

XKOYO305 Driver Manual

Koyo DL305 PLC Family Communications Driver

Koyo KOYO ELECTRONICS INDUSTRIES CO., LTD.

DL305
Series
(w/DirectNet)



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 xkoyo305.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 xkoyo305.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 xkoyo305 driver page at CPKSoft Engineering website: <http://www.cpksoft.com/tabid/55/ProductID/60/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

XKOYO305 driver allows you to connect to KOYO Direct PLCs, Series 305, using DirectNet (hexa-mode) protocol.

2.2. Supported devices

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

- KOYO Direct Logic DL305 Series
- KOYO Direct Logic DL330 PLC
- KOYO Direct Logic DL330P PLC
- KOYO Direct Logic DL340 PLC

3. Command list

3.1. Read Timer/Counter/Data Registers in Binary Mode

Description of this command:

Reads the timer/counter/data registers values in binary mode.

Type of data handled by this command:

Analog Input

Number of points accepted by this command:

1-128

Meaning of the DriverP0 parameter:

Indicates the station number (0-90). If HMITalk1.DriverP0 = 0 then the connection is point-to-point.

Meaning of the DriverP1 parameter:

49

Meaning of the DriverP2 parameter:

Start address. In this case, HMITalk1.DriverP2 must have a value from 1 to 64 (dec.) to access PLC records 600 to 677 (octal), and a value from 65 to 128 (dec.) to access PLC records 400 to 577 (octal).

Meaning of the DriverP3 parameter:

0

3.2. Read Input/Output, Internal Relays and Shift Register Bits in Words and Binary Mode

Description of this command:

Reads the input/output, internal relays and shift register bits values in word and binary mode.

Type of data handled by this command:

Analog Input

Number of points accepted by this command:

1-250

Meaning of the DriverP0 parameter:

Indicates the station number (0-90). If HMITalk1.DriverP0 = 0 then the connection is point-to-point.

Meaning of the DriverP1 parameter:

51

Meaning of the DriverP2 parameter:

Start address. HMITalk1.DriverP2 must have the 8 bit- "package number" accessed, where:

Meaning of the DriverP2 parameter:

$(n/8)+1$, where "n" is the I/O bit number (decimal) which heads each PLC group of 8 bits.
For example: for the group of I/O bits from 136 to 143 (dec.):

Meaning of the DriverP2 parameter:

$(136/8)+1=18$

Meaning of the DriverP3 parameter:

0

3.3. Read Scratch Pad Memory in Binary Mode

Description of this command:

Reads the scratch pad memory values in binary mode.

Type of data handled by this command:

Analog Input

Number of points accepted by this command:

1-128

Meaning of the DriverP0 parameter:

Indicates the station number (0-90). If HMITalk1.DriverP0 = 0 then the connection is point-to-point.

Meaning of the DriverP1 parameter:

54

Meaning of the DriverP2 parameter:

Start address.

Meaning of the DriverP3 parameter:

0

3.4. Read Ladder Memory in Binary Mode

Description of this command:

Reads the ladder memory values in binary mode.

Type of data handled by this command:

Analog Input

Number of points accepted by this command:

1-128

Meaning of the DriverP0 parameter:

Indicates the station number (0-90). If HMITalk1.DriverP0 = 0 then the connection is point-to-point.

Meaning of the DriverP1 parameter:

55

Meaning of the DriverP2 parameter:

Start address.

Meaning of the DriverP3 parameter:

0

3.5. Read Communication Errors in Binary Mode

Description of this command:

Reads the communication errors values in binary mode.

Type of data handled by this command:

Analog Input

Number of points accepted by this command:

1-128

Meaning of the DriverP0 parameter:

Indicates the station number (0-90). If HMITalk1.DriverP0 = 0 then the connection is point-to-point.

Meaning of the DriverP1 parameter:

57

Meaning of the DriverP2 parameter:

Start address.

Meaning of the DriverP3 parameter:

0

3.6. Read Input/Output, Internal Relays and Shift Register Bits in Bit Mode

Description of this command:

Reads the input/output, internal relays and shift register bits values in bit mode.

Type of data handled by this command:

Digital Input

Number of points accepted by this command:

1-250

Meaning of the DriverP0 parameter:

Indicates the station number (0-90). If HMITalk1.DriverP0 = 0 then the connection is point-to-point.

Meaning of the DriverP1 parameter:

51

Meaning of the DriverP2 parameter:

Start address. HMITalk1.DriverP2 must have the 8 bit- "package number" accessed, where:

Meaning of the DriverP2 parameter:

$(n/8)+1$, where "n" is the I/O bit number (decimal) which heads each PLC group of 8 bits.
For example: for the group of I/O bits from 136 to 143 (dec.):

Meaning of the DriverP2 parameter:

$(136/8)+1=18$

Meaning of the DriverP3 parameter:

0

3.7. Write Timer/Counter/Data Registers in Binary Mode

Description of this command:

Writes the timer/counter/data registers values in binary mode.

Type of data handled by this command:

Analog Output

Number of points accepted by this command:

1-125

Meaning of the DriverP0 parameter:

Indicates the station number (0-90). If HMITalk1.DriverP0 = 0 then the connection is point-to-point.

