



FieldServer
FS-8700-10 SMC 2450
Driver Manual
(Supplement to the FieldServer Instruction Manual)

APPLICABILITY & EFFECTIVITY

Effective for all systems manufactured after November 2015

Driver Version: 1.01
Document Revision: 0

Contact Information:

Thank you for purchasing the FieldServer.

Please call us for Technical support of the FieldServer product.

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1 SMC2450 DESCRIPTION

The SMC2450 driver allows the FieldServer to transfer data to and from devices over RS-232 using Sierra Monitor Corporation SMC2450 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 HARDWARE/SOFTWARE

2.1 Supplied by Sierra Monitor Corporation for this driver

Sierra Monitor Corporation PART #	Description
FS-8915-10	UTP cable (7 foot), RJ45
FS-8917-02	Connector, 9-pin female, connects DTE no handshaking
FS-8917-01	Connector, 25 pin male, connects to DCE, RTSICTS loop

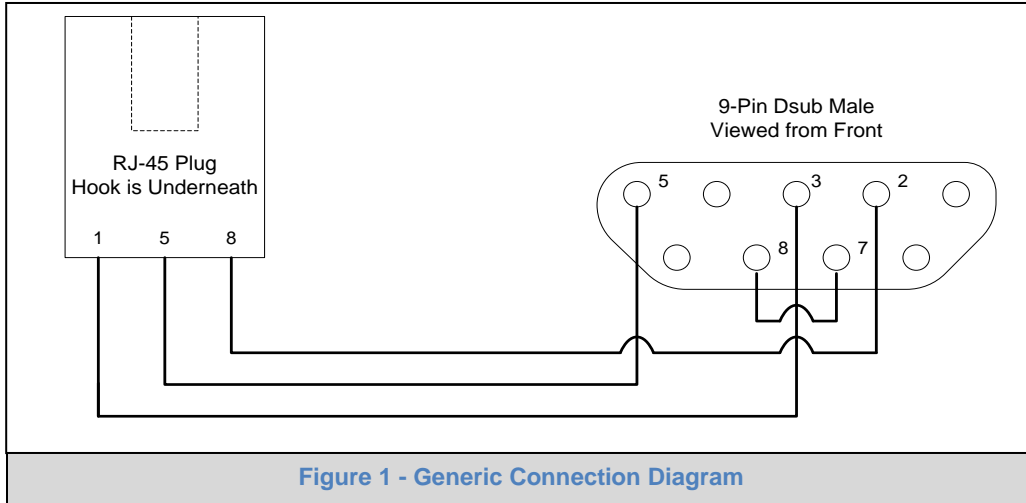
2.2 Provided by the Supplier of 3rd Party Equipment

2.2.1 Required 3rd Party Hardware

Part #	Description
Model 2450	Model 2450 Environment Controller

3 HARDWARE CONNECTIONS

It is possible to connect a SMC2450 device to a RS232 port or RS485 port (using a converter). These ports just need to be configured for SMC2450 in the configuration file.



4 CONFIGURING THE FIELD SERVER AS A SMC2450 CLIENT

Refer to section 1 of the Configuration Manual for a description of the operation principle of the FieldServer. The following tables describe parameters that need to be filled out in the configuration file. For convenience, a few example parameters already exist in the supplied Configuration files.

Note that * indicates an optional parameter, with the bold legal value being the default.

4.1 Data Arrays/Descriptors

Section Title		
Data_Arrays		
Column Title	Function	Legal Values
Data_Array_Name	Provide name for Data Array	Up to 15 alphanumeric characters
Data_Format	Provides data format	FLOAT, BIT, UInt16, SInt16, Packed_Bit, Byte, Packed_Byte, Swapped_Byte
Data_Array_Length	Number of Data Objects	1-10,000

Example

```
// Data Arrays

Data_Arrays
Data_Array_Name , Data_Format , Data_Array_Length
DA_40000 , UINT16 , 10
DA_41000 , UINT16 , 4
DA_42000 , UINT16 , 22
DA_42100 , UINT16 , 24
DA_42200 , UINT16 , 20
DA_42300 , UINT16 , 12
DA_43000 , UINT16 , 23
DA_44000 , UINT16 , 3
```

4.2 Client Side Connection Descriptors

Section Title		
Connections		
Column Title	Function	Legal Values
Port	Specify which port the device is connected to the FieldServer	FS-X20: P1 FS-X40: P1 – P8
Baud*	Specify baud rate	2400
Parity*	Specify parity	None
Data_Bits*	Specify data bits	8
Stop_Bits*	Specify stop bits	1
Protocol	Specify protocol used	SMC2450

