

# Siemens AG

## MPI/PPI Driver

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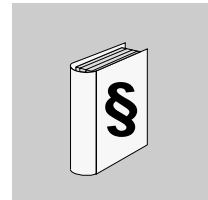
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## Safety Information



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### 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 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 or serious injury.**

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 **CAUTION**

**CAUTION** indicates a potentially hazardous situation which, if not avoided, **can result in** minor or moderate injury.

***NOTICE***

***NOTICE*** is used to address practices not related to physical injury.

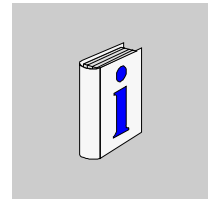
**PLEASE NOTE**

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 its installation, and has received safety training to recognize and avoid the hazards involved.

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# About the Book



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## At a Glance

### Document Scope

This manual describes the device driver communication settings in the Vijeo Designer screen editing software. Vijeo Designer enables you to design Magelis target machines that communicate with PLCs, drives, field devices, and other equipment.

For more information about Vijeo Designer and Magelis target machines, please refer to Vijeo Designer user documentation.

### 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.

### Documentation Conventions

**Target Machine:** Human-Machine Interface (HMI) that runs user applications designed in Vijeo Designer screen editing software. A target machine is also known as a terminal.

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## Product Related Information

### WARNING

#### LOSS OF CONTROL

- The designer of any control scheme must consider the potential failure modes of control paths and, for certain critical control functions, provide a means to achieve a safe state during and after a path failure. Examples of critical control functions are emergency stop and overtravel stop.
- Separate or redundant control paths must be provided for critical control functions.
- System control paths may include communication links. Consideration must be given to the implications of unanticipated transmission delays or failures of the link.\*
- Each implementation of a Magelis XBTGT, HMISTO, HMISTU, HMIGTO, XBTGH, XBTGK, XBTGC, iPC, and XBTGTW 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](mailto:techcomm@schneider-electric.com).



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# MPI/PPI Driver

# 1

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## Subject of this Chapter

This chapter explains the MPI/PPI Driver.

## What's in this Chapter?

This chapter contains the following topics:

Topic	Page
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## System Structure

### Overview

The following table describes the basic system setup for connecting the target machine to Siemens Series PLCs over a serial connection.

To view a cable connection diagram for a particular communication format, see *Cable Diagrams*.

### Connection

Series	CPU	Link I/F	Comm. Format	Diagram
S7-200 Series	CPU214 CPU215 CPU216 CPU221 CPU222 CPU224 CPU226 CPU226XM	MPI Port	RS-485	Cable Diagram 1
S7-300/400 Series	CPU312 CPU312C CPU312IFM CPU313 CPU313C CPU313C-2 DP CPU313C-2 PtP CPU314 CPU314C-2 DP CPU314C-2 PtP CPU315 CPU315-2 DP CPU316 CPU316-2 DP CPU317-2 DP CPU317-2 PN/DP	MPI Port	RS-485	Cable Diagram 1
	CPU412-1 CPU412-2 DP CPU413-1 CPU413-2 DP CPU414-1 CPU414-2 DP CPU414-3 DP CPU416-1 CPU416-2 DP CPU416-3 DP CPU417-4	MPI Port	RS-485	Cable Diagram 1

**Note:**

- By using a transmission speed no greater than 187.5 kbps, you can connect the target machine to networks that have both S7-200 and S7-300/400 Series equipment.
- For Multi-drop connections, refer to Siemens MPI network documents

## Target Machine Serial Interface

Use the following serial interface diagrams in combination with the cable diagrams in Section 3 to wire connections between the target machine and external equipment.

### Magelis XBTGK, XBTGC2000, XBTGH2000, and XBTGT2000 Series or higher

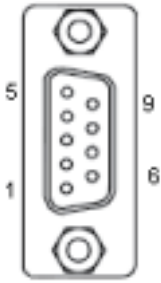
All XBTGK and XBTGT2000 Series and higher target machines have two COM ports: COM1 and COM2. The XBTGC2000 Series has one COM port: COM1. XBTGH2000 Series (Junction Box) has one COM port: COM1.

