1 DESCRIPTION

The Modbus RTU and Modbus ASCII drivers allow the FieldServer to transfer data to and from devices using Modbus RTU or Modbus ASCII protocol respectively. Data can be transferred over either RS-232 or RS-485. The driver was developed for Modbus Application Protocol Specification V1.1a" from Modbus-IDA. The specification can be found at www.modbus.org.

The FieldServer can emulate either a Server or Client.

There are various register mapping models being followed by various vendors

To cover all these models FieldServer uses the following three Models

- **Modicon_5digit** – Use this format where addresses are defined in 0xxxx, 1xxxx, 3xxxx or 4xxxx format. A maximum of 9999 registers can be mapped of each type. This is FieldServer driver's default format.
- **ADU** –Application Data Unit address. Use this format where addresses of each type are defined in the range 1-65536
- **PDU** –Protocol Data unit address. Use this format where addresses of each type are defined in the range 0-65535.

The key difference between ADU and PDU is for example if Address_Type is ADU and address is 1, the driver will poll for register 0. If Address_Type is PDU, the driver will poll for address 1.

Note 1: If vendor document shows addresses in extended Modicon (i.e. 6 digit) format like 4xxxxx then consider these addresses as xxxxx (just omit the first digit) and use either ADU or PDU

Note 2: The purpose of providing 3 different ways of addressing the Modbus registers is to allow the user to choose the addressing system most compatible with the address list being used. At the protocol level, the same protocol specification is used for all three with the exception of the limited address range for Modicon_5digit.

FieldServer Mode	Nodes	Comments
Client	1	Only 1 client node allowed on Multidrop systems
Server	255	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-x2010	Yes
FS-x2011	Yes
FSx25	Yes
FS-x30	Yes
FS-x40	Yes
SlotServer	Yes
ProtoNode	Yes
QuickServer FS-QS-1010	Yes
QuickServer FS-QS-1011	Yes
ProtoCessor FPC-FO2	Yes
ProtoCessor FPC-FD2	Yes

4 CONNECTION INFORMATION

Connection type:	RS-232 or RS-485 (Two wire, Half-Duplex)
Baud Rate:	110 – 115200, standard baud rates only
Data Bits:	7, **8**
Parity:	Even, Odd, **None**
Multidrop Capability:	Yes

5 DEVICES TESTED

Device	Tested (FACTORY, SITE)
Modbus RTU Devices	Factory
Modbus ASCII Devices	Factory
Liebert Sitelink	Customer
Square D Activar 58	Customer
Triatek	Customer
WonderWare InTouch	Factory
Fix Intellution	Factory
GE Cimplicity	Customer
Modscan	Factory
GE PLEPM	Factory
ABB Extrel	Customer
Andover Controls	Customer
Eurotherm Chessel	Customer
Sierra Monitor Sentry	Factory
Magnatek	Customer
Many more……	

6 COMMUNICATIONS FUNCTIONS - SUPPORTED FUNCTIONS AT A GLANCE:

6.1 Function Codes Supported:

Function Codes	Description
01	Read Discrete Output Status (0xxxx)
02	Read Discrete Input Status (1xxxx)
03	Read Output Registers (4xxxx)
04	Read Input Registers (3xxxx)
05	Force Single Coil (0xxxx)
06	Preset Single Register (4xxxx)
15	Force Multiple Coils (0xxxx)
16	Preset Multiple Registers (4xxxx)