

1 DESCRIPTION

The serial GPA (General Purpose ASCII) Driver allows the FieldServer to accept data from remote devices which produce an ASCII byte stream. A typical example of such a device is an electronic scale producing an output similar to the one below.

```
.weight 0.57 Kg Tare 44.3 Kg 1 2 3 4 -5 -6.7
```

The driver waits passively for messages. When a message is received, the driver will extract the numbers from a string of characters and numbers. The numbers so formed are stored in consecutive elements of a Data Array. Referring to the example above, the driver will store the value .57 in the 1st element of the Data Array (DA), the value 44.3 in the next element, the value 1 in the next, the value 2 in the next etc.

The driver is also capable of sending custom poll message to a remote device. Some devices may require a character or stream of characters sent to it before it will output its data on a serial port.

The Driver can extract up to 100 values from an ASCII message and can process an ASCII string of up to 1000 characters.

The driver can process negative numbers.

1.1 Driver Limitations

- Only one data stream per connection - if two different streams of string data are sent to the same port, the data from the one will overwrite data from the other.
- The driver can only process numbers that are presented in a simple numeric form. Hexadecimal, Exponent-mantissa and other complex forms cannot be processed.
- The driver will overwrite the existing values with the new values. Values will be appended only if the new message has more values than the previous message, e.g. if a message with 5 values follows a message with 3 values, the first 3

values will be overwritten and the last two values will be appended.

FieldServer Mode	Nodes	Comments
Client	1	Only 1 node per port
Server		The driver cannot serve data

2 FORMAL DRIVER TYPE

Serial
Passive Client

3 COMPATIBILITY MATRIX

FieldServer Model	Compatible with this driver
FS-x30	Yes
SlotServer	No
ProtoNode	No
QuickServer FS-QS-1010	Yes
QuickServer FS-QS-1011	Yes
ProtoCessor FPC-FO2	No
ProtoCessor FPC-FD2	No

4 CONNECTION INFORMATION

Connection type: RS-232
 110; 300; 600; 1200; 2400;
 Baud Rates: 4800; **9600**; 19200; 28800;
 38400; 57600; 115200 Baud
 Data Bits: **7,8**
 Stop Bits: **1,2**
 Parity: **Odd, Even, None**
 Multidrop Capability: No

5 DEVICES TESTED

Device	Tested (FACTORY, SITE)
HyperTerminal	Factory

6 COMMUNICATIONS FUNCTIONS - SUPPORTED FUNCTIONS AT A GLANCE:

6.1 Data Types Supported

FieldServer Data Type	Description (or Device Data Type)
Analog Input	To store any number as an Integer
Digital Input	To store any number as a Bit
Register	To store any number as an Integer
Float Register	To store any number as a Float
Analog Output	To store any number as an Integer
Digital Output	To store any number as a Bit

6.2 Read Operations supported

None. This is a passive driver, which cannot poll.

6.3 Write (Control) Operations supported

This driver is capable of sending custom poll message to a remote device. Some devices may require a character or stream of characters sent to it before it will output its data on a serial port.

6.4 Unsupported Functions and Data Types

Function	Reason
Hexadecimal Numbers	Simplicity of Protocol
Exponent-mantissa Numbers	Simplicity of Protocol
Complex Number	Simplicity of Protocol