COM1 is a 9-pin SUBD male connector and COM2 is an RJ45 socket. The following tables illustrate the pin layout for these target machines.

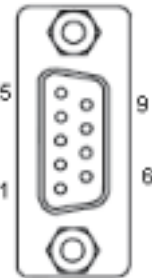
#### COM1 (9-pin Sub-D Plug)

This COM port can act as either an RS-232C or RS-422 interface.

#### RS-232C

	Pin Number	Symbol	Description
	1	CD	Carrier Detect
	2	RD(RXD)	Receive Data
	3	SD(TXD)	Transmit Data
	4	ER(DTR)	Data Terminal Ready
	5	GND	Common Ground
	6	DR(DSR)	Data Set Ready
	7	RS(RTS)	Request to Send
	8	CS(CTS)	Send Possible
9	CI(RI)	Called status display or +5V $\pm$ 5% output 0.25A	

## RS-422

	Pin Number	Symbol	Description
	1	RDA	Receive Data A
	2	RDB	Receive Data B
	3	SDA	Send Data A
	4	ERA	Data Terminal Ready A
	5	GND	Common Ground
	6	CSB	Send Possible B
	7	SDB	Send Data B
	8	CSA	Send Possible A
9	ERB	Data Terminal Ready B	

**Note:**

- When making your own connections, attach a loop back between pins 6 (CSB) and 9 (ERB), and between 4 (ERA) and 8 (CSA).
- To simplify the wiring, you can use the COM Port Conversion Adapter (Schneider Electric: XBTZGCOM) and Terminal Block Conversion Adapter (Schneider Electric: XBTZG949). These accessories allow access to the RS-422 signals using screw terminals. For information on the signals of the screw terminals, see the user manual for the XBTZG949.

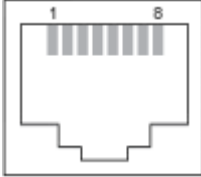
## COM2 (RJ45 Socket)

**⚠ WARNING****UNINTENDED EQUIPMENT OPERATION**

When making your own connections, use shielded RJ45 connectors. The shielded connector provides isolation against electromagnetic interference and provides a more secure physical connection in the RJ45 socket. Use of an improper RJ45 connection could lead to insecure connections.

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

COM2 supports RS-422/485 signals only.

	Pin Number	Symbol	Description
	1		
	2		
	3		
	4	D1(+)	Send Data (Positive Signal)
	5	D0(-)	Send Data (Negative Signal)
	6		
	7		
	8	GND	Common Ground

## Magelis HMIGTO Series

The HMIGTO target machines have two COM ports (COM1 and COM2), with the exception of the HMIGTO1310. The HMIGTO1310 has one COM port (COM1), which uses an RJ45 connector. For more information, see *Magelis XBTGT1000*, *XBTGT1005*, *HMIGTO1310*, *HMISTO*, and *HMISTU Series*.

COM1 is a 9-pin D-Sub male connector, and COM2 is an RJ45 socket. The following tables illustrate the pin layout for these target machines.

### COM1 (9-pin D-Sub Plug)

This COM port can act as either an RS-232C or RS-422/RS-485 interface.

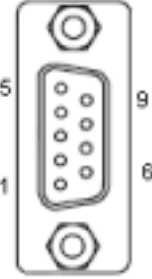
## ⚠ CAUTION

### LOSS OF COMMUNICATION

- All connections to the communication ports must not put excessive stress on the ports.
- Securely attach communication cables to the panel wall or cabinet.
- Use only D-Sub 9-pin cables with a locking tab in good condition.

