

XIDECM3 Driver Manual

Idec Izumi Micro3 Programmable Controller Protocol Driver



CPKSoft Engineering Process Monitoring and Industrial Automation Software

Copyright 1990-2008, CPKSoft Engineering. All rights reserved.

Index

1.	Introduction	3
2.	Driver details	4
2.1.	Driver overview	4
2.2.	Supported devices.....	4
3.	Command list	5
3.1.	Read Input Status (X)	5
3.2.	Read Output Status (Y)	5
3.3.	Read Internal Relays Status (M).....	6
3.4.	Read Shift Registers Status (R)	7
3.5.	Read Timer Preset Values (T)	8
3.6.	Read Timer Current Values (t)	8
3.7.	Read Counter Preset Values (C).....	9
3.8.	Read Counter Current Values (c)	10
3.9.	Read Data Register Values (W).....	10
3.10.	Read Calendar/Clock.....	11
3.11.	Write Output Status (Y).....	12
3.12.	Write Internal Relays Status (M).....	12
3.13.	Write Shift Registers Status (R)	13
3.14.	Write Timer Preset Values (T)	14
3.15.	Write Counter Preset Values (C)	15
3.16.	Write Data Register Values (W).....	15
3.17.	Write Calendar/Clock.....	16
4.	Appendices	18
4.1.	Error messages	18
4.2.	Keywords list.....	18

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 xidecm3.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 xidecm3.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 xidecm3 driver page at CPKSoft Engineering website: <http://www.cpksoft.com/tabid/55/ProductID/49/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

XIDECM3 driver was designed to support the IDEC IZUMI MICRO3 controllers.

Serial communication is RS-485 at the PLC side. You can use a RS232C/RS485 Converter HD9Z-T11 to convert electrical signals between RS-232C and RS-485 to communicate with a computer using a RS-232 port.

Communication is half-duplex, being the PC always the master and the PLC always behave as a slave in the RS-485 network.

This driver supports both types of end codes for messages. Terminator can be CR (default for the PLC) or CR+LF. The terminator can be selected using F10+F3+FUN8 in the Micro3 configuration software (CUBIC).

Communication parameters can be:

- Baudrate = 1200, 2400, 4800, 9600 (default), 19200 bauds.
- Start bits = 1
- Data bit = 7 (default), 8
- Stop bit = 1 (default), 2

If you are communicating with a RS-485 network in 1:N communication computer link system, it is suggested that you configure your driver to raise the RTS signal while transmitting and lower it while receiving.

If you are communicating in 1:1 communication, it is suggested that you keep the RTS signal raised during the whole communication.

2.2. Supported devices

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

IDEC IZUMI MICRO3 Micro Controllers

3. Command list

3.1. Read Input Status (X)

Description of this command:

This command is used to read the current status of binary inputs.

Type of data handled by this command:

Digital Input

Number of points accepted by this command:

1-32

Meaning of the DriverP0 parameter:

Device Number (0-31)

Meaning of the DriverP1 parameter:

88

Meaning of the DriverP2 parameter:

Indicates the first input to be read (0-37).

Meaning of the DriverP3 parameter:

Indicates if terminator is configured as CR or as CR+LF

- 0 = Terminator is CR [0D]

- 1 = Terminator is CR+LF [0D][0A]

Important note:

When indicating the first address to be read in the P2 parameter, the least significant digit must be a number between 0 and 7 since it is indicating a bit offset as an octal number.

Values that are returned:

Value in PointValue (0) = First binary input status (X) requested

Value in PointValue (1) = Second binary input status (X) requested

...

Value in PointValue (NumValues-1) = Last binary input status (X) requested

3.2. Read Output Status (Y)

Description of this command:

This command is used to read the current status of binary outputs.

Type of data handled by this command:

Digital Input

Number of points accepted by this command:

1-32

Meaning of the DriverP0 parameter:

Device Number (0-31)

Meaning of the DriverP1 parameter:

89

Meaning of the DriverP2 parameter:

Indicates the first output to be read (0-37).

