Driver Manual
(Supplement to the FieldServer Instruction Manual)

FS-8700-70 WS3000 TABS

APPLICABILITY & EFFECTIVITY

Effective for all systems manufactured after May 1, 2001

Driver Version:	**1.01**
Document Revision:	**6**

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1. WS3000 TABS Description

The Serial WS3000 TABS driver allows the FieldServer to transfer data to and from devices over either RS-232 or RS-422 using WS3000 TABS protocol. The FieldServer can emulate either a Server or Client.

The WS3000 TABS driver is set up for Alarm Surveillance and Control. The protocol works over a multidrop RS-422 line or over a RS-232 line and allows only one master and up to 32 slaves on a serial channel. Slaves are assigned station addresses that range from 0 to 31. The master does not have a station address. The protocol is strictly command/response with the master polling the slave devices. Each slave can be configured to hold the data for one to 256 displays. Each display contains 64 alarms status points represented by bits.

This driver only supports short addressing mode, thus allowing for a maximum of 256 displays per tabs device.

The Server driver fully supports the processing of the following AS&C Remote Control Commands:
Type 0, 1, 2, 128-255

The Client driver supports the sending of AS&C Remote Control Commands (writes).

2. Driver Scope of Supply

2.1. Supplied by FieldServer Technologies for this driver

FieldServer Technologies PART #	Description
25029	Cable Cat5 10-BASET w/Boot 7' Yelow
FS-8917-03	Conn, DB9M to DCE, RTS/CTS, DSR/DTR
FS-8700-70	Driver Manual.

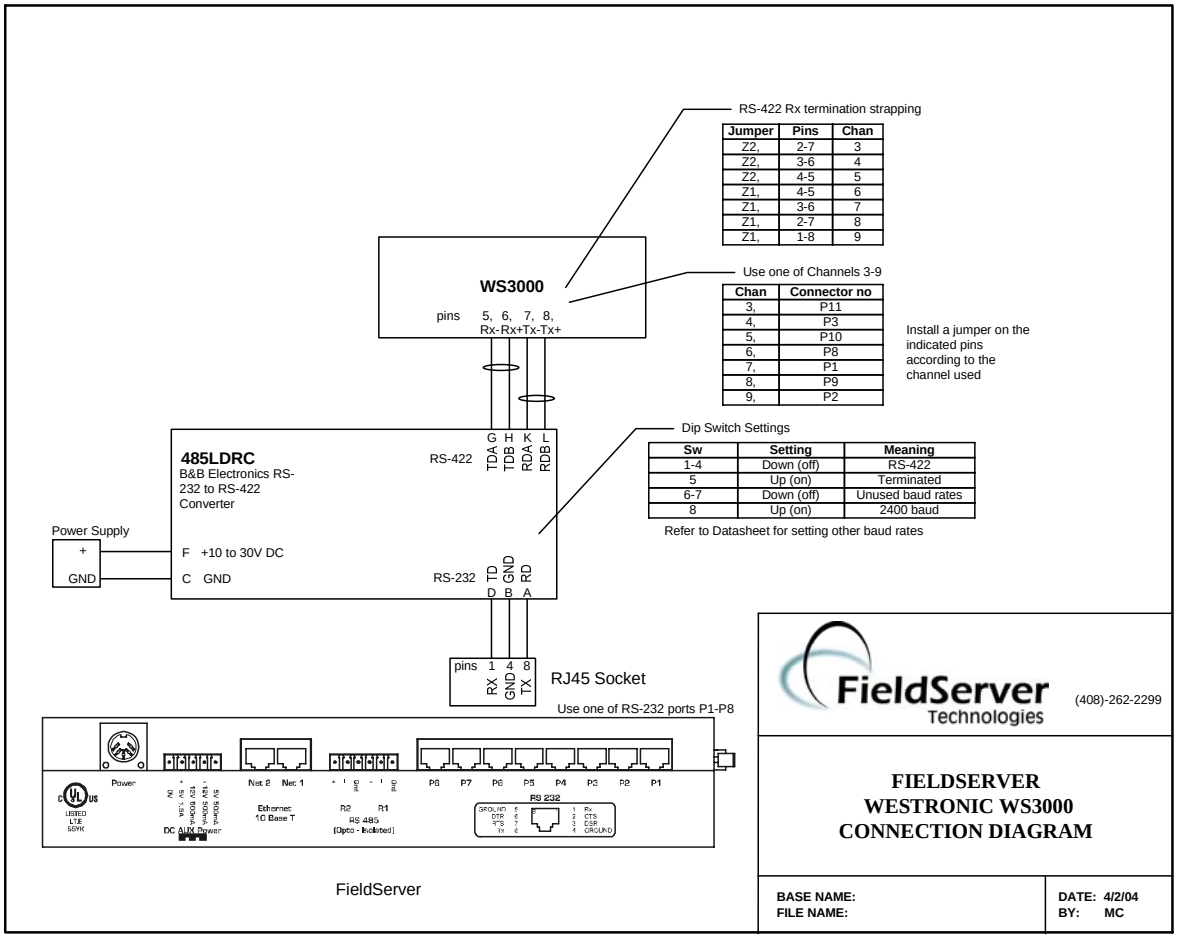
2.2. Provided by user

The user has to provide a RS-422 cable for connecting the WS3000 to the RS-232 to RS-422 converter.