**Failure to follow these instructions can result in injury or equipment damage.**

### RS-232C

	Pin Number	Symbol	Description
	1	CD	Carrier Detect
	2	RD(RXD)	Receive Data
	3	SD(TXD)	Transmit Data
	4	ER(DTR)	Data Terminal Ready
	5	SG	Signal Ground
	6	DR(DSR)	Data Set Ready
	7	RS(RTS)	Request to Send
	8	CS(CTS)	Send Possible
	9	CI(RI/VCC)	Called status display or +5V $\pm$ 5% output 0.25A
Shell	FG	Frame Ground (Common with SG)	

**Note:**

- You can switch pin 9 between RI and VCC via software. The VCC output is not protected against overcurrent. To prevent damage or a unit malfunction, use only the rated current.
- You can use the Cable Connector (Omron Corporation: XMD-0901), Cable Cover (Omron Corporation: XM2S-0913), and Jack Screw #4-40 UNC (Omron Corporation: XM2Z-0073).

## COM2 (RJ45 Socket)

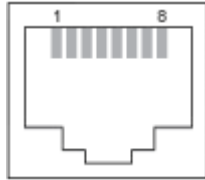
## ⚠ WARNING

**UNINTENDED EQUIPMENT OPERATION**

When making your own connections, use shielded RJ45 connectors. The shielded connector provides isolation against electromagnetic interference and provides a more secure physical connection in the RJ45 socket. Use of an improper RJ45 connection could lead to insecure connections.

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

COM2 supports RS-422/485 signals only.

	Pin Number	Symbol	Description
	1	NC	–
	2	NC	–
	3	NC	–
	4	Line A	Transfer Data (RS-485)
	5	Line B	Transfer Data (RS-485)
	6	RS(RTS)	Request to Send
	7	NC	–
	8	SG	Signal Ground



 **DANGER****ELECTRIC SHOCK**

The serial port is not isolated. The SG (signal ground) and FG (frame ground) terminals are connected inside the unit.

When using the SG terminal to connect an external device to the panel:

- Verify that a short-circuit loop is not created when you set up the system.
- Connect the #8 SG terminal to remote equipment when the host (PLC) unit is not isolated. Connect the #8 SG terminal to a known reliable ground connection to reduce the risk of damaging the circuit.

**Failure to follow these instructions can result in death or serious injury.**

**Magelis XBTGT1000, XBTGT1005, HMIGTO1310, HMISTO, and HMISTU Series**

XBTGT1000, XBTGT1005, HMIGTO1310, HMISTO, and HMISTU Series machines come with one COM port which uses an RJ45 connector. The RJ45 socket closest to the power connector is the COM1 port. This COM port can act as an RS-422/485 interface.

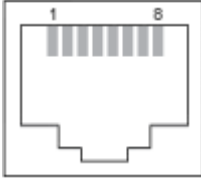
## COM1 (RJ45 Socket)

**⚠ WARNING****UNINTENDED EQUIPMENT OPERATION**

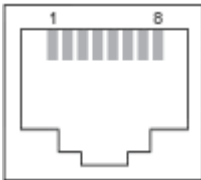
When making your own connections, use shielded RJ45 connectors. The shielded connector provides isolation against electromagnetic interference and provides a more secure physical connection in the RJ45 socket. Use of an improper RJ45 connection could lead to insecure connections.

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

## RS-232C

	Pin Number	Symbol	Description
	1	RD(RXD)	Receive Data
	2	SD(TXD)	Transmit Data
	3		
	4		
	5		
	6		
	7		
8	GND	Common Ground	

## RS-422/485 (2-wire)

	Pin Number	Symbol	Description
	1		
	2		
	3		
	4	D1(+)	Send Data (Positive Signal)
	5	D0(-)	Send Data (Negative Signal)
	6		
	7		
8	GND	Common Ground	

## Cable Diagrams

The illustrated cable diagrams and those recommended by Siemens may differ. However, Schneider Electric recommends using the following diagrammed connections.

When creating your own cables, to identify which pins to connect on the target machine, see *Target Machine Serial Interface*.

- Ensure that the equipment is properly grounded as indicated in the user manual and follows all applicable country standards.
- When making your own communication cable, be sure to connect the SG signal.

### Note:

- Recommended PLC connector: standard Profibus/MPI connector such as Siemens 6ES7 972-0BA11-0XA0.
- Recommended cable: °Profibus cable such as Siemens 6XV1 830-0EH10.
- For multi-drop connections, refer to Siemens MPI network documents.