Meaning of the DriverP3 parameter:

Indicates if terminator is configured as CR or as CR+LF

- 0 = Terminator is CR [0D]

- 1 = Terminator is CR+LF [0D][0A]

Important note:

When indicating the first address to be read in the P2 parameter, the least significant digit must be a number between 0 and 7 since it is indicating a bit offset as an octal number.

Values that are returned:

Value in PointValue (0) = First binary output status (Y) requested

Value in PointValue (1) = Second binary output status (Y) requested

...

Value in PointValue (NumValues-1) = Last binary output status (Y) requested

3.3. Read Internal Relays Status (M)

Description of this command:

This command is used to read the current status of internal relays.

Type of data handled by this command:

Digital Input

Number of points accepted by this command:

1-248

Meaning of the DriverP0 parameter:

Device Number (0-31)

Meaning of the DriverP1 parameter:

77

Meaning of the DriverP2 parameter:

Indicates the first internal relay to be read (0-317).

Meaning of the DriverP3 parameter:

Indicates if terminator is configured as CR or as CR+LF

- 0 = Terminator is CR [0D]
- 1 = Terminator is CR+LF [0D][0A]

Important note:

When indicating the first address to be read in the P2 parameter, the least significant digit must be a number between 0 and 7 since it is indicating a bit offset as an octal number.

Values that are returned:

- Value in PointValue (0) = First internal relay status (M) requested
- Value in PointValue (1) = Second internal relay status (M) requested
- ...
- Value in PointValue (NumValues-1) = Last internal relay status (M) requested

3.4. Read Shift Registers Status (R)

Description of this command:

This command is used to read the current status of shift registers.

Type of data handled by this command:

Digital Input

Number of points accepted by this command:

1-43

Meaning of the DriverP0 parameter:

Device Number (0-31)

Meaning of the DriverP1 parameter:

82

Meaning of the DriverP2 parameter:

Indicates the first shift register to be read (0-63).

Meaning of the DriverP3 parameter:

Indicates if terminator is configured as CR or as CR+LF

- 0 = Terminator is CR [0D]
- 1 = Terminator is CR+LF [0D][0A]

Important note:

When indicating the first address to be read in the P2 parameter, the least significant digit must be a number between 0 and 7 since it is indicating a bit offset as an octal number.

Values that are returned:

- Value in PointValue (0) = First shift register status (R) requested
- Value in PointValue (1) = Second shift register status (R) requested

...
Value in PointValue (NumValues-1) = Last shift register status (R) requested

3.5. Read Timer Preset Values (T)

Description of this command:

This command is used to read the current values of timer presets.

Type of data handled by this command:

Analog Input

Number of points accepted by this command:

1-32

Meaning of the DriverP0 parameter:

Device Number (0-31)

Meaning of the DriverP1 parameter:

84

Meaning of the DriverP2 parameter:

Indicates the first timer preset value to be read (0-31).

Meaning of the DriverP3 parameter:

Indicates if terminator is configured as CR or as CR+LF

- 0 = Terminator is CR [0D]

- 1 = Terminator is CR+LF [0D][0A]

Values that are returned:

Value in PointValue (0) = First timer preset value (T) requested

Value in PointValue (1) = Second timer preset value (T) requested

...

Value in PointValue (NumValues-1) = Last timer preset value (T) requested

3.6. Read Timer Current Values (t)

Description of this command:

This command is used to read the current values of timers.

Type of data handled by this command:

Analog Input

Number of points accepted by this command:

1-32

Meaning of the DriverP0 parameter:

Device Number (0-31)

Meaning of the DriverP1 parameter:

116

Meaning of the DriverP2 parameter:

Indicates the first timer value to be read (0-31).

Meaning of the DriverP3 parameter:

Indicates if terminator is configured as CR or as CR+LF

- 0 = Terminator is CR [0D]

- 1 = Terminator is CR+LF [0D][0A]

Values that are returned:

Value in PointValue (0) = First timer current value (t) requested

Value in PointValue (1) = Second timer current value (t) requested

...

