

Magelis XBT-G

Uni-Telway driver

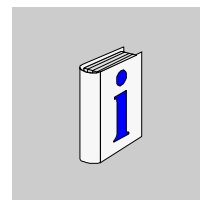
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About the Book



At a Glance

Document Scope This documentation presents Uni-Telway driver for Magelis XBT-G.

Related Documents

| Title of Documentation | Reference Number |
|-------------------------|------------------|
| Vijeo-Designer Tutorial | VJDUSE00010E |

User Comments We welcome your comments about this document. You can reach us by e-mail at TECHCOMM@modicon.com

Schneider Electric Uni-Telway Driver

1

At a Glance

Subject of this chapter

This chapter explains how to connect the target machine with Uni-Telway equipment. For information about how to use the Vijeo-Designer software, please refer to the Vijeo-Designer Online Help.

The types of target machines that are compatible with Vijeo-Designer depends on the version of Vijeo-Designer. For information about the compatibility of target machines, please refer to the Vijeo-Designer Online Help.

Note: target machines mean Magelis XBT-G products.

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 Schneider Electric Uni-Telway equipment, for other products refer to their documentation.

To view a cable connection diagram for a particular communication format, see the cable diagram section (See *Cable Diagrams*, p. 9).

Connection

The following table describes the basic system setup for connecting the target machine to Schneider Electric Uni-Telway equipment

| Series | CPU | Link I/F | Comm.Format | Diagram |
|---------------------|----------------|-----------------------------------|-------------|-----------------|
| TSX 07/37/57 Series | TSX 07 Nano | Programmer Port | RS-485 | Cable Diagram 1 |
| | | | RS 232C | Cable Diagram 2 |
| | TSX 37 Micro | TER and AUX Port | RS-485 | Cable Diagram 1 |
| | | | RS 232C | Cable Diagram 2 |
| | TSX 57 Premium | Ter and Aux Port | RS-485 | Cable Diagram 1 |
| | | | RS 232C | Cable Diagram 2 |
| | | TSX SCY21601 (PCMCIA Link Module) | RS-485 | Cable Diagram 3 |
| | Uni-Telway Bus | TSX SCA 62 (Subscriber Socket) | RS-485 | Cable Diagram 4 |

Cable Diagrams

Overview

Schneider Electric recommends using the following diagrammed connections.

- Ground the equipment FG terminal according to your country's applicable standard. For details, refer to the equipment manual.

Diagram 1

RS 485

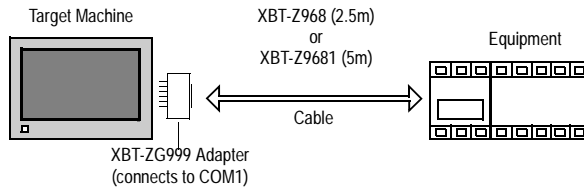


Diagram 2

RS 232C

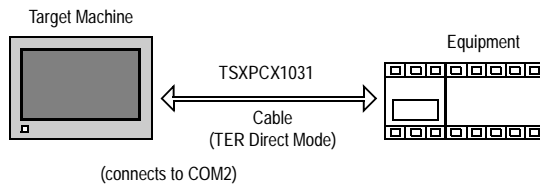


Diagram 3

RS 485

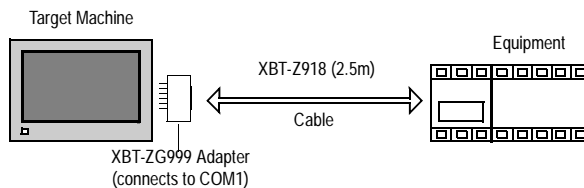
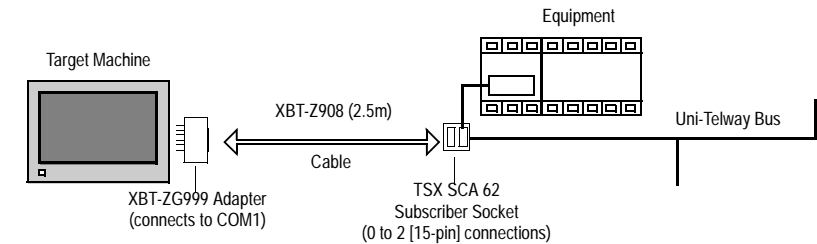


Diagram 4 RS 485



Supported Equipment Addresses

Overview

The following table lists the equipment address ranges of the Schneider Electric Uni-Telway equipment you can specify in the driver user interface. For actual address ranges supported by the equipment, refer to the corresponding manual. Supported addresses differ from one equipment model to another.

