

1 DESCRIPTION

The M-Bus driver allows the FieldServer to transfer data to and from devices using M-Bus protocol. The Fieldbus connection is included with the FieldServer. The FieldServer can emulate either a Server or Client.

The M-Bus QuickServer Gateway is configurable to act as both a Master and a Slave M-Bus device. As an M-Bus Master the number of devices supported is limited to 64 devices since the FieldServer provides power to the M-Bus. The M-Bus master interrogates the slave devices as the gateway acts as a Client. It will request information from the slave devices and receive and process only the expected responses. As an M-Bus Slave the maximum number of devices is limited to the M-Bus standard of 250. The gateway will act as a Server and will respond only to requests from M-Bus master devices.

FieldServer Mode	Nodes	Comments
Client (Master)	64	Maximum number powered by the M-Bus Master
Server (Slave)	250	Maximum number supported in the M-BUS protocol

2 FORMAL DRIVER TYPE

Fieldbus driver, connect with M-Bus twisted pair network.

3 COMPATIBILITY MATRIX

FieldServer Model	Compatible with this driver
FS-x2010	No
FS-x2011	No
FS-x25	No
FS-x30	No
FS-x40	No
SlotServer	No
ProtoNode	No
QuickServer FS-QS-10xx	No
QuickServer FS-QS-12xx	Yes
ProtoCessor FPC-ED2	No
ProtoCessor FPC-ED4	No

4 CONNECTION INFORMATION

Connection type:	M-BUS Twister pair
Baud Rates:	300-38400 baud (Auto Baud Discovery set Slaves to any supported baud rate)
Data Bits:	8 (default for M-Bus)
Stop Bits:	1 (default for M-Bus)
Parity:	Even (default for M-Bus)
Hardware interface:	Phoenix connector
Multidrop Capability:	Yes

5 DEVICES TESTED

Device	Tested (FACTORY, SITE)
EMU 3/85 3-Phase Energy Meter	FACTORY
ADFweb HD67031-20-B2 Analyzer/Scanner	FACTORY
Elvaco CMa20 M-Bus Temperature & Humidity Sensor	FACTORY
Zennner DE-08-MI004-PTB012 Energy Meter	FACTORY
NZR DHZ-63A-M-Bus Single-phase Energy Meter	FACTORY

6 COMMUNICATIONS FUNCTIONS - SUPPORTED FUNCTIONS AT A GLANCE:

Most M-Bus Devices are not polarity sensitive, although the polarity of the M-Bus connection is indicated on the device diagram, should it be a requirement. The M-Bus devices communicating to the FieldServer must be configured according to the manufacturer's instructions (e.g. Primary address and readout data).

6.1 Auto Baud Discovery

The FieldServer configured as an M-Bus Master device has the ability to change each slave to a desired standard M-Bus baud rate automatically. The FieldServer configured as an M-Bus Slave device has the ability to change its own baud to a desired standard M-Bus baud rate if requested by the Master.

Most M-Bus devices are set to start up at 2400 Baud, although some older devices have 300 Baud as their

default Baud rate. The auto Baud discovery feature cycles through all the baud rates, and sets the device's baud rate to the desired baud rate (see the Driver Manual for more information), as soon as it finds each device's default baud rate, individually.

6.2 Data Types Supported

M-bus data is divided into two classes, Class-1 alarm protocol (higher priority) and Class-2 general data protocol. Class-1 Alarm data is available according to the slave vendor specific format, and is stored accordingly.

Class-2 Data Type	Description
Duration types	Time duration in seconds, minutes, hours and days
Energy types	Energy consumption, usually for billing purposes (Watt hour or Joules)
Voltage	Voltage reading of a meter
Current	Current reading of a meter
Temperature types	Temperature reading (°C or °F)
Time types	Time in seconds, minutes, hours and days
Custom types	Custom value, where the data type is specified in the VIF
Power types	Power reading in (Watts or Joules/sec)
Pressure	Pressure reading in bar.
Mass	Mass scaled value (kg)
Mass flow	Mass flow scaled value (kg/h)
Volume flow types	Volume flow value in liter per minute
Alarm flags	Volume flow value in liter per second

6.3 Read Operations supported

FieldServer as a Client	FieldServer as a Server
Read M-Bus type data	Provide M-Bus type data

6.4 Write (Control) Operations supported

FieldServer as a Client	FieldServer as a Server
None	None

6.5 Unsupported Functions and Data Types

Function	Reason
Readout of EEPROM	Function not used to transfer general data