3. Hardware Connections

The FieldServer is connected to the WS3000 as shown below.

Configure the WS3000 according to manufacturer's instructions.



4. Configuring the FieldServer as a WS3000 TABS Client

For a detailed discussion on FieldServer configuration, please 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" files provided with the FieldServer).

This section documents and describes the parameters necessary for configuring the FieldServer to communicate with a WS3000 TABS Server. The configuration file tells the FieldServer about its interfaces, and the routing of data required. In order to enable the FieldServer for WS3000 TABS 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/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	Provide data format. Each Data Array can only take on one format.	Byte
Data_Array_Length	Number of Data Objects. Must be larger than the data storage area required for the data being placed in this array.	1-10,000

Example

```
//  Data Arrays
//
Data_Arrays
Data_Array_Name,    Data_Format,    Data_Array_Length
Points_0,           byte,           2048
```

There are 8 bytes per display allowed. Eight bytes will represent the 64 points per display. A maximum of 256 displays per slave gives 2048 bytes per slave.

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	P1-P8[1]
Baud*	Specify baud rate	1200, **2400**, 4800, 9600
Parity*	Specify parity	Even, **Odd**, None
Data_Bits*	Specify data bits	7, **8**
Stop_Bits*	Specify stop bits	**1,** 2
Protocol	Specify protocol used	Ws3000_tabs
Handshaking*	Specify hardware handshaking	**None**

NOTE: Refer to the TABS collection port settings on the WS3000 for setting up the serial communication settings on the FieldServer. Also remember to change the baud rate setting on the RS-232 to RS-422 converter if necessary.

Example

```
//  Client Side Connections

Connections
Port,           Baud,       Parity,     Protocol,       Handshaking
P1,             2400,       Odd,        ws3000_tabs,    None
```

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	TABS device station address of physical Server node	0-31
Protocol	Specify protocol used	Ws3000_tabs
Port	Specify which port the device is connected to the FieldServer	P1-P8[1]

Example

```
//  Client Side Nodes

Nodes
Node_Name,      Node_ID,    Protocol,       Port
Tabs_0,         0,          ws3000_tabs,    P1
```

[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 Descriptors

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_Location	Starting location in Data Array	0 to maximum specified in “Data Array” section above
Function	Function of Client Map Descriptor	RDBC WRBX (Only for use to execute remote control commands. See Map Descriptor examples.)
Length	The length of the Map Descriptor	1

4.4.2. 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
Parms_DA	Specifies the name of the Data Array that will hold remote control command parameters	0 to 20 alphanumeric characters
Parms_DA_Offset	Specifies the offset into the parameters Data Array where the remote control parameters start	0 to maximum offset for length of the parameter Data Array

4.4.3. Timing Parameters

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

4.4.4. Map Descriptor Example 1

```
//    Client Side Map Descriptors

Map Descriptors
Map_Descriptor_Name,    Scan_Interval,    Data_Array_Name,    Data_Array_Offset,    Function,    node_name
Point_data_0,           1.0s,             Points_0,           0,                    rdbc,        Tabs_0
```

This can be any name but each name must be unique. Name will appear in FieldServer Map Descriptor status information screens.

The rate at which the TABS device will be polled.

The Data Array name must be one found under Data_Arrays. Data from the scan will be stored in the array at *Data_Array_Offset.*

This value specifies the offset into the Data Array where the data fetched will be stored.

Only a read function allowed i.e. Data to be read from the TABS device.

Node name must be one found under Nodes, Node_name The node_name identifies the station address of the TABS device (0-31).

4.4.5. Map Descriptor Example 2: Remote Control Commands

```
//  Client Side Map Descriptors

Map Descriptors
Map_Descriptor_Name,  Data_Array_Name,  Data_Array_Offset,  Function,  Node_name,  Parms_DA,  Parms_DA_Offset,  Length
Points_write,         Write_triggers,   0,                  wrbx,      Tabs_0,     Write_parms,  0,               1
```

Parameters arrangement in Parms_DA

Position from Parms_DA_Offset	Description
0	Display number 1
1	Point number 1 (0-63)
2	Control type 1 (0, 1, 2, 128-255)
3	Display number 2
4	Point number 2 (0-63)
5	Control type 2 (0, 1, 2, 128-255)
..	..
57	Display number 20
58	Point number 20 (0-63)
59	Control type 20 (0, 1, 2, 128-255)

Note: To trigger the remote control command, load the parameters into the Data Array as shown above and then write the number of points to control into the Data Array specified by Data_Array_Name at Data_Array_Offset. Valid number of points are 1 to 20.

