

Magelis HMISTO501

Zelio/Millenium Driver

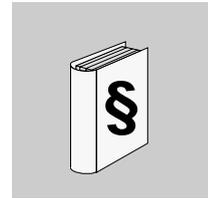
07/2011

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Safety Information



Important Information

NOTICE

Read these instructions carefully, and look at the equipment to become familiar with the device before trying to install, operate, or maintain it. The following special messages may appear throughout this documentation or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.



The addition of this symbol to a Danger or Warning safety label indicates that an electrical hazard exists, which will result in personal injury if the instructions are not followed.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.



DANGER

DANGER indicates an imminently hazardous situation, which, if not avoided, will result in death or serious injury.



WARNING

WARNING indicates a potentially hazardous situation, which, if not avoided, can result in death, serious injury, or equipment damage.



CAUTION

CAUTION indicates a potentially hazardous situation, which, if not avoided, can result in injury or equipment damage.

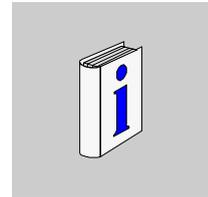
PLEASE NOTE

Electrical equipment should be installed, operated, serviced, and maintained only by qualified personnel. No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material.

A qualified person is one who has skills and knowledge related to the construction and operation of electrical equipment and the installation, and has received safety training to recognize and avoid the hazards involved.

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About the Book



At a Glance

Document Scope

This documentation presents the Zelio/Millenium driver for Magelis HMISTO501.

Validity Note

The data and illustrations found in this book are not binding. We reserve the right to modify our products in line with our policy of continuous product development. The information in this document is subject to change without notice and should not be construed as a commitment by Schneider Electric.

Product Related Information

WARNING

LOSS OF CONTROL

- The designer of any control scheme must consider the potential breakdown modes of control paths and, for certain critical control functions, provide a means to achieve a safe state during and after a path breakdown. Examples of critical control functions are emergency stop and overtravel stop.
- Provide separate or redundant control paths for critical control functions.
- System control paths may include communication links. Consideration must be given to the implications of unanticipated transmission delays or misoperation of the link. *
- Each implementation of Magelis target machine must be individually and thoroughly tested for proper operation before being placed into service.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

* For additional information, refer to NEMA ICS 1.1 (latest edition), Safety Guidelines for the Application, Installation, and Maintenance of Solid State Control .

User Comments

We welcome your comments about this document. You can reach us by e-mail at techcomm@schneider-electric.com.

Zelio/Millenium Driver



Subject of this Chapter

This chapter explains the Zelio/Millenium driver. For information on how to use the Vijeo Designer software, refer to the Vijeo Designer Online Help.

What's in this Chapter?

This chapter contains the following topics:

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System Structure

Overview

The following table describes the basic system structure for connecting the HMISTO501 target machine to the Zelio/Millenium equipment.

Connection

The following table describes the basic system setup for connecting the HMISTO501 target machine to the Zelio/Millenium driver.

Series	CPU	Link I/F	Communication Format	Diagram
Zelio	Zelio Logic Smart Relays	Port on the equipment	RS-232C	<i>Diagram of HMISTO501 target connection to the PLC</i>
Millenium	Crouzet Millenium 3 Controller	Port on the equipment	RS-232C	<i>Diagram of HMISTO501 target connection to the PLC</i>

Target Machine Serial Interface

The HMISTO501 has a COM1 port with 9 pins. The following table illustrates the pin layout for the HMISTO501 target.

Pin	Wire Color	Connection Description
SD	Green	Cable SR2CBL09 that connects to the terminal block.
RD	Black	Cable SR2CBL09 that connects to the terminal block.
ER	Red	Cable SR2CBL09 that connects to the terminal block.
DR	--	No connection.
SG	White	Cable SR2CBL09 that connects to the terminal block.
RS	--	Connects to CS.
CS	--	Connects to RS.
CD	--	No connection.
CI	--	No connection.

