

XHITACHE Driver Manual

Hitachi PLCs EB/EC/EM-II Series 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 xhitache.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 xhitache.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 xhitache driver page at CPKSoft Engineering website: <http://www.cpksoft.com/tabid/55/ProductID/46/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

XHITACHE driver allows you to connect to the HITACHI programmable controllers of EB, EC and EM-II series.

2.2. Supported devices

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

HITACHI PLC EB-Series

HITACHI PLC EC-Series

HITACHI PLC EM-II-Series

3. Command list

3.1. Commands

3.1.1. Read Status

Description of this command:

Reads the CPU Status.

Type of data handled by this command:

Analog Input

Number of points accepted by this command:

1

Meaning of the DriverP0 parameter:

Identifies the station number (0-255).

Meaning of the DriverP1 parameter:

11

Values that are returned:

Value in PointValue (0) = 0 - Stop, 1 - Error, 2 - Run.

3.1.2. Read Registered Data

Description of this command:

Allows you to read the configuration data of one or more consecutive addresses of the Monitor Table (MT) (See: PLC address table).

Important note:

The MT is used to read data from the PLC (i.e. state of inputs, outputs, internal registers and timers/counters). There are three commands used to configure and access the

MT's contents. Those commands are:

- Read Registered Data (DriverP1=31): Reads the MT's configuration.
- Write Registered Data (DriverP1=32): Writes the MT's configuration.
- Read I/O Monitor Data (DriverP1=33): Reads the MT's contents. The MT must be configured before attempting to read it.

Type of data handled by this command:

Analog Input

Number of points accepted by this command:

1-60

Meaning of the DriverP0 parameter:

Identifies the station number (0-255).

Meaning of the DriverP1 parameter:

31

Meaning of the DriverP2 parameter:

Indicates the first address to read (0-119).

3.1.3. Read I/O Monitor Data as Bytes

Description of this command:

Allows you to read the values within the Monitor Table (MT) as bytes (ranging from 0 to 255).

Important note:

The MT is used to read data from the PLC (i.e. state of inputs, outputs, internal registers and timers/counters). There are three commands used to configure and access the

MT's contents. Those commands are:

- Read Registered Data (DriverP1=31): Reads the MT's configuration.
- Write Registered Data (DriverP1=32): Writes the MT's configuration.
- Read I/O Monitor Data (DriverP1=33): Reads the MT's contents. The MT must be configured before attempting to read it.

Type of data handled by this command:

Analog Input / Digital Input

Number of points accepted by this command:

1-120

Meaning of the DriverP0 parameter:

Identifies the station number (0-255).

Meaning of the DriverP1 parameter:

33

Meaning of the DriverP2 parameter:

Indicates the first address to read (0-119).

Meaning of the DriverP3 parameter:

0

3.1.4. Read I/O Monitor Data as Words

Description of this command:

Allows you to read the values within the Monitor Table (MT) as words (ranging from 0 to 65535).

Important note:

The MT is used to read data from the PLC (i.e. state of inputs, outputs, internal registers and timers/counters). There are three commands used to configure and access the

MT's contents. Those commands are:

- Read Registered Data (DriverP1=31): Reads the MT's configuration.
- Write Registered Data (DriverP1=32): Writes the MT's configuration.
- Read I/O Monitor Data (DriverP1=33): Reads the MT's contents. The MT must be configured before attempting to read it.

Type of data handled by this command:

Analog Input / Digital Input

Number of points accepted by this command:

1-60

Meaning of the DriverP0 parameter:

Identifies the station number (0-255).

Meaning of the DriverP1 parameter:

33

Meaning of the DriverP2 parameter:

Indicates the first address to read (0-119).

Meaning of the DriverP3 parameter:

1

3.1.5. Set CPU In Run Mode**Description of this command:**

Allows you to set the PLC in RUN mode.

Type of data handled by this command:

Digital Output

Number of points accepted by this command:

1

Meaning of the DriverP0 parameter:

Identifies the station number (0-255).

Meaning of the DriverP1 parameter:

12

3.1.6. Set CPU In Stop Mode**Description of this command:**

Allows you to set the PLC in STOP mode.

Type of data handled by this command:

Digital Output

Number of points accepted by this command:

1

Meaning of the DriverP0 parameter:

Identifies the station number (0-255).

Meaning of the DriverP1 parameter:

13

3.1.7. Write Registered Data

Description of this command:

Allows you to configure the Monitor Table (MT). This configuration determines the PLC's internal values that will be read from the PC. The PointValue property indicates the address of the element to be displayed in the MT (See: PLC address table).

