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XPOW6200 Driver Manual

Power Measurement 6200 ION Protocol Driver

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XPOW6200 technical specifications

General information

XPOW6200 driver allows you to connect with POWER MEASUREMENT 6200 ION Power Meter Series. The link is established using the 6200 ION/Modicon Modbus Serial Communications Protocol using the ION/Modbus Register Map.

This driver includes one global command that can be used to read the most relevant variables from the PML 6200 ION. If you need to read other parameters or write any information to the device, consider using the XMODBUS driver (modbus binary protocol) which is also supported by this Power Measurement family.

Typical communication settings:

9600, N, 8, 1 or 9600, N, 8, 2

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.

Power meter required scale factors settings:

PVS = 1 PIS/PCS = 1 PI4S/PC4S = 1 PPS = 1

Command list

Read Real-Time Measured Data

Description of this command:

This command retrieves the most relevant measured values from the 6200 ION real-time memory. All scale factors must be set to 1.

Methods used to run this command:

Analog Input

Number of points accepted by this command:

1-49

Meaning of the DriverP0 parameter:

Unit Address (1-32)

Meaning of the DriverP1 parameter:

1

Meaning of the DriverP2 parameter:

Not used

Meaning of the DriverP3 parameter:

Not used

Meaning of the DriverP4 parameter:

Not used

Values that are returned:

Value in PointValue (0) = $\sqrt{I_n a}$, in V

Value in PointValue (1) = $\sqrt{I_n b}$, in V

Value in PointValue (2) = $\sqrt{I_n c}$, in V

Value in PointValue (3) = $\sqrt{I_n avg}$, in V

Value in PointValue (4) = $\sqrt{I_{II} ab}$, in V

Value in PointValue (5) = $\sqrt{I_{II} bc}$, in V

Value in PointValue (6) = $\sqrt{I_{II} ca}$, in V

Value in PointValue (7) = $\sqrt{I_{II} avg}$, in V

Value in PointValue (8) = $I a$, in A

Value in PointValue (9) = $I b$, in A

Value in PointValue (10) = $I c$, in A

Value in PointValue (11) = $I avg$, in A

Value in PointValue (12) = $I demand$, in A

Value in PointValue (13) = $I peak demand$, in A

Value in PointValue (14) = I_4 , in A

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Value in PointValue (15) = Frequency, in Hertz x 100
Value in PointValue (16) = PF sign total, 0 to 1.0
Value in PointValue (17) = PF sign a, 0.0 to 1.0
Value in PointValue (18) = PF sign b, 0.0 to 1.0
Value in PointValue (19) = PF sign c, 0.0 to 1.0
Value in PointValue (20) = kW total, in kW
Value in PointValue (21) = kVAR total, in kW
Value in PointValue (22) = kVA total, in kW
Value in PointValue (23) = kW a, in kW
Value in PointValue (24) = kW b, in kW
Value in PointValue (25) = kW c, in kW
Value in PointValue (26) = kVAR a, in kW
Value in PointValue (27) = kVAR b, in kW
Value in PointValue (28) = kVAR c, in kW
Value in PointValue (29) = kVA a, in kW
Value in PointValue (30) = kVA b, in kW
Value in PointValue (31) = kVA c, in kW
Value in PointValue (32) = kW demand, in kW
Value in PointValue (33) = kW peak demand, in kW
Value in PointValue (34) = kVAR demand, in kW
Value in PointValue (35) = kVA demand, in kW
Value in PointValue (36) = kVAR peak demand, in kW
Value in PointValue (37) = kVA peak demand, in kW
Value in PointValue (38) = kWh del, in kW
Value in PointValue (39) = kWh rec, in kW
Value in PointValue (40) = kVARh del, in kW
Value in PointValue (41) = kVARh rec, in kW
Value in PointValue (42) = kVAh del+rec, in kW
Value in PointValue (43) = V1 THD
Value in PointValue (44) = V2 THD
Value in PointValue (45) = V3 THD
Value in PointValue (46) = I1 THD
Value in PointValue (47) = I2 THD
Value in PointValue (48) = I3 THD

Read Real-Time Measured Data (XPOW3300 emulation)

Description of this command:

This command emulates some of the values returned by the Read Real-Time Measured Data command used by the PML 3300 Power Measurement meter. All scale factors must be set to 1.

Methods used to run this command:

Analog Input

Number of points accepted by this command:

1-184

Meaning of the DriverP0 parameter:

Unit Address (1-32).

Meaning of the DriverP1 parameter:

0

Meaning of the DriverP2 parameter:

0

Meaning of the DriverP3 parameter:

0

Meaning of the DriverP4 parameter:

0

Values that are returned:

- PointValue(10) = Van (VIn a from the 6200 meter), in V
- PointValue(11) = Vbn (VIn b from the 6200 meter), in V
- PointValue(12) = Vcn (VIn c from the 6200 meter), in V
- PointValue(14) = Vab (VII ab from the 6200 meter), in V
- PointValue(15) = Vbc (VII bc from the 6200 meter), in V
- PointValue(16) = Vca (VII ca from the 6200 meter), in V
- PointValue(20) = Ia (I a from the 6200 meter), in A
- PointValue(21) = Ib (I b from the 6200 meter), in A

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- PointValue(22) = I_c (I_c from the 6200 meter), in A
- PointValue(33) = KW TOTAL (Kw TOTAL from the 6200 meter), in kW
- PointValue(41) = Power Factor Total (PF sign total from the 6200 meter), x 100
- PointValue(47) = Freq on V1 (Frequency from the 6200 meter), in Hertz x 100
- PointValue(54) = KWH Total (kWh imp+exp) (kWh del from the 6200 meter), in kW
- PointValue(64) = kVAH (kVAh del+rec from the 6200 meter), in kW
- PointValue(181) = Sliding Window KW Demand Total (kW demand from the 6200 meter), in kW

Important note:

Those values that are not available are returned as 0.

Read KW Demand Total (XPOW3300 emulation)

Description of this command:

This command reads the KW Demand Total using the same parameters required by the XPOW3300 driver. PPS scale factor must be set to 1.

Methods used to run this command:

Analog Input

Number of points accepted by this command:

1

Meaning of the DriverP0 parameter:

Unit Address (1-32).

Meaning of the DriverP1 parameter:

0

Meaning of the DriverP2 parameter:

0

Meaning of the DriverP3 parameter:

2

Meaning of the DriverP4 parameter:

181

Values that are returned:

- PointValue(0) = KW Demand Total (kW Demand from the 6200 meter), in kW

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
- [2175] CONFIG (NumValues): Too many values (max=1)
- [2203] CONFIG (NumValues): Too many values (max=250)
- [2222] CONFIG (NumValues): Too many values (max=49)
- [3025] CONFIG (P0): Invalid device address (1-32)
- [3510] CONFIG (P1): Invalid command (0 or 1 only)
- [4552] CONFIG (P3): Invalid page
- [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:

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