



FieldServer Driver – Serial FS-8700-41 Simplex 4100 Computer Port Protocol

Driver Code: SIMP
Version: 1.00cA
Protocol Documentation: N/A
Protocol Version: 05/12/94
Physical Interface: EIA232 or EIA485

Setting	Default	Options
Baud Rate	9600	75, 110, 134.5, 300, 600, 1200, 1800, 2000, 2400, 4800, 9600, 19200
Parity	*EVEN	ODD, EVEN, MARK, SPACE, NONE
Data Bits	8	7 or 8
Stop Bits	1	1 or 2

* Odd or Even parity is recommended (by Simplex) to provide additional error detection at the character level.

Driver Description

The Simplex Time Recorder Company - 4100 Computer Port Protocol driver allows the FieldServer to transfer data to and from devices over either RS232 or RS485 using Simplex Time Recorder Company - 4100 Computer Port Protocol protocol. There are eight RS232 and two RS485 ports standard on the FieldServer. The FieldServer can emulate either a Server or Client.

The driver is capable of reading point status's, receiving unsolicited status updates as well as acknowledging alarms and setting some point status and analog values.

Hardware Handshaking

If the hardware supervision TERMINAL (HSHAKE) flag is set (), in the Simplex device, the 4100 RS-232 port requires CTS (Clear To Send) to be TRUE before transmitting each character. This does not conform with the FieldServer's default settings. Therefore, unset the HSHAKE setting. This handshaking is the basis for flow control at the hardware level as might be needed with modems; and, it provides a supervision trouble (if SUPV is set), if CTS does not come true within (T_CTS = 30) seconds.

Similarly, RTS (Ready To Send) is asserted by the 4100 whenever it is ready to send data. This can be used by the FieldServer for supervision and flow control as well.

A minimal cabling configuration can be accomplished by deselecting the HSHAKE terminal flag or by jumpering CTS to RTS on the 4100 side. There is no loss in functionality with this configuration as long as a POLL is selected.

Simplex Address Formatting

The *Simplex Time Recorder Company - 4100 Computer Port Protocol* only uses the standard 4100 address format of <Card>-<Point>-<Sub-point>. Symbolic addressing is not supported.



Protocol (Simplex Device) Specific Keywords

The following list of keywords control the behavior of the FieldServer with respect to connection with a simplex device.

Sim4100_func

The following list of permissible values determines the type of data being read/written.

Sim4100_Func Keyword	Description	Use
Ackall	<p>This command acknowledges all card-point-sub states based on the values found in the associated arrays.</p> <p>The FieldServer watches the data array to see if we need to send an ack.</p> <p>The 1st element of the data array is used to trigger the ack all</p> <p>2nd - ack A (primary abnormal state)</p> <p>3rd - ack F (Fire alarms)</p> <p>4th - ack P (Fire alarms)</p> <p>5th - ack S (Fire alarms)</p> <p>6th - ack T (Fire alarms)</p> <p>Set the array element to 1 to initiate the command. The FieldServer clears the value on completion</p> <p>.</p>	Write from the FieldServer to the Simplex Device.
Ack	<p>This command allows the user to acknowledge a number of points.</p> <p>The specified data array is inspected.</p> <p>Values of each element are used to determine which device state's are ack'd. Read the section 6.4 to understand this better.</p> <p>Offsets into the array are used to determine which card-point-sub addresses are ack'd. Read the section 6.5 to understand</p>	Write (wrbc) from the FieldServer to the Simplex Device.



