for Analog values 0 – 2000 for Binary values
Data_Array_Low_Scale*	Scaling zero in Data Array.	-32767 to 32767, 0
Data_Array_High_Scale*	Scaling max in Data Array.	-32767 to 32767, 100
Node_Low_Scale*	Scaling zero in Connected Node.	-32767 to 32767, 0
Node_High_Scale*	Scaling max in Connected Node.	-32767 to 32767, 100

6.3.3 Map Descriptor Example1

```
// Server Side Map Descriptors

Map_Descriptors
Map_Descriptor_Name , Data_Array_Name , Data_Array_Offset , Function , Node_Name , Data_Type , Address , Length
SMD_AI_01           , DA_AI_01           , 0                , Server , MBP_Srv_11 , 30001 , 200 , 0
SMD_AO_01           , DA_AO_01           , 0                , Server , MBP_Srv_11 , 40001 , 200 , 0

, Data_Array_Low_Scale , Data_Array_High_Scale , Node_Low_Scale , Node_High_Scale
, 100                  , 0                      , 10000          ,
, 100                  , 0                      , 10000          ,
```

6.3.4 Map Descriptor Example 2

```
// Server Side Map Descriptors

Map_Descriptors
Map_Descriptor_Name , Data_Array_Name , Data_Array_Offset , Function
SMD_DI_01           , DA_DI_01         , 0                , Server
SMD_DO_01           , DA_DO_01         , 0                , Server

, Node_Name , Data Type , Address , Length
, MBP_Srv_11 , 1000 , 200
, MBP_Srv_11 , 00001 , 200
```