Value in PointValue (NumValues-1) = Last timer current value (t) requested

3.7. Read Counter Preset Values (C)

Description of this command:

This command is used to read the current values of counter presets.

Type of data handled by this command:

Analog Input

Number of points accepted by this command:

1-32

Meaning of the DriverP0 parameter:

Device Number (0-31)

Meaning of the DriverP1 parameter:

67

Meaning of the DriverP2 parameter:

Indicates the first counter preset value to be read (0-31).

Values that are returned:

Value in PointValue (0) = First counter preset value (C) requested

Value in PointValue (1) = Second counter preset value (C) requested

...

Value in PointValue (NumValues-1) = Last counter preset value (C) requested

3.8. Read Counter Current Values (c)

Description of this command:

This command is used to read the current values of counters.

Type of data handled by this command:

Analog Input

Number of points accepted by this command:

1-32

Meaning of the DriverP0 parameter:

Device Number (0-31)

Meaning of the DriverP1 parameter:

99

Meaning of the DriverP2 parameter:

Indicates the first counter current value to be read (0-31).

Meaning of the DriverP3 parameter:

Indicates if terminator is configured as CR or as CR+LF

- 0 = Terminator is CR [0D]

- 1 = Terminator is CR+LF [0D][0A]

Values that are returned:

Value in PointValue (0) = First counter current value (c) requested

Value in PointValue (1) = Second counter current value (c) requested

...

Value in PointValue (NumValues-1) = Last counter current value (c) requested

3.9. Read Data Register Values (W)

Description of this command:

This command is used to read the current values of data registers.

Type of data handled by this command:

Analog Input

Number of points accepted by this command:

1-100

Meaning of the DriverP0 parameter:

Device Number (0-31)

Meaning of the DriverP1 parameter:

68

Meaning of the DriverP2 parameter:

Indicates the first data register to be read (0-99).

Meaning of the DriverP3 parameter:

Indicates if terminator is configured as CR or as CR+LF

- 0 = Terminator is CR [0D]
- 1 = Terminator is CR+LF [0D][0A]

Values that are returned:

Value in PointValue (0) = First data register value (W) requested

Value in PointValue (1) = Second data register value (W) requested

...

Value in PointValue (NumValues-1) = Last data register value (W) requested

3.10. Read Calendar/Clock

Description of this command:

This command is used to read the calendar/clock information.

Type of data handled by this command:

Analog Input

Number of points accepted by this command:

1-7

Meaning of the DriverP0 parameter:

Device Number (0-31)

Meaning of the DriverP1 parameter:

87

Meaning of the DriverP2 parameter:

0

Meaning of the DriverP3 parameter:

Indicates if terminator is configured as CR or as CR+LF

- 0 = Terminator is CR [0D]
- 1 = Terminator is CR+LF [0D][0A]

Values that are returned:

Value in PointValue (0) = Year

Value in PointValue (1) = Month

Value in PointValue (2) = Day

Value in PointValue (3) = Day of Week

Value in PointValue (4) = Hour

Value in PointValue (5) = Minute

Value in PointValue (6) = Second

3.11. Write Output Status (Y)

Description of this command:

This command is used to modify the current status of binary outputs.

Type of data handled by this command:

Digital Output

Number of points accepted by this command:

1-32

Meaning of the DriverP0 parameter:

Device Number (0-31)

Meaning of the DriverP1 parameter:

89

Meaning of the DriverP2 parameter:

Indicates the first output to be modified (0-37).

Meaning of the DriverP3 parameter:

Indicates if terminator is configured as CR or as CR+LF

- 0 = Terminator is CR [0D]

- 1 = Terminator is CR+LF [0D][0A]

Important note:

When indicating the first address to be modified in the HMITalk1.DriverP2 parameter, the least significant digit must be a number between 0 and 7 since it is indicating a bit offset as an octal number. When 2 or more bits are modified, all the other bits belonging to the same byte will be affected. When only one bit at a time is modified, a special command is used to avoid affecting other bits.

