

HD32MT.1

Modbus SLAVE
RTU-TCP/IP

QUICK START
ENGLISH



PHOTOVOLTAIC POWER

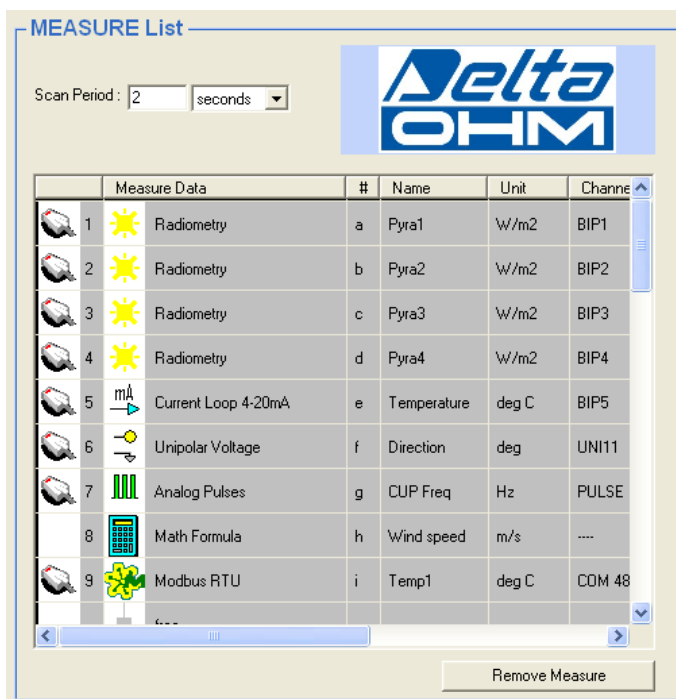
If the power supply of datalogger falls below 11.0V (i.e. the battery near 12.0V), the datalogger goes in LOW POWER Mode and suspends all measures and stops the supply to the sensors, until the power supply goes to 11.8V.

The data logger can communicate through the PC COM port in "Modbus Slave" mode with **Modbus-RTU** or **Modbus-TCP IP** protocol. See the **chapter 10** of the HD32MT.1 Manual.

The Modbus SLAVE is a very special mode that makes it similar to a "remote-host" sensor, which can be interrogated by a Modbus Master through the ModBus RTU or TCPIP protocol.

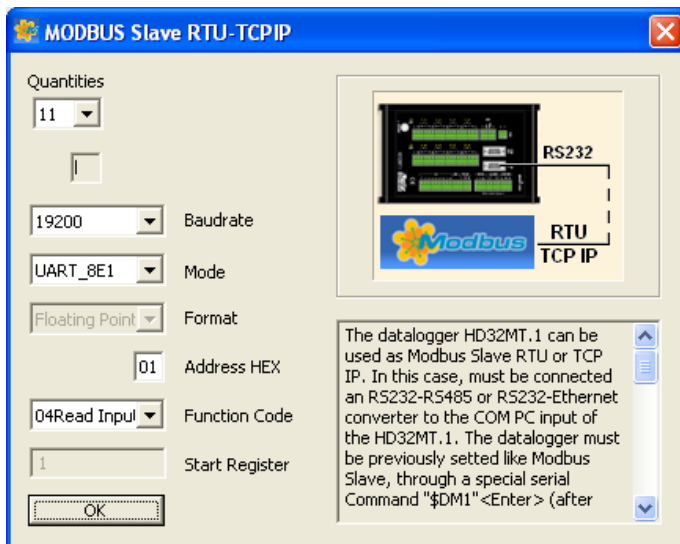
To inherit the Modus SLAVE, the data logger had received a special command like \$DM1 and also a special Measure Program was sent to it. When in Modbus SLAVE mode, the data logger does not communicate with the HD32MTLogger software, for this please refer to next chapter Modbus SLAVE Communicating.

