

Industrial communication solutions for Windows

XGAVWM14 Driver Manual

Carlo Gavazzi WM14 and CPT Basic Serial Protocol Driver

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XGAVWM14 technical specifications

General information

XGAVWM14 driver allows you to connect to Carlo Gavazzi Controls meters of the WM14-DIN BASIC, WM14-96 BASIC and CPT-DIN BASIC series using the serial communication protocol Ver. 3 Rev. 0.

WM14 and CPT are provided with a RS485 serial interface. The underlying communication protocol is an adaption of the Modbus RTU/JBUS protocol.

The data format is fixed:

- 1 start bit
- 8 data bit
- 1 stop bit
- 9600 baud
- Parity: none

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.

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.

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 the read and write methods. If you still cannot communicate, check that your RS-485 cables are not inverted.

Command list

Read Instantaneous Variables

Description of this command:

Reads all the instantaneous variables, applying the transformer ratios indicated in DriverP6 and DriverP7 properties.

Methods used to run this command:

Analog Input

Number of points accepted by this command:

1-39

Meaning of the DriverP0 parameter:

Meter number (1-255).

Meaning of the DriverP1 parameter:

0

Meaning of the DriverP5 parameter:

Dat Mode

- 0=Use Dat-A (LSB-MSB)

- 1=Use Dat-B (MSB-LSB)

Meaning of the DriverP6 parameter:

Voltage transformer ratio (Vt_ratio)

Meaning of the DriverP7 parameter:

Current transformer ratio (Ct_ratio)

Values that are returned:

Value in PointValue (0) = V L1-N (VN)

Value in PointValue (1) = A L1 (A)

Value in PointValue (2) = W L1 (P)

Value in PointValue (3) = V L2-N (V)

Value in PointValue (4) = A L2 (A)

Value in PointValue (5) = W L2 (P)

Value in PointValue (6) = V L3-N (V)

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Value in PointValue (7) = A L3 (A)
Value in PointValue (8) = W L3 (P)
Value in PointValue (9) = V L1-L2 (VC)
Value in PointValue (10) = V L2-L3 (VC)
Value in PointValue (11) = V L3-L1 (VC)
Value in PointValue (12) = VL-L SUM (VC)
Value in PointValue (13) = A max (A)
Value in PointValue (14) = A n (A)
Value in PointValue (15) = W SUM (P SUM)
Value in PointValue (16) = VA L1 (P)
Value in PointValue (17) = VA L2 (P)
Value in PointValue (18) = VA L3 (P)
Value in PointValue (19) = VA SUM (P SUM)
Value in PointValue (20) = var L1 (P)
Value in PointValue (21) = var L2 (P)
Value in PointValue (22) = var L3 (P)
Value in PointValue (23) = var SUM (P SUM)
Value in PointValue (24) = W dmd (P SUM)
Value in PointValue (25) = VA dmd (P SUM)
Value in PointValue (26) = W dmd MAX (P SUM)
Value in PointValue (27) = Hz (H)
Value in PointValue (28) = Admdmax (A)
Value in PointValue (29) = PF L1 (PF)
Value in PointValue (30) = PF L2 (PF)
Value in PointValue (31) = PF L3 (PF)
Value in PointValue (32) = PF SUM (PF)
Value in PointValue (33) = A L1 dmd (A)
Value in PointValue (34) = A L2 dmd (A)
Value in PointValue (35) = A L3 dmd (A)
Value in PointValue (36) = kWh (E)
Value in PointValue (37) = varh (E)
Value in PointValue (38) = Hourmeter (HM)

Read EEPROM Configuration Parameters

Description of this command:

Reads all the configuration parameters from the EEPROM memory.

Methods used to run this command:

Analog Input

Number of points accepted by this command:

1-13

Meaning of the DriverP0 parameter:

Meter number (1-255).

Meaning of the DriverP1 parameter:

1

Values that are returned:

Value in PointValue (0) = Password Programming access password
Value in PointValue (1) = Vt_ratio Voltage transformer ratio
Value in PointValue (2) = Ct_ratio Current transformer ratio
Value in PointValue (3) = P_int Integration period (Wdmd) in minutes
Value in PointValue (4) = Filter_rng Filter range 111 (% f.s.)
Value in PointValue (5) = Filter_coe Filter coefficient
Value in PointValue (6) = Address Instrument address
Value in PointValue (7) = Set_vup Upper voltage threshold with a voltage transformer ratio of 1.0 (V)
Value in PointValue (8) = Set_vdown Lower voltage threshold with a voltage transformer ratio of 1.0 (V)
Value in PointValue (9) = Set_an Neutral current threshold with a current transformer ratio of 1.0 (A)
Value in PointValue (10) = System System type (0=3P, 1=3P.n, 2=2P, 3=1P, 4=3P.A)
Value in PointValue (11) = A_int Integration period (Admd) in minutes
Value in PointValue (12) = dat Byte order in the words (0=Dat-A, 1=Dat-B)

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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
[2299] CONFIG (NumValues): Too many values requested (max=39)
[2300] CONFIG (NumValues): Too many values requested (max=13)
[3014] CONFIG (P0): Invalid device address (0-255)
[3510] CONFIG (P1): Invalid command (0 or 1 only)
[5521] CONFIG (P5): Invalid Dat mode (0 or 1)
[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:

CARLO GAVAZZI CONTROLS WM14-DIN BASIC POWER ANALYSER
CARLO GAVAZZI CONTROLS WM14-96 BASIC POWER ANALYSER
CARLO GAVAZZI CONTROLS CPT-DIN BASIC POWER ANALYSER

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