## Diagram 1 - RS-485

To connect the target machine and the PLC, use the recommended cables and accessories.

Target Machine	Cable / Adapter	Comments
XBTGK Series (COM2), XBTGT2000 Series or higher (COM2), or HMIGTO Series (excluding HMIGTO1310) (COM2)	a RJ45 Connector Stripped Cable (Schneider Electric: VW3A8306D30 3m/10ft)	On the target machine, set the polar switch ON.
	b Isolation Unit (Schneider Electric: XBTZGI485) and User-created Cabled	
	c Isolation Unit (Schneider Electric: XBTZGI485), Profibus Bus Connector, and Profibus Cable	
	d Cable (Schneider Electric: XBTZG9721)	
XBTGT1000 Series (COM1) or XBTGT1005 Series (COM1), HMIGTO1310 (COM1), HMISTO Series (COM1), HMISTU Series (COM1)	a RJ45 Connector Stripped Cable (Schneider Electric: VW3A8306D30 3m/10ft)	
	d Cable (Schneider Electric: XBTZG9721)	
XBTGK Series (COM1), XBTGC2000 Series or higher (COM1), XBTGT2000 Series or higher (COM1), XBTGH2000 Series (Junction Box COM1), or HMIGTO Series (excluding HMIGTO1310) (COM1)	e Connection Diagram	

## ⚠ DANGER

### ELECTRIC SHOCK

Ensure that the ground connection for each component of interconnected equipment is reliably connected to the same ground potential (within 100 ohms) prior to connecting the equipment. There is a risk of electric shock when connecting a PLC cable to a target machine, as the two may be at different electrical potentials, even if both are separately connected to ground.

**Failure to follow these instructions can result in death or serious injury.**

## ⚠ WARNING

### UNINTENDED EQUIPMENT OPERATION

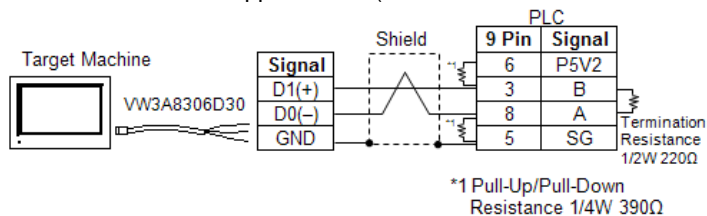
To reduce electromagnetic interference, use shielded twisted-pair cables. Connect the cable shields, then connect the cable to a single-point ground on the HMI side.

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

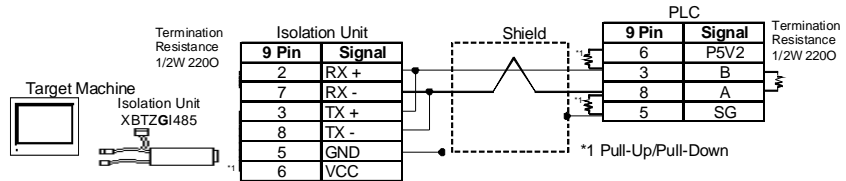
**Note:**

- The first and last nodes on the network should be terminated. When using genuine Siemens cables, turn on Profibus connectors at both ends of the network and turn off all other Profibus connectors. If a target machine is connected at the end of the network, set its isolation unit's (XBTZG485) switch to RS485. When using other types of connections, add termination resistance of 220 ohms at both ends of the network, add pull up/pull down resistance of 560 ohms at one end of the network, and pull up/pull down resistance of 390 ohms at the other end of the network.
- When connecting to the RJ45 COM port on the target machine, set its polar switch ON.

a. RJ45 Connector Stripped Cable (Schneider Electric: VW3A8306D30)



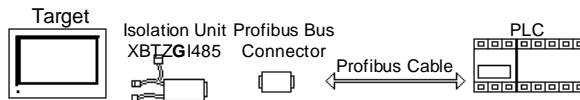
b. Isolation Unit (Schneider Electric: XBTZGI485) and User-created Cable



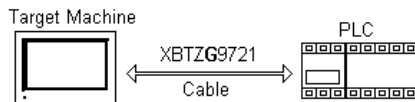
**Note:**

- The Isolation Unit is an optional unit that may be required when connecting over long distances. For routine connections, see Diagram 1a. The Isolation Unit reduces the interference on the lines that result from grounding both the target machine and PLC.

