

### 1 DESCRIPTION

The Tek-Air Modbus RTU driver allows the FieldServer to transfer data to and from Tek-Air devices over either RS-232 or RS-485 using the Enhanced Tek-Air Modbus RTU protocol. The driver was developed for Modbus Application Protocol Specification V1.1a" from Modbus-IDA. The specification can be found at [www.modbus.org](http://www.modbus.org). Modbus\_Tekair is the same as Modbus\_RTU, except that it has the ability to concatenate bytes of data in a packet to create floating point values. The order in which the bytes are combined and the address range used was developed specifically for the Tek-Air/Modbus interface. To accommodate this, the driver must be configured to poll using odd numbered addresses as two integer registers are used for every floating point value. If this value is stored in a floating point data array, it will be retrievable in the correct format on the Server side. Note that the Tekair "Double" data type is not supported.

#### 1.1 Connection Facts

FieldServer Mode	Nodes	Comments
Client	1	Only 1 client node allowed on Multidrop systems
Server	254	Actual electrical loading may reduce number of usable server nodes

### 2 FORMAL DRIVER TYPE

Serial

Client or Server

### 3 COMPATIBILITY MATRIX

FieldServer Model	Compatible with this driver
FS-x30	Yes
SlotServer	Yes
ProtoNode	Yes
QuickServer FS-QS-10xx	Yes
QuickServer FS-QS-12xx	Yes
ProtoCessor FPC-ED2	Yes
ProtoCessor FPC-ED4	Yes

### 4 CONNECTION INFORMATION

Connection type: RS-232 or RS-485 (Two wire, Half-Duplex)  
 Baud Rates: 300; 600; 1200; 2400; 4800; **9600**; 19200; 28800; 38400 Baud  
 Data Bits: 7,8  
 Stop Bits: 1,2  
 Parity: Odd, Even, **None**  
 Multidrop Capability: Yes

### 5 DEVICES TESTED

Device	Tested (FACTORY, SITE)
SmartLab Controller	Site

### 6 COMMUNICATIONS FUNCTIONS - SUPPORTED FUNCTIONS AT A GLANCE:

#### 6.1 Data Types Supported

FieldServer Data Type	Description (or Device Data Type)
Analog Input	Analog Input Registers
Digital Input	Discrete Input Registers
Analog Register	Input and Output Registers
Digital Register	Input and Output Registers
Analog Output	Analog Output Registers
Digital Output	Discrete Output Registers

### 6.2 Read and Write Operations supported

FieldServer as a Client	FieldServer as a Server
Read Analog Status:	Provide Analog Status:
Read Output Registers (4xxx)	Provide Output Registers (4xxx)
Read Input Registers (3xxx)	Provide Input Registers (3xxx)
Read Binary Status:	Provide Binary Status:
Read Discrete Output Status (0xxx)	Provide Discrete Output Status (0xxx)
Read Discrete Input Status (1xxx)	Provide Discrete Input Status (1xxx)
Write Analog Setpoints:	Accept Analog Setpoints:
Preset Single Register (4xxx)	Accept Preset Single Register (4xxx)
Preset Multiple Registers (4xxx)	Accept Preset Multiple Registers (4xxx)
Write Binary Commands:	Accept Binary Commands:
Force Single Coil (0xxx)	Accept Force Single Coil (0xxx)
Force Multiple Coils (0xxx)	Accept Force Multiple Coils (0xxx)

### 6.3 Unsupported Functions and Data

Function	Reason
Programming messages	FieldServer is a data transfer device, and as such, programming messages are not required

### 6.4 Unsupported Devices or Protocol Options

Device	Details
TBD	TBD