FieldServer
FS-8700-87 SDD16

Driver Manual

(Supplement to the FieldServer Instruction Manual)

APPLICABILITY & EFFECTIVITY

Effective for all systems manufactured after December 2015

Kernel Version: 1.03
Document Revision: 6

Contact Information:

Thank you for purchasing the FieldServer.

Please call us for Technical support of the FieldServer product.

Contact Information:

Sierra Monitor Corporation
1991 Tarob Court
Milpitas, CA 95035

Contact number:
+1 408 262-6611
+1 800 727-4377

Email: info@sierramonitor.com

Website: www.sierramonitor.com

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1 SDD16 DESCRIPTION

The SDD16 driver allows the FieldServer to transfer data to and from devices over RS-485 using SDD16 protocol. The FieldServer can only emulate a Client.

The SDD16 driver is used to communicate with a digital I/O module model 485SDD16. The current driver only supports reading the status of all sixteen digital input lines. The SDD16 driver in conjunction with the 485SDD16 module allows the FieldServer to sense external On/Off conditions and to control a variety of devices.

The SDD16 driver makes use of the data complement mode feature of the 485SDD16 module. In data complement mode the driver and module communicates with double the amount of data bytes to enable better error detection in noisy electrical environments.

2 DRIVER SCOPE OF SUPPLY

2.1 Supplied by Sierra Monitor Corporation for this driver

Sierra Monitor Corporation PART #	Description
FS-8700-87	Driver Manual

3 HARDWARE CONNECTIONS

The FieldServer is connected to the RS-485 SDD16 module as shown below. Configure the RS-485 SDD 16 module according the manufacturer's instructions. Note that the module auto-detects valid baud rates as defined in the client side connections.

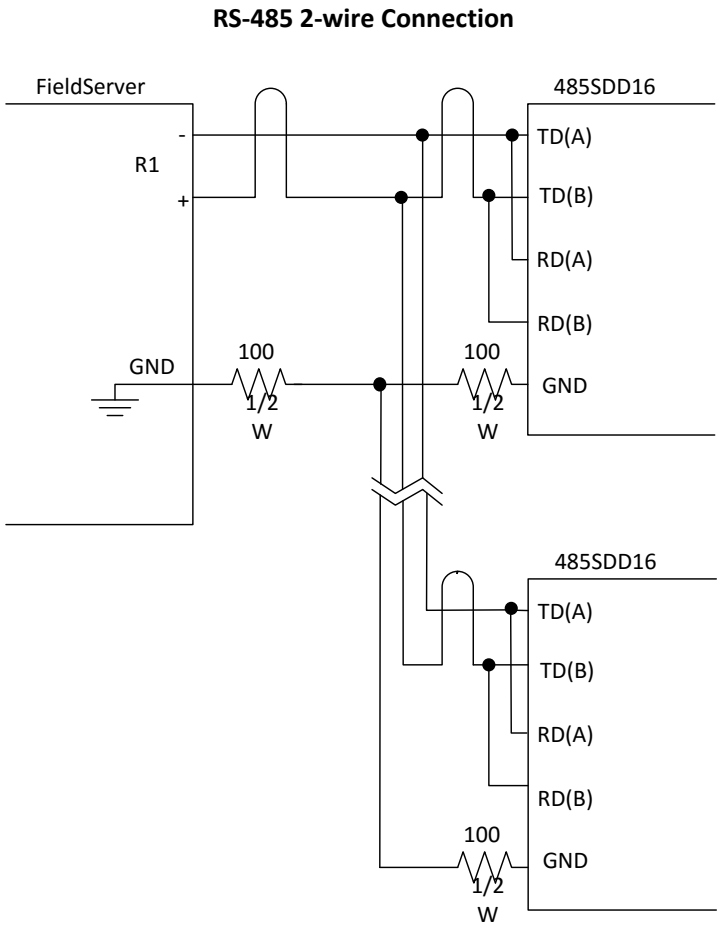

Figure 1 - Connection Diagram

4 CONFIGURING THE FIELDSERVER AS A SDD16 CLIENT

For a detailed discussion on FieldServer configuration, please refer to the configuration manual for the FieldServer. 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 SDD16 Server.

The configuration file tells the FieldServer about its interfaces, and the routing of data required. In order to enable the FieldServer for SDD16 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 that in the tables, * indicates an optional parameter, with the bold legal value being the default.

4.1 Data Arrays

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
Digitals_01       , Bit                 , 16
```

4.2 Client Side Connection Parameter

Section Title
Connections

Column Title	Function	Legal Values
Port	Specify which port the device is connected to the FieldServer	R1-R2
Baud	Specify baud rate	1200, 2400, 4800, 9600
Parity*	Specify parity	None
Data_Bits*	Specify data bits	8
Stop_Bits*	Specify stop bits	1
Protocol	Specify protocol used	SDD16
Line_Drive_On	Time to wait before driving line	0.001s
Line_Drive_Off	Time to wait before releasing line	0s
Poll _Delay*	Time between internal polls	0-32000 seconds,1 second

Example

```
//  Client Side Connections
Connections
Port  , Baud  , Parity  , Protocol  , Poll_Delay  , Line_Drive_On  , Line_Drive_Off
R1    , 9600  , None    , SDD16     , 0.100s      , 0.001s        , 0s
```

4.3 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	Module address	0-255 (48 is default address)
Protocol	Specify Protocol used	SDD16
Port	Specify through which port the device is connected to the FieldServer	R1-R2[1]

Example

```
//  Client Side Nodes

Nodes
Node_Name   , Node_ID   , Protocol   , Port
Module_1    , 48        , SDD16      , R1
```

1 Not all ports shown are necessarily supported by the hardware. Consult the appropriate Instruction manual for details of the ports available on specific hardware.

4.4 Client Side Map Descriptor Parameters

4.4.1 FieldServer Specific Map Descriptor Parameters

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 (Data_Array_Length-1) as specified in Data Array Section
Function	Function of Client Map Descriptor	Rdbc,

4.4.2 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”
Data_Type	Data type	Flag
Length	Length of Map Descriptor	1-16
Address	Starting digital line number	0-15

4.4.3 Timing Parameters

Column Title	Function	Legal Values
Scan_Interval	Rate at which data is polled	≥0.1s

4.5 Map Descriptor Example.

```
//    Client Side Map Descriptors

Map Descriptors
Map_Descriptor_Name   , Scan_Interval   , Data_Array_Name   , Data_Array_Offset   , Function   , Node_name   , Address   , Length
Digital_inputs        , 1s               , Digitals_0        , 0                   , rdbc       , Module_0    , 0         , 16
```