5. Configuring the FieldServer as a WS3000 TABS Server

For a detailed discussion on FieldServer configuration, please 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" files provided with the FieldServer).

This section documents and describes the parameters necessary for configuring the FieldServer to communicate with a WS3000 TABS Client. The configuration file tells the FieldServer about its interfaces, and the routing of data required. In order to enable the FieldServer for WS3000 TABS 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 that in the tables, * indicates an optional parameter, with the bold legal value being the default.

5.1. Server Side Connection Descriptors

Section Title
Connections

Column Title	Function	Legal Values
Port	Specify which port the device is connected to the FieldServer	P1-P8[2]
Baud*	Specify baud rate	1200, **2400**, 4800, 9600
Parity*	Specify parity	Even, **Odd,** None
Data_Bits*	Specify data bits	7, **8**
Stop_Bits*	Specify stop bits	**1,** 2
Protocol	Specify protocol used	Ws3000_tabs
Handshaking*	Specify hardware handshaking	**None**
Turnaround_delay*	Time Server waits before responding to a poll	**0.01s,** or >= 0

NOTE: Refer to the TABS collection port settings on the WS3000 for setting up the serial communication settings on the FieldServer. Also remember to change the baud rate setting on the RS-232 to RS-422 converter if necessary.

Example

```
// Server Side Connections

Connections
Port,       Baud,    Parity,   Protocol,     Handshaking,   Turnaround_delay
P1,         2400,    Odd,      ws3000_tabs,  None,          0.01s
```

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

5.2. 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	TABS device station address of physical Server node	0-31
Protocol	Specify protocol used	Ws3000_tabs
Port	Port this node is connected to	P1-P8[3]

Example

```
//  Server Side Nodes

Nodes
Node_Name,      Node_ID,    Protocol,       Port
Tabs_0,         0,          ws3000_tabs,    P1
```

5.3. Server Side Map Descriptors

5.3.1. 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_Location	Starting location in Data Array	0 to maximum specified in “Data Array” section above
Function	Function of Server Map Descriptor	Passive

5.3.2. Driver Specific Map Descriptor Parameters

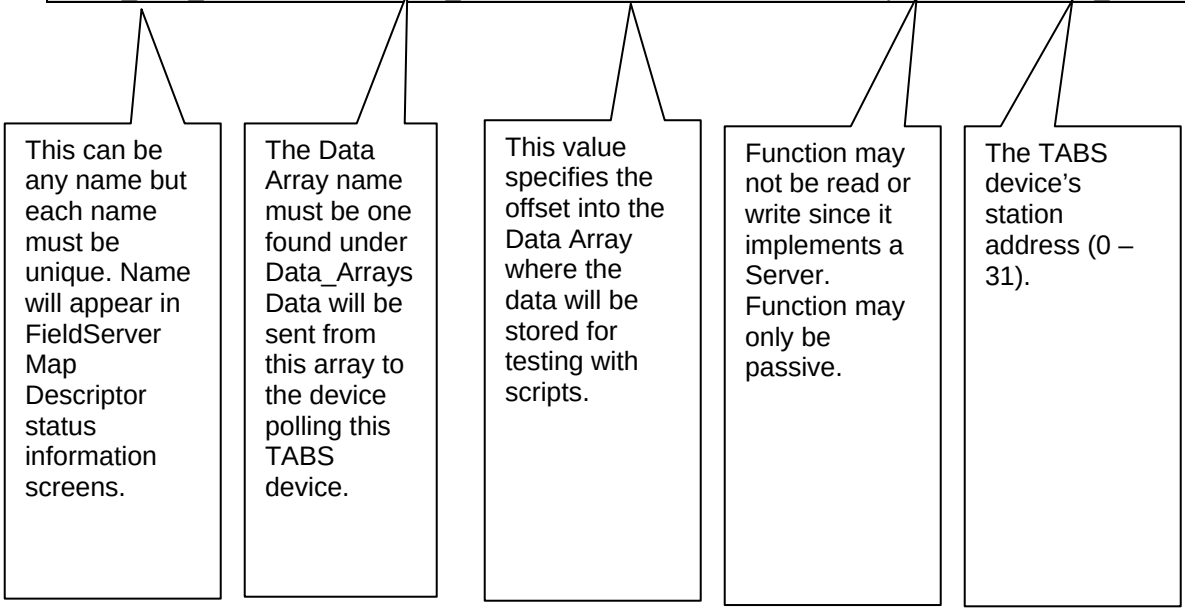
Column Title	Function	Legal Values
Node_Name	The TABS address of this node	One of the node names specified in “Server Node Descriptor” above

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

5.3.3. Map Descriptor Example.

```
//  Server side Map Descriptors

Map Descriptors
Map_Descriptor_Name,    Data_Array_Name,    Data_Array_Offset,    Function,    node_name
Point_data_0,           Points_0,           0,                    passive,     Tabs_0
```



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