

meters uk Ltd

An Accredited Low Carbon Company
Utility Meter Manufacturers

Electric – Gas – Heat –Water Meters



Utility Metering With Modbus - Data Sheet

Modbus is a serial communications protocol published by Modicon in 1979 for use with its programmable logic controllers (PLCs). It has become a de facto standard communications protocol in industry, and is now the most commonly available means of connecting industrial electronic devices and used extensively in building management systems

Floating Point IEEE

32 Bit Integer

8 Bit Data

Mixed Data Types

Bit Fields in Integers]

Multipliers to change data to/from integer 10,100,1000,256

Protocol extentions

16 bit slave addresses

32 bit data size (1 address = 32 bits of data returned)

Word swapped data

Two variants , with different representations of numerical data and slightly different protocol details. Modbus RTU is a compact, binary representation of the data. Modbus ASCII is human readable, and more verbose.. The RTU format follows the commands/data with a cyclic redundancy check checksum.

The ASCII format uses a longitudinal redundancy check checksum. Nodes configured for the RTU variant will not communicate with nodes set for ASCII, and the reverse.

Modbus/TCP is very similar to Modbus RTU, but transmits the protocol packets within TCP/IP data packets.

Heat Meter Order Code
HCM4008

(Typical Set Up)

Type Of Modus – RTU – 2 wire plus ground – RS485

No meters on bus 250

Maximum Length of cable run 4kilometres

Electrical Supply Via bus

Power Consumption 3.0mA

Communication Speed 9600 baud

Data Format 1 start bit 8 data bits 1 stop bit



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Even Parity (Please request none parity if required)

Read Registers – Use Function Code 4 (Read Input Registers)
Register 1 & 2 = 32 bit Total Energy kWh

Register 3 & 4 = 32 bit Instantaneous Power kW
Register 5 = 16 bit Flow Temperature C
Register 6 = 16 bit Return Temperature C
Register 7 & 8 = 32 bit Flow Rate m3/h

Power Consumption – 1.5 mA

Markings Approvals Standard EN 1434 – 3
CE Complies to requirements when fitted to meters uk Ltd
manufactured products
Signal Quality ISO7480 section 3.6

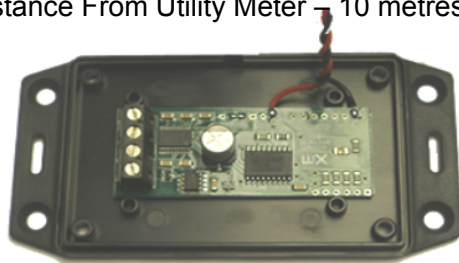
Modbus Module – EF1

Converts any utility meter (Electricity – Gas – Oil – Steam – Water)
into Modbus

(The utility meter must have a pulsed output)
Directly connects into the Modbus system

EF1 Size 100mm wide -110 mm long - 38mm deep
Direct power supply required between 7 – 12 vdc
Type Of Modus – RTU – 2 wire plus ground – RS485
Power Consumption 3.0mA
Communication Speed 9600 baud
Connections
A – 4 wire connection from Modbus
B – Two wire connection – pulse lead to utility meter

Maximum Distance From Utility Meter – 10 metres



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