

XHITAS10 Driver Manual

Hitachi HIDIC S10 Alpha PLC H-7338 Protocol Driver



HIDIC S10/2 Alpha
HIDIC S10/4 Alpha
HIDIC S10/Mini



CPKSoft Engineering
Process Monitoring and Industrial
Automation Software

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1. Introduction

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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 xhitas10.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 xhitas10.tlk driver is available in plain-C language for additional USD 599 if you own a license of TAS-HMITalk 8.04 or higher.

Refer to the following link to visit the xhitas10 driver page at CPKSoft Engineering website: <http://www.cpksoft.com/tabid/55/ProductID/48/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>.

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2. Driver details

2.1. Driver overview

The XHITAS10 driver allows you to communicate with the Hitachi HIDIC S10/2 Alpha, S10/4 Alpha and S10/Mini Series PLC that use the H-7338 serial protocol.

This driver allows you to read and write over PI/O Word Format Area and PI/O Bit Type Area.

Communication specifications

- 1) Transfer speed S10/2 Alpha: 19.2 kbps S10/4 Alpha: 150~19.2 kbps S10/Mini: 19.2 kbps
- 2) Communication mode: Half duplicate transfer
- 3) Synchronization mode: Start-stop synchronization
- 4) Transmission mode: Serial Transmission
- 5) Transmission bit configuration: Start bit: 1 Data bit: 8 Parity bit: 1 / Odd Stop bit: 1
- 6) Error control: Odd parity check Inquiry check of reversal data Inquiry check of eco-data
- 7) Maximum numbers of word transfer 256 Words
- 8) Communication circuit cable: Twisted pair line with seal (KP-EV-SB-0.5 SEQ-3P) Cable length: Max 300m
- 9) Interface: Photo-coupler interface

Important note:

If you cannot communicate with your PLC, check after setting the CommTxHoldRTSWhileTransmitting and CommTxHoldRTSWhileReceiving properties both to On.

2.2. Supported devices

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

HITACHI HIDIC S10/2 Alpha PLC
HITACHI HIDIC S10/4 Alpha PLC
HITACHI HIDIC S10/Mini PLC

3. Command list

3.1. Read PI/O Word Format Area

Description of this command:

Use this command to read registers from the PI/O Word Format Area as 16-bit word values from 0 to 65535. Values will be read starting at a given register address and up to 256 consecutive registers. Only the DriverP6 parameter is required to enter the register address. Remaining DriverP0 to DriverP5 and DriverP7 to DriverP9 parameters are not used by this command.

Type of data handled by this command:

Analog Input

Number of points accepted by this command:

1-256

Meaning of the DriverP6 parameter:

Indicates the first word register to be read. Word register addresses can be:

- XW00 to XWFF (External inputs)
- YW00 to YWFF (External outputs)
- GW00 to GWFF (Global registers)
- RW00 to RWFF (Internal registers)
- KW00 to KWFF (Keep)
- TW00 to TWFF (ON delay timers)
- UW00 to UWFF (One shot)
- CW00 to CWFF (Counters)
- NW00 to NW0F (N coils)
- PW00 to PW08 (Process coils)
- EW00 to EWFF (Event registers)
- ZW00 to ZW3F (Z registers)
- SW00 to SWBF (System registers)

Example: RW00

Values that are returned:

Value in PointValue (0) = First requested word register value (0 to 65535)

Value in PointValue (1) = Second requested word register value (0 to 65535)

...

Value in PointValue (DriverNumPoints-1) = Last requested word register value (0 to 65535)

3.2. Write PI/O Word Format Area

Description of this command:

Use this command to write registers in the PI/O Word Format Area as 16-bit word values from 0 to 65535. Values will be written starting at a given register address and up to 256 consecutive registers. Only the DriverP6 parameter is required to enter the register address. Remaining DriverP0 to DriverP5 and DriverP7 to DriverP9 parameters are not used by this command.

CAUTION:

Make sure that you select the right number of registers in the DriverNumPoints parameter. Setting the wrong number of registers, for example, to more registers than available for the selected register type, could make the driver to write over some other unexpected PLC memory positions.