Meaning of the DriverP1 parameter:

49

Meaning of the DriverP2 parameter:

Start address. In this case, HMITalk1.DriverP2 must have a value from 1 to 64 (dec.) to access PLC records 600 to 677 (octal), and a value from

65 to 128 (dec.) to access PLC records 400 to 577 (octal).

Meaning of the DriverP3 parameter:

0

3.8. Write Input/Output, Internal Relays and Shift Register Bits in Words and Binary Mode

Description of this command:

Writes the input/output, internal relays and shift register bits values in word and binary mode.

Type of data handled by this command:

Analog Output

Number of points accepted by this command:

1-125

Meaning of the DriverP0 parameter:

Indicates the station number (0-90). If HMITalk1.DriverP0 = 0 then the connection is point-to-point.

Meaning of the DriverP1 parameter:

51

Meaning of the DriverP2 parameter:

Start address. HMITalk1.DriverP2 must have the 8 bit- "package number" accessed, where:

Meaning of the DriverP2 parameter:

$(n/8)+1$, where "n" is the I/O bit number (decimal) which heads each PLC group of 8 bits.
For example: for the group of I/O bits from 136 to 143 (dec.):

Meaning of the DriverP2 parameter: $(136/8)+1=18$ **Meaning of the DriverP3 parameter:**

0

3.9. Write Scratch Pad Memory in Binary Mode

Description of this command:

Writes the scratch pad memory values in binary mode.

Type of data handled by this command:

Analog Output

Number of points accepted by this command:

1-125

Meaning of the DriverP0 parameter:

Indicates the station number (0-90). If HMITalk1.DriverP0 = 0 then the connection is point-to-point.

Meaning of the DriverP1 parameter:

54

Meaning of the DriverP2 parameter:

Start address.

Meaning of the DriverP3 parameter:

0

3.10. Write Ladder Memory in Binary Mode

Description of this command:

Writes the ladder memory values in binary mode.

Type of data handled by this command:

Analog Output

Number of points accepted by this command:

1-125

Meaning of the DriverP0 parameter:

Indicates the station number (0-90). If HMITalk1.DriverP0 = 0 then the connection is point-to-point.

Meaning of the DriverP1 parameter:

55

Meaning of the DriverP2 parameter:

Start address.

Meaning of the DriverP3 parameter:

0

3.11. Write Communication Errors in Binary Mode

Description of this command:

Writes the communication errors values in binary mode.

Type of data handled by this command:

Analog Output

Number of points accepted by this command:

1-125

Meaning of the DriverP0 parameter:

Indicates the station number (0-90). If HMITalk1.DriverP0 = 0 then the connection is point-to-point.

Meaning of the DriverP1 parameter:

57

Meaning of the DriverP2 parameter:

Start address.

Meaning of the DriverP3 parameter:

0

3.12. Write Input/Output, Internal Relays and Shift Register Bits in Bit Mode

Description of this command:

Writes the input/output, internal relays and shift register bits values in bit mode.

Type of data handled by this command:

Digital Output

Number of points accepted by this command:

1-8

Meaning of the DriverP0 parameter:

Indicates the station number (0-90). If HMITalk1.DriverP0 = 0 then the connection is point-to-point.

Meaning of the DriverP1 parameter:

51

Meaning of the DriverP2 parameter:

Start address. HMITalk1.DriverP2 must have the 8 bit- "package number" accessed, where:

Meaning of the DriverP2 parameter:

$(n/8)+1$, where "n" is the I/O bit number (decimal) which heads each PLC group of 8 bits.
For example: for the group of I/O bits from 136 to 143 (dec.):

Meaning of the DriverP2 parameter:

$(136/8)+1=18$

Meaning of the DriverP3 parameter:

0

3.13. Read Timer/Counter/Data Registers in BCD Mode

Description of this command:

Reads the timer/counter/data registers values in BCD mode.

Type of data handled by this command:

Analog Input

Number of points accepted by this command:

1-128

Meaning of the DriverP0 parameter:

Indicates the station number (0-90). If HMITalk1.DriverP0 = 0 then the connection is point-to-point.

Meaning of the DriverP1 parameter:

49

Meaning of the DriverP2 parameter:

Start address. In this case, HMITalk1.DriverP2 must have a value from 1 to 64 (dec.) to access PLC records 600 to 677 (octal), and a value from 65 to 128 (dec.) to access PLC records 400 to 577 (octal).

Meaning of the DriverP3 parameter:

1

3.14. Read Input/Output, Internal Relays and Shift Register Bits in Words and BCD Mode

Description of this command:

Reads the input/output, internal relays and shift register bits values in word and BCD mode.

Type of data handled by this command:

Analog Input

Number of points accepted by this command:

1-250

Meaning of the DriverP0 parameter:

Indicates the station number (0-90). If HMITalk1.DriverP0 = 0 then the connection is point-to-point.

