Industrial communication solutions for Windows

XUMG503 Driver Manual

Janitza Electronic UMG-503 Modbus RTU Protocol Driver

Contents

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XUMG503 technical specifications

General information

XUMG503 driver allows you to connect to UMG-503 Universal Measuring Device manufactured by Janitza Electronic Gmbh.
This driver is a modified version of the XMODBUSB driver and uses the Modbus RTU protocol to request data from the meter in IEEE754 floating point format and IEEE754 double format.
This driver integrates several Modbus RTU requests into one single request that returns a set of values that are relevant for a monitoring application.
This driver expects that you connect to your device through its serial port. The device should behave as a slave in your RS-232/485 network. This driver supports serial-over-ethernet so you can alternatively use some kind of transparent ethernet/serial converter to reach your device using your LAN.
Make sure that the controller station address, baudrate, parity, databits and stop bits are correctly configured in the driver and matches those used by the meter. 19200,N,8,1 is the recommended setting.
If you cannot communicate or if you are using RS-485 to connect to the device, you should set the RTS signal during the communication. This can be done by setting the RTSEnable argument when calling any of the read and write methods. If you still cannot communicate, check that your RS-485 cables are not inverted.

Command list

Read Measurements

Description of this command:
Obtains a set of relevant instant measurements, using the Modbus RTU protocol in IEEE754 floating point format and IEEE754 double format. This command combines several request telegrams to different Modbus addresses to obtain the data.
Following scale factors are applied to values returned by the driver:
- Currents are divided by 1000 (to be received in Amperes).
- Voltages are not scaled (are received in Volts).
- Real Powers (Active Powers) are divided by 1000 (to be received in Watts).
- Cos Phi are not scaled
- Frequencies are not scaled (are received in Hz)
- Real work consumption is not scaled (received in Wh)

Methods used to run this command:
Analog Input
Number of points accepted by this command:
1-16
Meaning of the DriverP0 parameter:
Station number (1-255).
Meaning of the DriverP1 parameter:
0
Values that are returned:
Value in PointValue (0) = Phase-A Current (A)
Value in PointValue (1) = Phase-B Current (A)
Value in PointValue (2) = Phase-C Current (A)
Value in PointValue (3) = Phase-A Voltage (V)
Value in PointValue (4) = Phase-B Voltage (V)
Value in PointValue (5) = Phase-C Voltage (V)
Value in PointValue (6) = Phase-A Real Power (W)
Value in PointValue (7) = Phase-B Real Power (W)
Value in PointValue (8) = Phase-C Real Power (W)
Value in PointValue (9) = Phase-A Cos Phi
Value in PointValue (10) = Phase-B Cos Phi

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Value in PointValue (11) = Phase-C Cos Phi
Value in PointValue (12) = Phase-A Frequency (Hz)
Value in PointValue (13) = Phase-B Frequency (Hz)
Value in PointValue (14) = Phase-C Frequency (Hz)
Value in PointValue (15) = Real Work Consumption (Wh)

Error messages

The following list shows the possible error messages that can be returned by the driver during a failed communication in the 'Status' property.

[1005] DRIVER (Internal): Invalid driver stage
[1300] PROTOCOL (Timeout): No answer
[1421] PROTOCOL (Format): Negative acknowledge received from device
[2001] CONFIG (DataType): Analog outputs are not supported by this driver
[2002] CONFIG (DataType): Digital inputs are not supported by this driver
[2003] CONFIG (DataType): Digital outputs are not supported by this driver
[2189] CONFIG (NumValues): Too many values (max=16)
[3014] CONFIG (P0): Invalid device address (0-255)
[8013] CONFIG (Remote): Acknowledge
[8034] CONFIG (Remote): Busy (rejected message)
[8138] CONFIG (Remote): Failure in associated device
[8168] CONFIG (Remote): Illegal data address
[8170] CONFIG (Remote): Illegal data value
[8172] CONFIG (Remote): Illegal function
[8347] CONFIG (Remote): Unknown error

Supported devices

This driver can communicate with these devices, but is not necessarily limited to this list:

JANITZA ELECTRONIC UMG-503 UNIVERSAL MEASURING DEVICE

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