Sim4100_Func Keyword	Description	Use
	<p>this better.</p> <p>The keyword length must be specified in the map descriptor when this sim4100_func value is used.</p>	
Clist	<p>This command returns the current point status for one point</p> <p>Read the section 6.4 to understand how the status is represented when it stored in the FieldServer's data array.</p>	Used to read (rdbc) data from the Simplex Device.
Clistall	<p>This command returns the current point status for every point in the simplex device.</p> <p>Read the section 6.4 to understand how the status is represented when it stored in the FieldServer's data array.</p> <p>Read section 6.5 to understand how the data is mapped into a data array .The mapping is dependent on which card-point-sub devices are reporting.</p>	Used to read (rdbc) data from the Simplex Device.
Setd	<p>This command allows the user to manipulate the status and/or priority of a control point</p> <p>This function is triggered from an array. The array is used to derive the ,card-point-sub address of the points to be written to.</p> <p>Offsets into the array are used to determine which card-point-sub addresses are ack'd. Read the section 6.5 to understand this better.</p>	Write (wrbc) from the FieldServer to the Simplex Device.
Seta	<p>This command allows the user to:</p> <p>Manipulate the status and/or priority of a control point</p>	Write (wrbc) from the FieldServer to the Simplex Device.



Sim4100_Func Keyword	Description	Use
	<p>Modify the value of an analog pseudo point. Set the sensitivity of a TrueAlarm sensor Set the rate-of-rise threshold of a TrueAlarm heat sensor Select the audio channel of a speaker circuit</p> <p>This function is triggered from an array. The array is used to derive the ,card-point-sub address of the points to be written to.</p> <p>Offsets into the array are used to determine which card-point-sub addresses are ack'd. Read the section 6.5 to understand this better.</p>	
Xpoint	<p>Point Status Change. This is an unsolicited message sent automatically by a Simplex Device to report some or other points status if there is a change of interest.</p> <p>When one of these messages is received then the card-point-sub are used to calculate an offset into the associated data array. Read section 6.4 to understand this better.</p> <p>The state being reported determines the value being written into the data array. Read section 6.5 to understand this better.</p>	This is used for a passive map descriptor because the FieldServer must be read to receive these message at any time.
Disable	Not Implemented	
Restart	Not Implemented	
Time	<p>This command sets and displays the time and date in "user" format.</p> <p>As a command it sets the hour minute second of the Simplex device by getting the values</p>	Query (rdbc) or set (wrbc) the Simplex device.



Sim4100_Func Keyword	Description	Use
	<p>from the data array associated with the map descriptor. The first element contains the hour, the second the minute and the third contains the second. A 24 hour clock is assumed.</p> <p>As a query the data is unpacked into the data array in the same format as described above.</p>	
Ctime	<p>As a command it sets the hour minute second of the Simplex device by getting the values from the data array associated with the map descriptor. The first element contains the hour, the second the minute, the third element contains the second, the 4th contains the day of the week, the 5th contains the month, the 6th contains the day of the month and the 7th element of the array contains the year (value 01 indicates 2001). A 24 hour clock is assumed.</p> <p>As a query the data is unpacked into the data array in the same format as described above.</p>	Query (rdbc) or set (wrbc) the Simplex device.
Super		This keyword is form FIELDSEVER TECHNOLOGIES engineer's only. It is used when testing the FieldServer.



Sim4100_Card Keyword

The FieldServer will accept values 0-255, however, not all the values are valid for simplex devices.

Many commands and output message contain system point ID fields. This refers to the way a 4100 point (local, external, real, pseudo), is referred to. There are two basic formats allowed, address format <apoint>, and symbolic format <spoint>.

Sim4100_Point Keyword

The FieldServer will accept values 0-255, however, not all the values are valid for simplex devices. Read the notes in section 6.3 and in section 6.4 for further information.

Sim4100_sub Keyword

The FieldServer will accept values 0-255, however, not all the values are valid for simplex devices. Read the notes in section 6.3 and in section 6.4 for further information.

Simplex Point Status Data Format

When a point's status is obtained the FieldServer will write one byte of data to a data array. The byte will contain the following information. Because each point can report a number 0-255 it only makes sense to use data arrays that are not bit arrays.

Bit	Identifier	Description
0 (First Bit)	F	Fire Alarm
1	P	Priority 2
2	S	Supervisory
3	T	Trouble
4	U	Utility
5	C	Control
6	D	Disable
7	A	Primary state (based on point type - F if smoke detector, C if signal circuit, etc.)