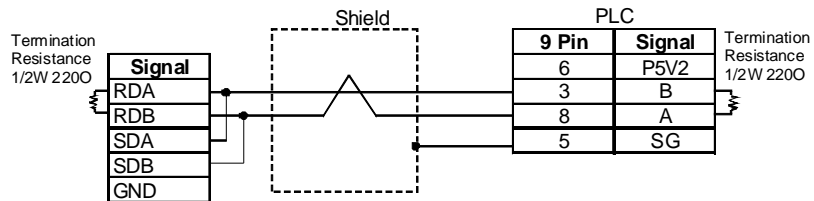
c. Isolation Unit (Schneider Electric: XBTZGI485), Profibus Bus Connector (Siemens), and Profibus Cable (Siemens)



d. Cable (Schneider Electric: XBTZG9721)



e. Connection Diagram



**Note:**

- When creating your own cables, you may need to loop back several pins. For more information, see *Target Machine Serial Interface*.

## Supported Device Addresses

### Overview

### WARNING

#### UNINTENDED EQUIPMENT OPERATION

Design your system to avoid conflicting write processes between the target machine and PLC program. Make sure that:

- The target machine and PLC program do not simultaneously write to the same register.
- PLC programs or other devices do not write 16-bit word values to registers being accessed in a bitwise manner.

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

The following tables list the device address ranges you can enter from the Device Address keypad.

For actual device address ranges supported by the PLC, refer to the corresponding PLC manual.

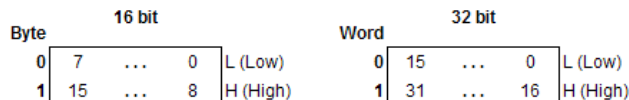
### S7-300/400 Series

Device	Bit Address <sup>1</sup>	Word Address	16 bit	32 bit
Input <sup>2</sup>	I0.0 - I127.7	IW0 - IW126 <sup>7</sup>	H/L <sup>8</sup>	H/L <sup>8</sup>
Output <sup>2</sup>	Q0.0 - Q127.7	QW0 - QW126 <sup>7</sup>		
Internal Bit <sup>2</sup>	M0.0 - M255.7	MW0 - MW254 <sup>7</sup>		
Data Block <sup>2*6</sup>	DB1.DBX0.0 - DB65535.DBX65535.7	DB1.DBW0 - DB65535.DBW65534 <sup>7</sup>		
Timer Word <sup>3*4*5*9</sup>	—	T000 - T255		
Counter Word <sup>3*4*5</sup>	—	C000 - C255		

## S7-200 Series

Device	Bit Address <sup>*1</sup>	Word Address	16 bit	32 bit
Variable <sup>*2</sup>	V00000.0 - V10239.7	VW00000 - VW10238 <sup>*7</sup>	H/L <sup>*8</sup>	H/L <sup>*8</sup>
Input <sup>*2</sup>	I00.0 - I15.7	IW00 - IW14 <sup>*7</sup>		
Output <sup>*2</sup>	Q00.0 - Q15.7	QW00 - QW14 <sup>*7</sup>		
Internal Bit <sup>*2</sup>	M00.0 - M31.7	MW00 - MW30 <sup>*7</sup>		
Timer Word <sup>*3,4,5</sup>	—	T000 - T255		
Counter Word <sup>*3,4,5</sup>	—	C000 - C255		

- \*1 Read-modify-write. When you write to one of these bit addresses, the target machine reads the entire word address, sets the defined bit, then returns the new value to the PLC. If the ladder program writes data to this word address during the bit read/write process, the resulting data may be incorrect.
- \*2 Device size is 1 byte.
- \*3 Device size is 2 bytes, or 1 word.
- \*4 Integer variable type. Valid range in BCD is 0000 to 0999.
- \*5 Read-only.
- \*6 Data blocks are created by the user. Available addresses depend on what the user has created.
- \*7 PLC word addresses defined for integer, float, and string variables must be even-numbered. i.e., IW5 is not a valid device address for an integer variable. Must be either IW4 or IW6.
- \*8 16-bit and 32-bit data, High and Low, refer to data as defined in the following examples.