Values that are sent:

Value in PointValue (0) = First binary output status (Y) to be written

Value in PointValue (1) = Second binary output status (Y) to be written

...

Value in PointValue (NumValues-1) = Last binary output status (Y) to be written

3.12. Write Internal Relays Status (M)

Description of this command:

This command is used to modify the current status of internal relays.

Type of data handled by this command:

Digital Output

Number of points accepted by this command:

1-248

Meaning of the DriverP0 parameter:

Device Number (0-31)

Meaning of the DriverP1 parameter:

77

Meaning of the DriverP2 parameter:

Indicates the first internal relay to be modified (0-317).

Meaning of the DriverP3 parameter:

Indicates if terminator is configured as CR or as CR+LF

- 0 = Terminator is CR [0D]

- 1 = Terminator is CR+LF [0D][0A]

Important note:

When indicating the first address to be modified in the HMITalk1.DriverP2 parameter, the least significant digit must be a number between 0 and 7 since it is indicating a bit offset as an octal number. When 2 or more bits are modified, all the other bits belonging to the same byte will be affected. When only one bit at a time is modified, a special command is used to avoid affecting other bits.

Values that are sent:

Value in PointValue (0) = First relay status status (M) to be written

Value in PointValue (1) = Second relay status status (M) to be written

...

Value in PointValue (NumValues-1) = Last relay status status (M) to be written

3.13. Write Shift Registers Status (R)

Description of this command:

This command is used to modify the current status of shift registers.

Type of data handled by this command:

Digital Output

Number of points accepted by this command:

1-43

Meaning of the DriverP0 parameter:

Device Number (0-31)

Meaning of the DriverP1 parameter:

82

Meaning of the DriverP2 parameter:

Indicates the first shift register to be modified (0-63).

Meaning of the DriverP3 parameter:

Indicates if terminator is configured as CR or as CR+LF

- 0 = Terminator is CR [0D]
- 1 = Terminator is CR+LF [0D][0A]

Important note:

When indicating the first address to be modified in the HMITalk1.DriverP2 parameter, the least significant digit must be a number between 0 and 7 since it is indicating a bit offset as an octal number. When 2 or more bits are modified, all the other bits belonging to the same byte will be affected. When only one bit at a time is modified, a special command is used to avoid affecting other bits.

Values that are sent:

Value in PointValue (0) = First shift register status (R) to be written

Value in PointValue (1) = Second shift register status (R) to be written

...

Value in PointValue (NumValues-1) = Last shift register status (R) to be written

3.14. Write Timer Preset Values (T)

Description of this command:

This command is used to modify the current values of timer presets.

Type of data handled by this command:

Analog Output

Number of points accepted by this command:

1-32

Meaning of the DriverP0 parameter:

Device Number (0-31)

Meaning of the DriverP1 parameter:

84

Meaning of the DriverP2 parameter:

Indicates the first timer preset value to be modified (0-31).

Meaning of the DriverP3 parameter:

Indicates if terminator is configured as CR or as CR+LF

- 0 = Terminator is CR [0D]
- 1 = Terminator is CR+LF [0D][0A]

Values that are sent:

Value in PointValue (0) = First timer preset value (T) to be written

Value in PointValue (1) = Second timer preset value (T) to be written

...

Value in PointValue (NumValues-1) = Last timer preset value (T) to be written

3.15. Write Counter Preset Values (C)

Description of this command:

This command is used to modify the current values of counter presets.

Type of data handled by this command:

Analog Output

Number of points accepted by this command:

1-32

Meaning of the DriverP0 parameter:

Device Number (0-31)

Meaning of the DriverP1 parameter:

67

Meaning of the DriverP2 parameter:

Indicates the first counter preset value to be modified (0-31).

