

XELVIPEN Driver Manual

EIControl VIP Energy 485/ALM Protocol Driver



CPKSoft Engineering Process Monitoring and Industrial Automation Software

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1. Introduction

CPKSoft Engineering assumes no responsibility for any errors that may appear in this document. If you have any suggestions for improvements or amendments or have found errors in this publication, please notify us.

This driver is included with all unlimited licenses of TAS-HMITalk. It is not sold separately. It requires the TAS-HMITalk ActiveX to work, therefore it cannot be used as a stand-alone driver.

If you use this driver in your applications, you need to include the xelvipen.tlk in the set of files that you distribute. This file must be located in the same folder where the hmitalk.ocx file is registered in order to be found by the activex when the applications are executed.

The source-code for the xelvipen.tlk driver is available in plain-C language for additional USD 299 if you own a license of TAS-HMITalk 8.04 or higher.

Refer to the following link to visit the xelvipen driver page at CPKSoft Engineering website: <http://www.cpksoft.com/tabid/55/ProductID/34/PageIndex/1/Default.aspx>.

Visit this link if you want to see a complete list of drivers that are currently available for TAS-HMITak: <http://www.cpksoft.com/Drivers/tabid/55/Default.aspx>.

Also, refer to this link if you are interested in purchasing a license of the most recent version of TAS-HMITalk: <http://www.cpksoft.com/Products/tabid/54/Default.aspx>.

We welcome your comments about this document. You can reach us by e-mail at [contact @ cpksoft.com](mailto:contact@cpksoft.com).

2. Driver details

2.1. Driver overview

XELVIPEN driver allows you to connect with ELCONTROL VIP ENERGY devices.

The allowed serial setups are:

9600 / 1200 Bauds, 7 Db, Parity None / Odd / Even, Stop bits 1 / 2.

The most common serial setup is:

9600 Bauds, 7 Db, Parity None, 1 stop bit.

It is strongly recommended that you use The PC-485 Box RS-232/485 converter supplied by ELCONTROL. The device could behave erratically if you use a different RS-232/485 converter.

2.2. Supported devices

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

ELCONTROL VIP ENERGY 485

ELCONTROL VIP ENERGY RPQS-485

ELCONTROL VIP ENERGY ALM-485

ELCONTROL VIP ENERGY ALMRPQS-485

3. Command list

3.1. Read All Data Measured

Description of this command:

Obtains all data measured.

Type of data handled by this command:

Analog Input

Number of points accepted by this command:

1-49

Meaning of the DriverP0 parameter:

Station Number (1-247).

Meaning of the DriverP1 parameter:

0

Values that are returned:*Configuration:*

Value in PointValue (0) = Instrument Type: 13, Vip Energy

Value in PointValue (1) = Instrument Options (1=On/0=Off) Bit 0 = Serial line option Bit 1 = RPQS option Bit 2 = Alarms option (ALM)

Value in PointValue (2) = Instrument Options: software version

Value in PointValue (3) = Setup (Refer to User Manual)

Value in PointValue (4) = Setup (Refer to User Manual)

Measured Values:

Value in PointValue (5) = Three-Phase Voltage (V)

Value in PointValue (6) = Three-Phase Current (A)

Value in PointValue (7) = Three-Phase Active Power (W)

Value in PointValue (8) = Three-Phase Power Factor

Value in PointValue (9) = Phase L1 Voltage (V)

Value in PointValue (10) = Phase L2 Voltage (V)

Value in PointValue (11) = Phase L3 Voltage (V)

Value in PointValue (12) = Phase L1 Current (A)

Value in PointValue (13) = Phase L2 Current (A)

Value in PointValue (14) = Phase L3 Current (A)

Value in PointValue (15) = Phase L1 Active Power (W)

Value in PointValue (16) = Phase L2 Active Power (W)

Value in PointValue (17) = Phase L3 Active Power (W)

Value in PointValue (18) = Phase L1 Power Factor

Value in PointValue (19) = Phase L2 Power Factor

Value in PointValue (20) = Phase L3 Power Factor

Value in PointValue (21) = Phase L1 Reactive Power (VAr)

- Value in PointValue (22) = Phase L2 Reactive Power (VAr)
- Value in PointValue (23) = Phase L3 Reactive Power (VAr)
- Value in PointValue (24) = Phase L1 Apparent Power (VA)
- Value in PointValue (25) = Phase L2 Apparent Power (VA)
- Value in PointValue (26) = Phase L3 Apparent Power (VA)
- Value in PointValue (27) = Phase L1 Current Crest Factor
- Value in PointValue (28) = Phase L2 Current Crest Factor
- Value in PointValue (29) = Phase L3 Current Crest Factor
- Value in PointValue (30) = Three-Phase Apparent Power (VA)
- Value in PointValue (31) = Three-Phase Reactive Power (VAr)
- Value in PointValue (32) = Frequency (Hz)
- Value in PointValue (33) = Positive Three-Phase kWatthours (single phase if single phase is set) (kWh)
- Value in PointValue (34) = Positive Three-Phase kVArhours (single phase if single phase is set) (kVArh)
- Value in PointValue (35) = Three-Phase Average Reactive Power (single phase if single phase is set) (VAr)
- Value in PointValue (36) = Three-Phase Average Apparent Power (single phase if single phase is set) (VA)
- Value in PointValue (37) = Three-Phase Average Active Power (single phase if single phase is set) (W)
- Value in PointValue (38) = Three-Phase Apparent Power Peaks (single phase if single phase is set) (VA)
- Value in PointValue (39) = Three-Phase Active Power Peaks (single phase if single phase is set) (W)
- Value in PointValue (40) = Negative Three-Phase kWatthours (single phase if single phase is set) (kWh)
- Value in PointValue (41) = Negative Three-Phase kVArhours (single phase if single phase is set) (kVArh)
- Value in PointValue (42) = Phase L3 kWatthours (kWh)
- Relay Control Data:*
- Value in PointValue (43) = 0/1: Relay 1 Off/On
- Value in PointValue (44) = 0/1: Relay 2 Off/On
- Value in PointValue (45) = 0/1: Pulse/Relay Output (RPQS/ALM)
- Value in PointValue (46) = 0/1: Alarm Output Inactive/Active
- Value in PointValue (47) = 0/1: Relay 1/2 Selected (ALM active)
- Value in PointValue (48) = 0/1: Local/Remote Control