- \*9 Time-based values obtained as BCD are masked in Vijeo Designer and will display as zeros. Use the BIN format when creating variables to read these values.

## Consecutive Equipment Addresses

### Overview

The following tables list the maximum number of consecutive addresses that can be read by each PLC. Refer to these tables 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 device types are used.

### S7-300/400 Series

Device	Max. Consecutive Addresses	Gap Span
Input (I)	32 bytes <sup>*1</sup> (Bit Access)	22 bytes <sup>*1</sup> (Bit Access)
Output (Q)		
Internal Bit (M)		
Data Block (DBX)		
Input (IW)	32 words (Word Access) <sup>*2</sup>	22 words (Word Access) <sup>*2</sup>
Output (QW)		
Internal Bit (MW)		
Data Block (DBW)		
Timer Word (T)		
Counter Word (C)		

### S7-200 Series

Device	Max. Consecutive Addresses	Gap Span
Input (I)	32 bytes <sup>*1</sup> (Bit Access)	22 bytes <sup>*1</sup> (Bit Access)
Output (Q)		
Internal Bit (M)		
Variable Bit (V)		
Input (IW)	32 words (Word Access) <sup>*2</sup>	22 words (Word Access) <sup>*2</sup>
Output (QW)		
Internal Bit (MW)		
Variable Word (VW)		
Timer Word (T)		
Counter Word (C)		



- \*1 Vijeo-Designer Runtime accesses bit addresses in byte units. For example, when the bit address IW101.3 is assigned to a Vijeo-Designer discrete variable, the entire byte address (IW101) is read. The bit address gap span can have up to 22 byte addresses.
- \*2 Vijeo-Designer Runtime accesses word addresses in even-numbered bytes (2 bytes = 1 word). For example, when the byte address IW100 is assigned to a Vijeo-Designer 16bit integer variable, a word (IW100, IW101) is read. The word address gap span can have up to 11 word addresses.

## Environment Setup

### Overview

## ⚠ WARNING

### UNINTENDED EQUIPMENT OPERATION

Read and understand the instructions in this section to ensure data is properly transferred. If you do not follow these instructions, incorrect data could be written to the PLC and the target machine.

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

The following table lists the communication settings, recommended by Schneider Electric, for the target machine and Siemens PLCs.

For details, see *Driver Configuration*, and *Equipment Configuration*.

Target Machine Settings		PLC Settings		
Driver	Serial Interface	RS-422 (2-wire)	—	
	Flow Control	None	—	
	Transmission Speed <sup>*1</sup>	187,500 bps	Baud Rate	187,500 bps
	Retry Count	2	—	—
	Parity Bit	Even	—	—
	Stop Bit	1 bit	—	—
	Data Length	8 bits	—	—
	Rcv Time Out	10 sec	—	—
TX Wait Time	0 msec	—	—	
Equipment	Local Node <sup>*2</sup>	1	MPI Address <sup>*3</sup>	0-126
	Target Node <sup>*3</sup>	0-126	—	—
	Highest Node Number <sup>*4</sup>	15/31/63/126	Highest Node Number <sup>*4</sup>	15/31/63/126

\*1 Transmission Speeds are as follows: 9600, 19200, 187500.

When you select the Transmission Speed, beware of the following:

- The target machine settings and the PLC settings must match
- All target machines support 9600, 19200, and 187500bps.

\*2 The Local Node (target machine) must NOT match the MPI Address (PLC).

\*3 The Target Node (target machine) must match the MPI Address (PLC).

\*4 The Highest Node Number, which identifies the highest possible node address on the network, must be the same on the target machine and PLC. The Local Node, Target Node, and MPI addresses must be less than or equal to the Highest Node Number.