On the software HD32MTLogger, all the quantities on the MEASURE List of the HD32MT.1, in the same order, are treated as Modbus Registers:



HD32MT.1 Modbus Slave RTU - RS485		
Address	Quantity	Format
1	Pyra1 [W/m2]	Floating Point 32bit
3	Pyra2 [W/m2]	Floating Point 32bit
5	Pyra3 [W/m2]	Floating Point 32bit
7	Pyra4 [W/m2]	Floating Point 32bit
9	Temperature [°C]	Floating Point 32bit
11	Direction [degrees]	Floating Point 32bit
13	CUP frequency [Hz]	Floating Point 32bit
15	Wind Speed [m/s]	Floating Point 32bit
17	Temperature Panel1 [°C]	Floating Point 32bit
19	Temperature Panel2 [°C]	Floating Point 32bit
21	Temperature Panel3 [°C]	Floating Point 32bit

Every quantity is a floating point representation, so every register is like a 2x16 bit. In the above example there are 11 quantities on the MEASURE List, so the numbers of registers are 1,3,5,...,21 whereas on the Modbus Command the number are 0-indexed 0,2,4,...,20.



In the MODBUS Slave RTU-TCPIP window, for the item "Format" (Format of Data) only the "Floating Point 4B" setting is permitted: this means that, to the Master who asks him, the logger provides its records only in Floating Point format (not Integer)

Under "Function Code" set only "04Read Input" (the 03Read Hold Reg mode is not active).

Under the "Address HEX" (01,02,...,0A,...,0F) set the Modbus Address that you desire the data logger should have on the Modbus network.

The SERIAL protocol is Modbus RTU (not Modbus ASCII), and on the "Baudrate" and "Mode" set the serial parameters required from the Modbus network.

Note: with the data logger on the Modbus SLAVE mode, please do not compile any STORE Tables. Because the data logger works like a sensor, it's able to give out the instantaneous measuring value of every sensor connected, when a Modbus Master asks him, and not makes or gives out the memorization of measures.

MODBUS SLAVE COMMUNICATING

When in "Modbus Slave" mode, the data logger does not communicate with the HD32MTLogger software. To temporarily disable the "Modbus Slave" mode, and communicate by the HD32MTLogger:

1. Disconnect the black connector of the COM PC port of the data logger and connect this port to your PC, by a "null modem" Cable like the **DeltaOhm C.205**:

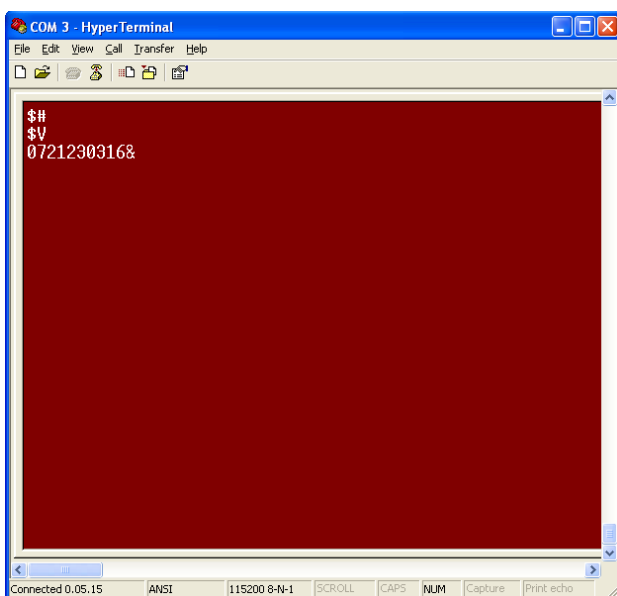


Start a serial communication program, as Hyperterminal for instance. Set the Baud Rate to 115200 and set the communication parameters 8N1.

2. Turn the data logger off and on. When started up, the data logger remains waiting for a serial command for 10 seconds, send the command:

\$# <enter>

to the instrument before 10 seconds have elapsed.