Type of data handled by this command:

Analog Output

Number of points accepted by this command:

1-256

Meaning of the DriverP6 parameter:

Indicates the first word register to be written. Word register addresses can be:

- XW00 to XWFF (External inputs)
- YW00 to YWFF (External outputs)
- GW00 to GWFF (Global registers)
- RW00 to RWFF (Internal registers)
- KW00 to KWFF (Keep)
- TW00 to TWFF (ON delay timers)
- UW00 to UWFF (One shot)
- CW00 to CWFF (Counters)
- NW00 to NW0F (N coils)
- PW00 to PW08 (Process coils)
- EW00 to EWFF (Event registers)
- ZW00 to ZW3F (Z registers)
- SW00 to SWBF (System registers)

Example: RW00

Values that are sent:

Value in PointValue (0) = New value for first word register addressed (0 to 65535)

Value in PointValue (1) = New value for second word register addressed (0 to 65535)

...

Value in PointValue (DriverNumPoints-1) = New value for last word register addressed (0 to 65535)

3.3. Read PI/O Bit Type Area

Description of this command:

Use this command to read bits from the PI/O Bit Type Area as individual 0 or 1 values. Bits will be read starting at a given bit address and up to 1000 consecutive bits. Only the DriverP6 parameter is required to enter the register address. Remaining DriverP0 to DriverP5 and DriverP7 to DriverP9 parameters are not used by this command.

Type of data handled by this command:

Digital Input

Number of points accepted by this command:

1-1000

Meaning of the DriverP6 parameter:

Indicates the first bit to be read. Bit addresses can be:

- X000 to XFFF (External inputs)
- Y000 to YFFF (External outputs)
- G000 to GFFF (Global registers)
- R000 to RFFF (Internal registers)
- K000 to KFFF (Keep)
- T000 to TFFF (ON delay timers)
- U000 to UFFF (One shot)
- C000 to CFFF (Counters)
- N000 to N0FF (N coils)
- P000 to P080 (Process coils)
- E000 to EFFF (Event registers)
- Z000 to Z3FF (Z registers)
- S000 to SBFF (System registers)

Example: X000

Values that are returned:

Value in PointValue (0) = First requested bit status (0 or 1)

Value in PointValue (1) = Second requested bit status (0 or 1)

...

Value in PointValue (DriverNumPoints-1) = Last requested bit status (0 or 1)

3.4. Write PI/O Bit Type Area

Description of this command:

Use this command to write bits in the PI/O Bit Type Area as individual 0 or 1 values. Values will be written starting at a given bit address and up to 256 consecutive bits. Only the DriverP6 parameter is required to enter the register address. Remaining DriverP0 to DriverP5 and DriverP7 to DriverP9 parameters are not used by this command.

CAUTION:

Make sure that you select the right number of bits in the DriverNumPoints parameter. Setting the wrong number of bits, for example, to more bits that available for the selected bit type, could make the driver to write over some other unexpected PLC memory positions.

Type of data handled by this command:

Digital Output

Number of points accepted by this command:

1-256

Meaning of the DriverP6 parameter:

Indicates the first bit to be written. Bit addresses can be:

- X000 to XFFF (External inputs)
- Y000 to YFFF (External outputs)
- G000 to GFFF (Global registers)
- R000 to RFFF (Internal registers)
- K000 to KFFF (Keep)
- T000 to TFFF (ON delay timers)
- U000 to UFFF (One shot)
- C000 to CFFF (Counters)
- N000 to NOFF (N coils)
- P000 to P080 (Process coils)
- E000 to EFFF (Event registers)
- Z000 to Z3FF (Z registers)
- S000 to SBFF (System registers)

Example: X000

Values that are sent:

Value in PointValue (0) = New value for first bit addressed (0 or 1)

Value in PointValue (1) = New value for second bit addressed (0 or 1)

...

Value in PointValue (DriverNumPoints-1) = New value for last bit addressed (0 or 1)

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
- [2178] CONFIG (NumValues): Too many values (max=1000)
- [2204] CONFIG (NumValues): Too many values (max=256)
- [6037] CONFIG (P6): Invalid register address
- [6038] CONFIG (P6): Invalid bit address
- [6039] CONFIG (P6): Unknown register type
- [6040] CONFIG (P6): Unknown bit type

4.2. Keywords list

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

"Alpha, H7338, HIDIC, HITACHI, Mini, PLC, S10, S10/2, S10/4".