Important note:

The MT is used to read data from the PLC (i.e. state of inputs, outputs, internal registers and timers/counters). There are three commands used to configure and access the

MT's contents. Those commands are:

- Read Registered Data (DriverP1=31): Reads the MT's configuration.
- Write Registered Data (DriverP1=32): Writes the MT's configuration.
- Read I/O Monitor Data (DriverP1=33): Reads the MT's contents. The MT must be configured before attempting to read it.

Type of data handled by this command:

Analog Output

Number of points accepted by this command:

1-60

Meaning of the DriverP0 parameter:

Identifies the station number (0-255).

Meaning of the DriverP1 parameter:

32

Meaning of the DriverP2 parameter:

Indicates the first address to write (0-119).

3.1.8. Forced Set/Reset in Byte Mode

Description of this command:

Allows you to write the variable's value to any PLC element.

Type of data handled by this command:

Analog Output / Digital Output

Number of points accepted by this command:

1

Meaning of the DriverP0 parameter:

Identifies the station number (0-255).

Meaning of the DriverP1 parameter:

40

Meaning of the DriverP2 parameter:

Indicates the address of the element to be written (0-1407). (See PLC address table).

Meaning of the DriverP3 parameter:

0

3.1.9. Forced Set/Reset in Word Mode (EM-II Only)**Description of this command:**

Allows you to write the variable's value to any PLC element.

Type of data handled by this command:

Analog Output / Digital Output

Number of points accepted by this command:

1

Meaning of the DriverP0 parameter:

Identifies the station number (0-255).

Meaning of the DriverP1 parameter:

40

Meaning of the DriverP2 parameter:

Indicates the address of the element to be written (0-1407). (See PLC address table).

Meaning of the DriverP3 parameter:

1

3.1.10. Change Preset Value of T/C (EM-II Only)**Description of this command:**

Allows you to write the preset value of a Timer or Counter. The value of the variable indicates the time to set in the preset.

Type of data handled by this command:

Analog Output

Number of points accepted by this command:

1

Meaning of the DriverP0 parameter:

Identifies the station number (0-255).

Meaning of the DriverP1 parameter:

24

Meaning of the DriverP2 parameter:

Indicates the T/C address to write (0-95).

[PLC Address Table] Address		I/O Number	
000H-00FH	X000-X015	010H-01FH	X020-X035 020H-02FH
X040-X055	030H-03FH	X060-X075	040H-04FH X080-X095 050H-05FH
X100-X115	060H-06FH	X120-X135	070H-07FH
X140-X155	080H-08FH	X160-X175	090H-09FH X180-X195 0A0H-0AFH
Y200-Y215	0B0H-0BFH	Y220-Y235	0C0H-0CFH
Y240-Y255	0D0H-0DFH	Y260-Y275	0E0H-0EFH Y280-Y295
Y300-Y315	100H-10FH	Y320-Y335	110H-11FH
Y340-Y355	120H-12FH	Y360-Y375	130H-13FH Y380-Y395 140H-23FH
M400-M655	240H-33FH	M700-M955	340H-35FH
M960-M991	3A0H-3FFH	T/C000-T/C095	400H T/C100 402H
T/C101 4BEH	T/C195	4C0H T/C200 4C2H
T/C201 57EH	T/C295	

3.2. PLC Address Table

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
- [1433] PROTOCOL (Format): Validation error in device response
- [2147] CONFIG (NumValues): Only one value can be read or written
- [2175] CONFIG (NumValues): Too many values (max=1)
- [2182] CONFIG (NumValues): Too many values (max=120)
- [2227] CONFIG (NumValues): Too many values (max=60)
- [3014] CONFIG (P0): Invalid device address (0-255)
- [3508] CONFIG (P1): Invalid command
- [4011] CONFIG (P2): Invalid address to read (0-119)
- [4012] CONFIG (P2): Invalid address to write (0-119)
- [4066] CONFIG (P2): Invalid I/O number to write (0-1407)
- [4109] CONFIG (P2): Invalid T/C address to write (0-95)
- [4533] CONFIG (P3): Invalid data type (0=byte/1=word)
- [8121] CONFIG (Remote): Error has occurred
- [8301] CONFIG (Remote): Replying station is other than required

4.2. Keywords list

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

"EB-Series, EB/EC/EM-II, EC-Series, EM-II-Series, HITACHI, PLC, PLCs, Series".