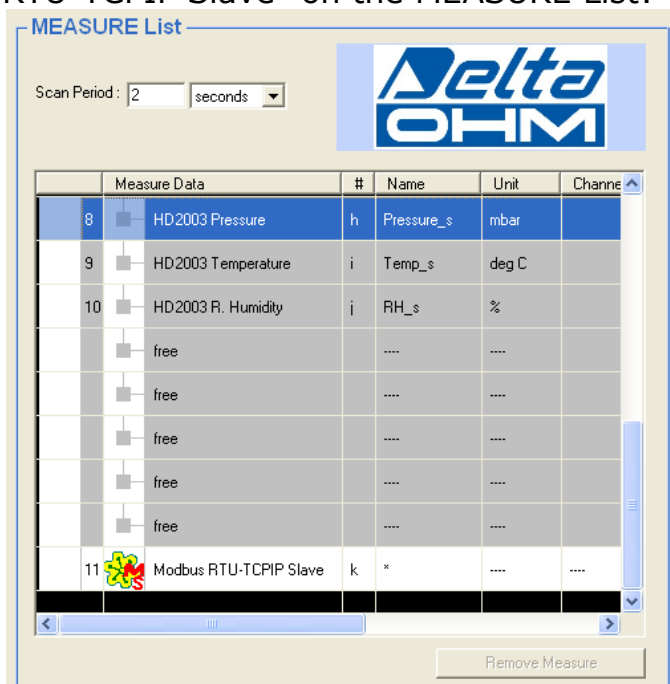
Note: To verify the correct operation of the \$# command, please send a command like \$V<enter> and the data logger must give answer with the FW version. If the data logger doesn't receive the over mentioned command \$# within 10 seconds from start up, the "Modbus Slave" mode is automatically activated.

3. Close the serial communication program and connect the HD32MTLogger software.

4. When you are finished using the HD32MTLogger software, turn the data logger off and on. Reconnect the black connector to the COM PC port of the data logger. The "Modbus Slave" mode will become active after 10 seconds from restart.

MODBUS SLAVE TROUBLESHOOTING

If a Measure Program was sent to the data logger with the option "Modbus RTU-TCPIP Slave" on the MEASURE List:



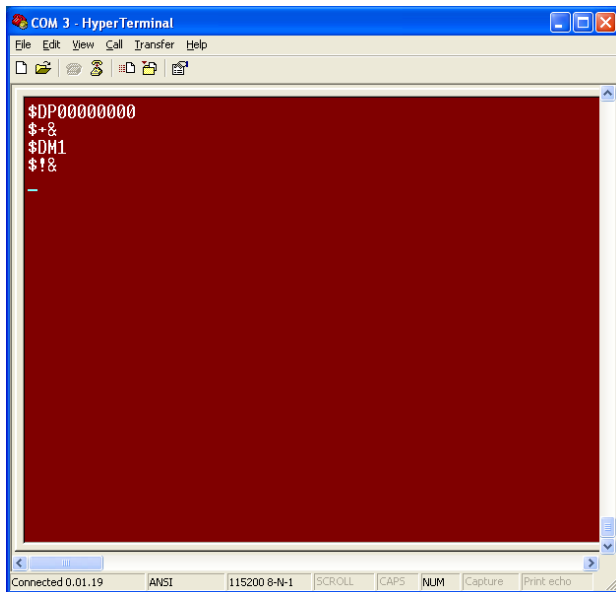
without to put the HD32MT.1 on the Modbus SLAVE mode with the special command \$DM1, puts the data logger in error (red LED flashing). To exit from it, please follow this:

1. Start a serial communication program, as Hyperterminal for instance. Set the Baud Rate to 115200 and set the communication parameters 8N1.

2. Turn the data logger off and on. Send the PSW command:
\$DP00000000 <enter>

After the answer, send the special command to put the data logger on the Modbus SLAVE mode [*]:

\$DM1 <enter>



3. Close the serial communication program. The "Modbus Slave" mode is already active.

[*]

Note: if you don't desire the Modbus SLAVE mode, don't send the \$DM1 command. After the PSW command, close the serial communication program and connect the HD32MTLogger software. Although the data logger is on error also with the HD32MTLogger, after the preceding PSW command, you are able to send it a new Measure Program without the option "Modbus RTU-TCP/IP Slave" on the MEASURE List.