3.2. Read Date & Time Information

Description of this command:

Returns the date & time information.

Type of data handled by this command:

Analog Input

Number of points accepted by this command:

1-5

Meaning of the DriverP0 parameter:

Station Number (1-247).

Meaning of the DriverP1 parameter:

1

Values that are returned:

Value in PointValue (0) = Minutes

Value in PointValue (1) = Hours

Value in PointValue (2) = Day

Value in PointValue (3) = Month

Value in PointValue (4) = Year

3.3. Write Keyboard Status

Description of this command:

Enable/Disable keyboard.

Type of data handled by this command:

Digital Output

Number of points accepted by this command:

1

Meaning of the DriverP0 parameter:

Station Number (1-247).

Meaning of the DriverP1 parameter:

2

Values that are sent:

Value in PointValue (0) = 0/1: Disable/Enable Keyboard

3.4. Select Local/Remote Mode

Description of this command:

Selects the Local/Remote operation mode for the Relay outputs.

Type of data handled by this command:

Digital Output

Number of points accepted by this command:

1

Meaning of the DriverP0 parameter:

Station Number (1-247).

Meaning of the DriverP1 parameter:

3

Values that are sent:

Value in PointValue (0) = 0/1: Local/Remote Mode

3.5. Peaks and Averages Reset

Description of this command:

Resets the peaks and averages registers.

Type of data handled by this command:

Digital Output

Number of points accepted by this command:

1

Meaning of the DriverP0 parameter:

Station Number (1-247).

Meaning of the DriverP1 parameter:

4

No Values Required: Just sending this command executes the Reset.

3.6. Write Command for Operation of Relays 1 and 2

Description of this command:

Commands the operation of Relays 1 and 2. Before using this command it is ESSENTIAL to switch the VIP Energy to Relay-Output Remote mode, otherwise the command is ignored.

Type of data handled by this command:

Digital Output

Number of points accepted by this command:

1

Meaning of the DriverP0 parameter:

Station Number (1-247).

Meaning of the DriverP1 parameter:

5

Values that are sent:

Value in PointValue (0) = 0/1: Relay 1 Off/On

Value in PointValue (1) = 0/1: Relay 2 Off/On

3.7. Select Star/Delta Connection

Description of this command:

Writes the selection flag for the Star/Delta switching.

Type of data handled by this command:

Digital Output

Number of points accepted by this command:

1

Meaning of the DriverP0 parameter:

Station Number (1-247).

Meaning of the DriverP1 parameter:

6

Values that are sent:

Value in PointValue (0) = 0/1: Star/Delta Connection

3.8. Select Cogeneration/No Cogeneration

Description of this command:

Writes the selection flag for the Cogeneration/No Cogeneration switching.

Type of data handled by this command:

Digital Output

Number of points accepted by this command:

1

Meaning of the DriverP0 parameter:

Station Number (1-247).

Meaning of the DriverP1 parameter:

7

Values that are sent:

Value in PointValue (0) = 0/1: No Cogeneration/Cogeneration

3.9. Write Integration Period for Average Values

Description of this command:

Writes the integration time period for average values.

Type of data handled by this command:

Analog Output

Number of points accepted by this command:

1

Meaning of the DriverP0 parameter:

Station Number (1-247).

Meaning of the DriverP1 parameter:

8

Values that are sent:

Value in PointValue (0) =

0 (10 Minutes)

1 (15 Minutes)

2 (20 Minutes)

3 (30 Minutes)

4 (60 Minutes)

5 (1 Minute)

6 (2 Minutes)

7 (5 Minutes)

4. Appendices

4.1. Error messages

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

This list does not include some error messages that can be returned by the activex component while attempting to establish a connection.

- [1005] DRIVER (Internal): Invalid driver stage
- [1300] PROTOCOL (Timeout): No answer
- [1408] PROTOCOL (Format): Invalid amount of data bytes received
- [1410] PROTOCOL (Format): Invalid device id in response
- [1433] PROTOCOL (Format): Validation error in device response
- [2002] CONFIG (DataType): Digital inputs are not supported by this driver
- [2147] CONFIG (NumValues): Only one value can be read or written
- [2222] CONFIG (NumValues): Too many values (max=49)
- [2223] CONFIG (NumValues): Too many values (max=5)
- [3007] CONFIG (P0): Invalid device address
- [3508] CONFIG (P1): Invalid command
- [8013] CONFIG (Remote): Acknowledge
- [8036] 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
- [8217] CONFIG (Remote): NAK-negative acknowledgment
- [8347] CONFIG (Remote): Unknown error

4.2. Keywords list

The following list shows a set of words directly related to this driver.

"485, ALM, ALM485, ALMRPQS485, ELCONTROL, ENERGY, RPQS485, VIP".