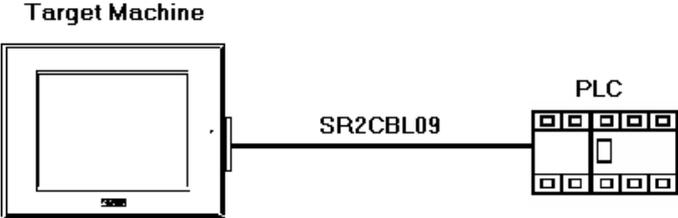
Cable Diagrams

To connect the HMISTO501 target to the PLC, Schneider Electric recommends using the following connection scheme.

Note:

- Ensure that the equipment is properly grounded as indicated in the user manual and follow all applicable country standards.

Diagram of HMISTO501 target connection to the PLC



Supported Device Addresses

Overview

The following table lists the device address ranges you can enter from the Zelio or Millennium I/O address configuration dialog box.

 WARNING
<p>UNINTENDED EQUIPMENT OPERATION</p> <p>Incorrect values will result if conflicting writes to the same register are requested simultaneously by the target and PLC program.</p> <p>Design your system to avoid conflicting write processes between the target machine and PLC program.</p> <p>Failure to follow these instructions can result in death, serious injury, or equipment damage.</p>

Zelio/Millennium

Device	Bit Address	Word Address	16 bit	32 bit	Attribute
SL IN	SL IN 1 - BIT1 to SL IN 24 - BIT16	SL IN 1 – SL IN 24	L/H	H/L	Read/Write
SL OUT	SL OUT 25 - BIT1 to SL OUT 48 - BIT16	SL OUT 25 – SL OUT 48	L/H	H/L	Read only

Consecutive Equipment Addresses

Overview

The following table lists the maximum number of consecutive addresses that can be read by the PLC. Refer to this table when using block transfers.

Note:

- To speed up data communication, use consecutive variable addresses on the same panel screen.
- The following situations increase the number of times that the equipment is read, which reduces the data communication speed between the target machine and the equipment:
 - when the number of consecutive addresses exceeds the maximum
 - when different register/device types are used.

Device	Maximum Consecutive Addresses	Gap Span
SL IN	24 words	24 words
SL OUT	24 words	24 words

Dialog Table Configuration

Overview

You can access the dialog table settings from the Equipment node.

Note:

- For information on the Dialog Table, see the section on Working with the Dialog Table in the Communications chapter of the Vijeo Designer online help.

When configuring the Dialog Table for the Zelio/Millennium driver, you can use both “To PLC” and “From PLC” functions.

Addresses are mapped to SL IN and SL OUT depending on the exchange types as follows:

- Functions 1-15 with the exchange type “To PLC” are assigned to SL IN (read/write).
- Functions 16-19 with the exchange type “From PLC” are assigned to SL OUT (read only).
- Functions 20-34 with the exchange type “From PLC” are assigned to SL OUT (read only).

Environment Setup

Overview

The following table lists the communication settings for the Zelio/Millenium driver, recommended by Schneider Electric. For more details, see *Driver Configuration*.

Target Machine Settings		
Driver Interface	COM Port	COM1
	Serial Interface	RS-232C
	Flow Control	None
	Transmission Speed	115200
	Retry Count	2
	Parity Bit	Even
	Stop Bit	1
	Data Length	7
	Rcv Time Out	10
	TX Wait Time	0