Example

```
// Client Side Connections
Connections
Port , Baud , Parity , Data_Bits , Stop_Bits , Protocol , Poll_Delay
P8 , 2400 , None , 8 , 1 , SMC2450 , 0.100s
```

4.3 Client Side Node Descriptors

Section Title		
Nodes		
Column Title	Function	Legal Values
Node_Name	Provide name for node	Up to 32 alphanumeric characters
Node_ID	Station address of physical server node	1-129
Protocol	Specify protocol used	SMC2450
Port	Specify which port the device is connected to the FieldServer	FS-X20: P1 FS-X40: P1 – P8

Example

```
// Client Side Nodes

Nodes
Node_Name , Node_ID , Protocol , Port
MOD2450 , 1 , SMC2450 , P8
```

4.4 Client Side Map Descriptor

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	One of the Data Array names from
Data_Array_Offset	Starting location in Data Array	0 to maximum specified in "Data
Function	Function of Client Map Descriptor	RDBC
Node_Name	Name of Node to fetch data from	One of the node names specified in
Address	Starting address of read block	40001, 30001, etc
Length	Specifies how many register bits	0 - 125
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
Scan_Interval*	Seconds per Scan	0-32000, 1

4.5 Map Descriptor Example.

```
// Client Side Map Descriptors

Map_Descriptors
Map_block_Name, Data_Array_Name, Data_Array_Offset , Function, node_name, Address , Length , Scan_Interval
SMB_AO1      , DA_40000      , 0      , Rdbc , MOD2450 , 40001 , 10 , 2
SMB_AO2      , DA_41000      , 0      , Rdbc , MOD2450 , 41001 , 4 , 2
SMB_AO3      , DA_42000      , 0      , Rdbc , MOD2450 , 42001 , 22 , 20
SMB_AO4      , DA_42100      , 0      , Rdbc , MOD2450 , 42101 , 24 , 20
SMB_AO5      , DA_42200      , 0      , Rdbc , MOD2450 , 42201 , 20 , 20
SMB_AO6      , DA_42300      , 0      , Rdbc , MOD2450 , 42301 , 12 , 20
SMB_AO7      , DA_43000      , 0      , Rdbc , MOD2450 , 43001 , 23 , 20
SMB_AO8      , DA_44000      , 0      , Rdbc , MOD2450 , 44001 , 3 , 20
```

4.6 Server Side Connections

Section Title		
Connections		
Column Title	Function	Legal Values
Port	Specify which port the device is connected to the FieldServer	FS-X20: P1 FS-X40: P1 – P8
Baud*	Specify baud rate	2400
Parity*	Specify parity	None
Data_Bits*	Specify data bits	8
Stop_Bits*	Specify stop bits	1
Protocol	Specify protocol used	SMC2450

Example

```
// Server Side Connections

Connections
Port      , Baud      , Parity      , Data_Bits      , Stop_Bits      , Protocol
P1      , 2400      , None      , 8      , 1      , SMC245
```


4.7 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
Protocol	Specify protocol used	SMC2450

Example

```
// Server Side Nodes

Nodes
Node_name      , Node_ID      , Protocol
DEV1           , 1              , SMC2450
```

4.8 Server Side Map Descriptors

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
Node_Name	Name of Node to fetch data from	One of the node names specified in "Client Node Descriptor" above
Address	Starting address of read block	40001, 30001, etc
Length	Specifies register length available	0-125
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

4.8.1 Map Descriptor Example

```
// Server Side Map Descriptors
```

Map_Descriptors	Map_Descriptor_Name	, Data_Array_Name	, Data_Array_Offset	, Function	, Node_Name	, Address	, Length
	SMB_AO1	, DA_40000	, 0	, Server	, DEV1	, 40001	, 10
	SMB_AO2	, DA_41000	, 0	, Server	, DEV1	, 41001	, 4
	SMB_AO3	, DA_42000	, 0	, Server	, DEV1	, 42001	, 22
	SMB_AO4	, DA_42100	, 0	, Server	, DEV1	, 42101	, 24
	SMB_AO5	, DA_42200	, 0	, Server	, DEV1	, 42201	, 20
	SMB_AO6	, DA_42300	, 0	, Server	, DEV1	, 42301	, 12
	SMB_AO7	, DA_43000	, 0	, Server	, DEV1	, 43001	, 23
	SMB_AO8	, DA_44000	, 0	, Server	, DEV1	, 44001	, 3