Meaning of the DriverP3 parameter:

Indicates if terminator is configured as CR or as CR+LF

- 0 = Terminator is CR [0D]

- 1 = Terminator is CR+LF [0D][0A]

Values that are sent:

Value in PointValue (0) = First counter preset value (C) to be written

Value in PointValue (1) = Second counter preset value (C) to be written

...

Value in PointValue (NumValues-1) = Last counter preset value (C) to be written

3.16. Write Data Register Values (W)

Description of this command:

This command is used to modify the current values of data registers.

Type of data handled by this command:

Analog Output

Number of points accepted by this command:

1-100

Meaning of the DriverP0 parameter:

Device Number (0-31)

Meaning of the DriverP1 parameter:

68

Meaning of the DriverP2 parameter:

Indicates the first data register to be modified (0-99).

Meaning of the DriverP3 parameter:

Indicates if terminator is configured as CR or as CR+LF

- 0 = Terminator is CR [0D]

- 1 = Terminator is CR+LF [0D][0A]

Values that are sent:

Value in PointValue (0) = First data register value (W) to be written

Value in PointValue (1) = Second data register value (W) to be written

...

Value in PointValue (NumValues-1) = Last data register value (W) to be written

3.17. Write Calendar/Clock

Description of this command:

This command is used to modify the calendar/clock information.

Type of data handled by this command:

Analog Output

Number of points accepted by this command:

7

Meaning of the DriverP0 parameter:

Device Number (0-31)

Meaning of the DriverP1 parameter:

87

Meaning of the DriverP2 parameter:

0

Meaning of the DriverP3 parameter:

Indicates if terminator is configured as CR or as CR+LF

- 0 = Terminator is CR [0D]

- 1 = Terminator is CR+LF [0D][0A]

Values that are sent:

Value in PointValue (0) = Year

Value in PointValue (1) = Month

Value in PointValue (2) = Day

Value in PointValue (3) = Day of Week

Value in PointValue (4) = Hour
Value in PointValue (5) = Minute
Value in PointValue (6) = Second

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
- [2157] CONFIG (NumValues): Too many data registers requested (max=100)
- [2158] CONFIG (NumValues): Too many data registers to write (max=100)
- [2161] CONFIG (NumValues): Too many input/outputs requested (max=32)
- [2162] CONFIG (NumValues): Too many input/outputs to write (max=32)
- [2164] CONFIG (NumValues): Too many internal relays requested (max=248)
- [2165] CONFIG (NumValues): Too many internal relays to write (max=248)
- [2168] CONFIG (NumValues): Too many shift registers requested (max=43)
- [2169] CONFIG (NumValues): Too many shift registers to write (max=43)
- [2172] CONFIG (NumValues): Too many timers/counters requested (max=32)
- [2173] CONFIG (NumValues): Too many timers/counters to write (max=32)
- [2266] CONFIG (NumValues): Too many values requested (max=7)
- [2276] CONFIG (NumValues): Too many values to write (max=7)
- [3015] CONFIG (P0): Invalid device address (0-31)
- [3542] CONFIG (P1): Invalid command (valid are 84/116/67/99/68/87)
- [3543] CONFIG (P1): Invalid command (valid are 88/89/77/82)
- [4102] CONFIG (P2): Invalid starting calendar/clock element (0 only)
- [4103] CONFIG (P2): Invalid starting input/output (0-37)
- [4104] CONFIG (P2): Invalid starting internal relay (0-317)
- [4106] CONFIG (P2): Invalid starting shift register (0-63)
- [4107] CONFIG (P2): Invalid starting timer/counter (0-31)
- [4108] CONFIG (P2): Invalid starting timer/counter (0-99)
- [4592] CONFIG (P3): Invalid terminator (0 for CR, 1 for CR+LF)
- [8037] CONFIG (Remote): Calendar or clock data error
- [8091] CONFIG (Remote): Data range error
- [8336] CONFIG (Remote): Timer/counter preset value change error
- [8346] CONFIG (Remote): Undocumented error

4.2. Keywords list

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

"Controller, Controllers, IDEC, IZUMI, Micro, MICRO3, Programmable".