I/O Manager Configuration

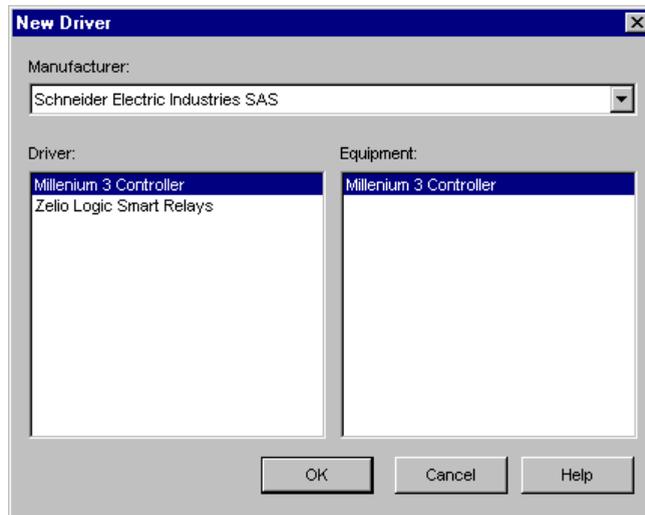
Overview

The driver and equipment, which enable communication between the target machine and the PLC, depends on the PLC type.

Note:

- For information on how to display the New Driver dialog box, see the section on Adding a Device Driver in the Communications chapter of the Vijeo Designer online help.

Screen example of I/O Manager Configuration



Driver Configuration

Overview

To configure the communication settings of the serial driver in the target machine, use the Driver Configuration dialog box. Make sure the settings are suitable for Zelio/Millennium equipment performance.

Note:

- For information on how to display the Driver Configuration dialog box, see the section on Configuring Communication Settings in the Communications chapter of the Vijeo Designer online help.

Screen example of Driver Configuration

The screenshot shows the 'Driver Configuration' dialog box. The title bar is blue with the text 'Driver Configuration' and a close button. The dialog is divided into several sections. At the top, there are two text boxes: 'Manufacturer:' containing 'Schneider Electric Industries SAS' and 'Driver:' containing 'Zelio / Millennium'. Below this, there are two columns of settings. The left column includes 'COM Port' (COM1), 'Serial Interface' (RS-232C), 'Flow Control' (None), 'Transmission Speed' (115200), and 'Retry Count' (2). The right column includes 'Parity Bit' (Even), 'Stop Bit' (1), 'Data Length' (7), 'Rcv. Time Out' (10 Sec), and 'TX Wait Time' (0 mSec). At the bottom of the dialog are three buttons: 'OK', 'Cancel', and 'Help'.

Screen Description

Area	Description
Manufacturer	Displays the name of the PLC manufacturer.
Driver	Displays the Zelio/Millennium serial connection that is used to connect the target machine to the PLC.

Area	Description
COM Port	Set to COM1, which is the COM port to use on the target machine for connecting to the PLC.
Serial Interface	Set to RS-232C, which is the serial connection used by the target.
Flow Control	Displays None.
Transmission Speed	Set to 115200 bits per second, as the communication speed used by the target.
Retry Count	Defines the number of times the driver tries to send or receive data when an error has been detected. Select a number between 0 and 255.
Parity Bit	Set to Even, as the the parity bit for use in detecting communication errors.
Stop Bit	Set to 1 as the stop bit.
Data Length	Set to 7 as the the length of each unit of data.
Rcv. Time Out	Defines the length of time (in seconds) that the target machine waits for a response before it outputs a time-out error or sends another communication. Select a time-out between 1 and 127 seconds.
TX Wait Time	<p>Defines the number of milliseconds that the target machine waits, after receiving a communication packet, before sending a response. Select a wait time between 0 and 255.</p> <p>The TX Wait Time depends on the project. For example, a simple project with one scan group can use the recommended Tx Wait Time of 0. However, for more complex projects you will need to increase the Tx Wait Time to prevent communication problems.</p>

Device Address Configuration

Overview

To define an equipment address for a variable in the Variable List, open the Variable Properties dialog box. Select External for the Data Source, and click the ellipsis in the Device Address property.

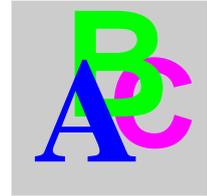
Screen example of the Millennium I/O Address Configuration dialog box (Words)

Screen example of the Millennium I/O Address Configuration dialog box (Bits)

Screen Description

Area	Description
Address	Enter the device address for the PLC variable. The drop-down list ensures that you enter the correct format for bit and word devices.

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