## I/O Manager Configuration

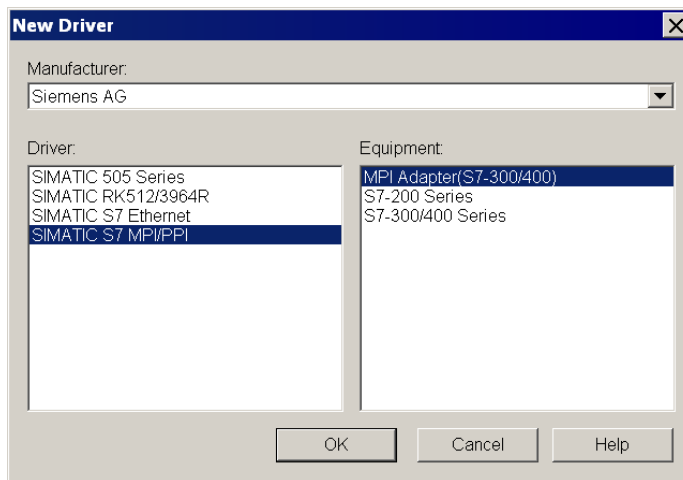
### Overview

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 Vijeo Designer Help.

### Screen example of I/O Manager Configuration



## Driver Configuration

### Overview

### WARNING

#### UNINTENDED EQUIPMENT OPERATION

Read and understand the instructions in this section to ensure data is properly transferred. If you do not follow these instructions, incorrect data could be written to the PLC and the target machine.

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

To configure the communication settings of the serial driver in the target machine, use the [Driver Configuration] dialog box. Make sure the settings match those of the PLC.

For an overview of the driver and device settings, see *Environment Setup*.

#### Note:

- For information on how to display the [Driver Configuration] dialog box, see the Vijeo Designer Help.

## Screen example of Driver Configuration

The screenshot shows a 'Driver Configuration' dialog box with the following settings:

- Manufacture: Siemens AG
- Driver: MPI / PPI
- COM Port: COM1
- Parity Bit: Even
- Serial Interface: RS-422 2-Wire
- Stop Bit: 1
- Flow Control: None
- Data Length: 8
- Transmission Speed: 187500
- Rcv. Time Out: 10 Sec
- Retry Count: 2
- TX Wait Time: 0 mSec
- MPI Network:
  - Local Node: 1
  - Highest Node Number: 31

## Screen Description

Area	Description
Manufacturer	Displays the name of the PLC manufacturer.
Driver	Displays the type of serial connection used to connect the target machine to the PLC.
COM Port	Defines which COM port to use on the target machine, for connecting to the PLC. Set to COM2.
Serial Interface	Defines the serial connection as RS-422 (2-wire). For details about the supported connections, see <i>Cable Diagrams</i> .
Flow Control	Defines the signals that control the data flow.
Transmission Speed	Sets the communication speed in bits per second. You can select speeds of 9600, 19200, and 187500 bits per second for S7-200 Series and the S7-300/400 Series. This setting must match the PLC baud rate. All target machines can communicate at speeds up to 187500 bps.
Retry Count	Defines the number of times the driver tries to send or receive data when an error has been detected.
Parity Bit	For detecting communication errors, set to Even.

---

<b>Area</b>	<b>Description</b>
Stop Bit	Defines the stop bit as 1.
Data Length	Defines the length of each unit of data as 8 bits.
Rcv. Timeout	Defines the length of time the target machine waits for a response before it outputs a timeout error or sends another communication.
TX Wait Time	Defines the number of milliseconds that the target machine waits, after receiving a communication packet, before sending a response.
MPI Network	
Local Node	Defines the value [0 to Highest Node Number (HNN)] that identifies the target machine. This value must NOT be the same as the MPI Address set up on the PLC. Defining a value that is greater than the Highest Node Number will set the Local Node to its default value (1).
Highest Node Number	Defines a value (15, 31, 63, or 126) that identifies the Highest Node Number (HNN). Be sure this setting is the same as the PLC unit's Highest Address setting.