Meaning of the DriverP1 parameter:

51

Meaning of the DriverP2 parameter:

Start address. HMITalk1.DriverP2 must have the 8 bit- "package number" accessed, where:

Meaning of the DriverP2 parameter:

$(n/8)+1$, where "n" is the I/O bit number (decimal) which heads each PLC group of 8 bits.
For example: for the group of I/O bits from 136 to 143 (dec.):

Meaning of the DriverP2 parameter: $(136/8)+1=18$ **Meaning of the DriverP3 parameter:**

1

3.15. Read Scratch Pad Memory in BCD Mode

Description of this command:

Reads the scratch pad memory values in BCD mode.

Type of data handled by this command:

Analog Input

Number of points accepted by this command:

1-128

Meaning of the DriverP0 parameter:

Indicates the station number (0-90). If HMITalk1.DriverP0 = 0 then the connection is point-to-point.

Meaning of the DriverP1 parameter:

54

Meaning of the DriverP2 parameter:

Start address.

Meaning of the DriverP3 parameter:

1

3.16. Read Ladder Memory in BCD Mode

Description of this command:

Reads the ladder memory values in BCD mode.

Type of data handled by this command:

Analog Input

Number of points accepted by this command:

1-128

Meaning of the DriverP0 parameter:

Indicates the station number (0-90). If HMITalk1.DriverP0 = 0 then the connection is point-to-point.

Meaning of the DriverP1 parameter:

55

Meaning of the DriverP2 parameter:

Start address.

Meaning of the DriverP3 parameter:

1

3.17. Read Communication Errors in BCD Mode

Description of this command:

Reads the communication errors values in BCD mode.

Type of data handled by this command:

Analog Input

Number of points accepted by this command:

1-128

Meaning of the DriverP0 parameter:

Indicates the station number (0-90). If HMITalk1.DriverP0 = 0 then the connection is point-to-point.

Meaning of the DriverP1 parameter:

57

Meaning of the DriverP2 parameter:

Start address.

Meaning of the DriverP3 parameter:

1

3.18. Write Timer/Counter/Data Registers in BCD Mode

Description of this command:

Writes the timer/counter/data registers values in BCD mode.

Type of data handled by this command:

Analog Output

Number of points accepted by this command:

1-125

Meaning of the DriverP0 parameter:

Indicates the station number (0-90). If HMITalk1.DriverP0 = 0 then the connection is point-to-point.

Meaning of the DriverP1 parameter:

49

Meaning of the DriverP2 parameter:

Start address. In this case, HMITalk1.DriverP2 must have a value from 1 to 64 (dec.) to access PLC records 600 to 677 (octal), and a value from 65 to 128 (dec.) to access PLC records 400 to 577 (octal).

Meaning of the DriverP3 parameter:

1

3.19. Write Input/Output, Internal Relays and Shift Register Bits in Words and BCD Mode

Description of this command:

Writes the input/output, internal relays and shift register bits values in word and BCD mode.

Type of data handled by this command:

Analog Output

Number of points accepted by this command:

1-125

Meaning of the DriverP0 parameter:

Indicates the station number (0-90). If HMITalk1.DriverP0 = 0 then the connection is point-to-point.

Meaning of the DriverP1 parameter:

51

Meaning of the DriverP2 parameter:

Start address. HMITalk1.DriverP2 must have the 8 bit- "package number" accessed, where:

Meaning of the DriverP2 parameter:

$(n/8)+1$, where "n" is the I/O bit number (decimal) which heads each PLC group of 8 bits.
For example: for the group of I/O bits from 136 to 143 (dec.):

Meaning of the DriverP2 parameter:

$(136/8)+1=18$

Meaning of the DriverP3 parameter:

1

3.20. Write Scratch Pad Memory in BCD Mode

Description of this command:

Writes the scratch pad memory values in BCD mode.

Type of data handled by this command:

Analog Output

Number of points accepted by this command:

1-125

Meaning of the DriverP0 parameter:

Indicates the station number (0-90). If HMITalk1.DriverP0 = 0 then the connection is point-to-point.

Meaning of the DriverP1 parameter:

54

Meaning of the DriverP2 parameter:

Start address.

Meaning of the DriverP3 parameter:

1

3.21. Write Ladder Memory in BCD Mode

Description of this command:

Writes the ladder memory values in BCD mode.

Type of data handled by this command:

Analog Output

Number of points accepted by this command:

1-125

Meaning of the DriverP0 parameter:

Indicates the station number (0-90). If HMITalk1.DriverP0 = 0 then the connection is point-to-point.

Meaning of the DriverP1 parameter:

55

Meaning of the DriverP2 parameter:

Start address.

Meaning of the DriverP3 parameter:

1

3.22. Write Communication Errors in BCD Mode

Description of this command:

Writes the communication errors values in BCD mode.

Type of data handled by this command:

Analog Output

Number of points accepted by this command:

1-125

Meaning of the DriverP0 parameter:

Indicates the station number (0-90). If HMITalk1.DriverP0 = 0 then the connection is point-to-point.

Meaning of the DriverP1 parameter:

57

Meaning of the DriverP2 parameter:

Start address.

Meaning of the DriverP3 parameter:

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

4.2. Keywords list

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

"Communications, Direct, DL305, DL330, DL330P, DL340, KOYO, Logic, PLC, Series".