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A Sierra Monitor Company

**Driver Manual**  
**(Supplement to the FieldServer Instruction**  
**Manual)**

**FS-8700-33 Modbus Omniflow**

**APPLICABILITY & EFFECTIVITY**

**Effective for all systems manufactured after May 1, 2001**

Instruction Manual Part Number FS-8700-033

Version: 1.0cA

12/19/2003

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## 1. Modbus Omni Flow Description

The Modbus Omni Flow driver allows the FieldServer to transfer data to and from an Omni Flow devices over RS-232. The FieldServer emulates a Client.

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

### 1.1 Hardware/Software

#### Supplied by FieldServer Technologies.

FieldServer Technologies PART #	DESCRIPTION
FS-8915-10	UTP cable (7 foot) for RS-232 use
FS-8917-02	RJ45 to DB25M connector adapter
SPA23029	3 wires cable for Omni Flow

#### Provided by user

PART #	DESCRIPTION
	Omni Flow Controller

## 2. FieldServer as a Omni Flow Client

### 2.1 Hardware Connections

Configure the Omni Flow Controller according to manufacturer's instructions. A summary is provided below:

- a. Check PEER/PEER: Disable
- b. Go to SET UP menu  
Press <PROG> <SETUP> <ENTER> respectively
- c. Go to MISC configuratio  
Press <ENTER>
- d. Go to PEER/PEER communication  
Press <DOWN ARROW> until you see PEER/PEER Comm then press <ENTER>.
  - Change Next Master to 0
  - Change Last ID to )  
(If asked for password then enter OMNI)
- e. Go to MISC menu  
Press key <PROG>
- f. Go to I/O menu  
Press <UP ARROW> <2> <ENTER> respectively
  - Set baud rate to 9600
  - Set Data bit to 8
  - Set parity to N
  - Set Modbus ID to 1
  - Set Modbus Type to 0
  - Set Modicon compatible to Y  
(If asked for password then enter OMNI)Press <PROG > repeatedly until go to Run Menu  
Any question call Omni Flow Technical Support (281) 240-6161

### 2.2 Configuration File Structure

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

**2.2.1 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_Format	Provides data format	INT16, INT32, BIT, FLOAT
Data_Array_Length	Number of Data Objects	1-10,000

**2.2.2 Client Side Connections**

Section Title		
Connections		
Column Title	Function	Legal Values
Port	Specify which port the device is connected to the FieldServer	P1-P8, R1-R2
Baud *	Specify baud rate	300- <b>9600</b> -38400
Parity *	Specify parity	Even, Odd, <b>None</b>
Data_Bits	Specify data bits	<b>7, 8</b>
Stop_Bits		
Handshaking	Specify hardware handshaking	RTS, RTS/CTS, <b>None</b>

**Example**

Ports			
Port,	Baud,	Parity,	poll_delay
P8,	9600,	None,	0.1

2.2.3 Client Side Nodes

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	Modbus_Omni

**Example**

```
// Client Side Nodes

Nodes
Node_Name, Node_ID, Protocol, Port
Omni1, 1, Modbus_Omniflow, p8
```

**2.2.4 Client 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	RDBC
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	Note 1
Data_Array_Low_Scale*	Scaling zero in Data Array	-32767 to 32767, <b>default 0</b>
Data_Array_High_Scale*	Scaling max in Data Array	-32767 to 32767, <b>default 100</b>
Node_Low_Scale*	Scaling zero in Connected Node	-32767 to 32767, <b>default 0</b>
Node_High_Scale*	Scaling max in Connected Node	-32767 to 32767, <b>default 100</b>

Note 1: See Omni Flow Computer Modbus Database: Overview Technical Bulletin, Omni Flow Computer User Guide (Rev20/24.71) Ch. 4 Modbus Protocol Implementation.

Valid Address ranges are:

Address	Type	Max Read length
1001-1999	Dig Inputs	2000
3001-3999 13001-13999	16 Bit Regs	125
4001- 4999	8 char ASCII	31
14001-14999	16 char ASCII	15
5001- 5999 15001- 15999	32 bit Regs	62
6001- 8999 13001 - 18999	Floats	62

**Example**

```
// Client Side Map Descriptors

Map_Descriptor_Name, Data_Array_Name, Data_Array_Location, Function, Node_Name, Address, Length, Scan_Interval

// Discretes
CMD_1_01,          DA_Omni_1_01,      0,                RDBC,           Omni1,          1101,           32,           0.5
CMD_1_02,          Omni_1_02,         0,                RDBC,           Omni1,          1155,           24,           0.5
CMD_1_03,          DA_Omni_1_03,     0,                RDBC,           Omni1,          1818,           4,            0.5

// 16 bits integers,
CMD_1_04,          DA_Omni_1_04,     0,                RDBC,           Omni1,          3101,           16,           0.5
CMD_1_05,          DA_Omni_1_05,     0,                RDBC,           Omni1,          3817,           26,           0.5

// 32 Bits Integers,
CMD_1_06,          DA_Omni_1_06,     0,                RDBC,           Omni1,          5101,           48,           0.5
CMD_1_07,          DA_Omni_1_07,     0,                RDBC,           Omni1,          5149,           48,           0.5

// 32 floatings points,
CMD_1_08,          DA_Omni_1_08,     0,                RDBC,           Omni1,          7101,           48,           0.5
CMD_1_09,          DA_Omni_1_09,     0,                RDBC,           Omni1,          7149,           25,           0.5
CMD_1_10,          DA_Omni_1_10,     0,                RDBC,           Omni1,          7601,           20,           0.5
CMD_1_11,          DA_Omni_1_11,     0,                RDBC,           Omni1,          8501,           18,           0.5
CMD_1_12,          DA_Omni_1_12,     0,                RDBC,           Omni1,          8531,           20,           0.5
CMD_1_13,          DA_Omni_1_13,     0,                RDBC,           Omni1,          17052,          16,           0.5
```

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