## Equipment Configuration

### Overview

<b>⚠ WARNING</b>
<p><b>UNINTENDED EQUIPMENT OPERATION</b></p> <p>Read and understand the instructions in this section to ensure data is properly transferred. If you do not follow these instructions, incorrect data could be written to the PLC and the target machine.</p> <p><b>Failure to follow these instructions can result in death, serious injury, or equipment damage.</b></p>

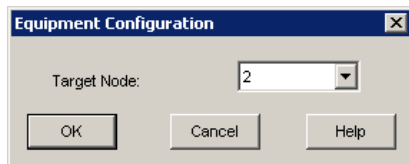
To set up details about the communication process between the target machine and the PLC, use the [Equipment Configuration] dialog box.

For an overview of the driver and equipment settings, see *Environment Setup*.

**Note:**

- For information on how to display the [Equipment Configuration] dialog box, see the Vijeo Designer Help.

### Screen example of Equipment Configuration



### Screen Description

Area	Description
Target Node	Enter a value to identify the PLC. For S7-200 Series, 0 to Highest Node Number (HNN). For S7-300/400 Series, 2 to HNN. This value must be the same as the MPI Address set up on the PLC.

## Device Address Configuration

### Overview

### WARNING

#### UNINTENDED EQUIPMENT OPERATION

Read and understand the instructions in this section to ensure data is properly transferred. If you do not follow these instructions, incorrect data could be written to the PLC and the target machine.

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

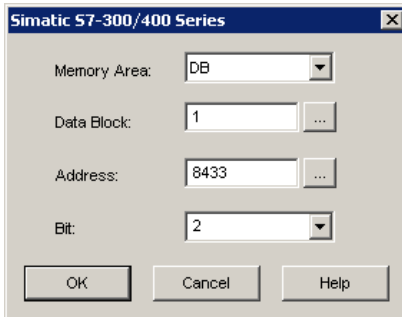
To set up a PLC variable in the Variable List, use the Device Address Keypad from the variable properties.

See *Supported Device Addresses*.

#### Note:

- For information on how to display the Device Address Keypad, see the Vijeo Designer Help.

### Screen example of Device Address Configuration

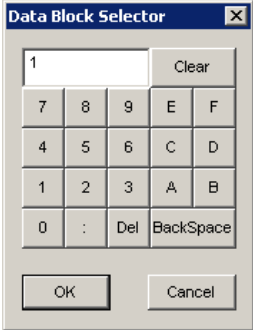
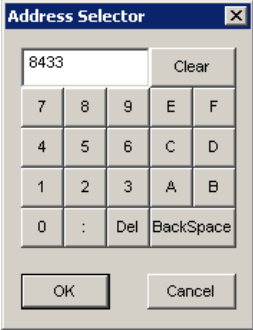


The screenshot shows a dialog box titled "Simatic 57-300/400 Series" with a close button (X) in the top right corner. The dialog contains the following fields and controls:

- Memory Area:** A dropdown menu with "DB" selected.
- Data Block:** A text input field containing "1" and a button with three dots ("...").
- Address:** A text input field containing "8433" and a button with three dots ("...").
- Bit:** A dropdown menu with "2" selected.
- At the bottom, there are three buttons: "OK", "Cancel", and "Help".



## Screen Description

Area	Description
Memory Area	Lists the PLC devices.
Data Block	<p>Available when the Memory Area is DB (Data Block). Data Blocks are memory areas created by the user. S7-200 Series PLCs do not have Data Block devices.</p> <p>Click the ellipsis [...] to display the [Data Block Selector] keypad, which assists you in entering a valid data block number.</p> 
Address	<p>Enter the device address number here.</p> <p>When mapping an integer, float, or string variable to a PLC device, you can enter only even addresses.</p> <p>When mapping a discrete variable to a PLC device, you can enter both odd or even addresses.</p> <p>In the Address field, click the ellipsis [...] to display the [Address Selector] keypad, which assists you in entering a valid device address.</p> 
Bit	Available when mapping discrete variables to a PLC device. Lists the available bits (0-7).