Equipment address range

The following table lists the address range of Schneider Electric equipment.

| Equipment | Bit Address (1) | Word Address | 16-Bit | 32-Bit |
|--------------------------|-------------------------------------|----------------------------|---------|---------|
| Internal Word | %MW00000:X - %MW65535:X15 (1) | %MW00000 - %MW65535 (2) | L/H (5) | L/H (5) |
| Internal Double Word (3) | - | %MD00000 - %MD32767 | | |
| Internal Float (3) | - | %MF00000 - %MF32767 | | |
| Constant Word (4) | %KW00000:X0 - %KW65535:X15 | %KW00000 - %KW65535 (2) | | |
| System Word | %SW000:X0 - %SW999:X15 (1) | %SW000 - %SW999 | | |
| Internal Bit | %M0000 - %M9999 | -- | | |
| System Bit | %S000-%S999 | -- | | |

Note :

(1): Read/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 word address to the equipment. If the ladder program writes data to this word address during the bit read/write process, the resulting data may be incorrect

(2): You can define a bit address by adding a colon and the bit indicator (X00–X15) at the end of the word. (e.g. %MW00100:X08)

(3): When using a 32-bit value (%MD or %MF), set up the variable in Vijeo-Designer with a Data Length of 32-bit; otherwise, the variable views the equipment address as a 16-bit word.

(4): Read-only

(5): 16-bit and 32-bit data, High and Low, refer to data as defined in the following examples

**16/32 bit
examples**

The word (16-bit) is managed as follows:

- least significant = byte n
- most significant = byte n + 1

(Check that the connected equipment uses the same format).

The double word and floating point word (32-bit) are managed as follows:

- least significant = word n
- most significant = word n + 1

(Check that the connected equipment uses the same format.)

16-bit and 32-bit data, High and Low example.

| | | 16 bit | | | | | | 32 bit | | | |
|------|--|--------|-----|---|----------|------|--|--------|-----|----|----------|
| Byte | | | | | | Word | | | | | |
| 0 | | 7 | ... | 0 | L (Low) | 0 | | 15 | ... | 0 | L (Low) |
| 1 | | 15 | ... | 8 | H (High) | 1 | | 31 | ... | 16 | H (High) |

Note: In case of different format between target machine and the equipment, use intermediate variable (which will be used in target machine) for which most significant byte/word and most significant byte/word are inverted.

Consecutive Equipment Addresses

Overview

The following table lists the maximum number of consecutive addresses that can be read for each equipment model. Refer to this table when using block transfers. When two variable address on the same equipment are closer than the Gap Span value, they are read in the same request. In other cases, they are read in two distinct requests.

- 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, and reduces the data communication speed between the target machine and the equipment:
 - when the number of consecutive addresses exceeds the maximum
 - when an address is designated for division
 - when different equipment types are used.

Consecutives addresses

The following table lists the maximum number of consecutive addresses that can be read for each equipment.

| Equipment | Max. consecutive addresses | Gap Span |
|-----------------------------|----------------------------|----------------|
| Internal Bit (%Mi) | 8 bits | 8 bits |
| System Bit (%Si) | | |
| Internal Word (%MWi) | 32 words | 10 words |
| Constant Word (%KWi) | | |
| System Word (%SWi) | | |
| Internal double word (%MDi) | 16 double words | 5 double words |
| Internal Float (%MFi) | | |

Environment Setup

Overview

The following table lists the communication settings, recommended by Schneider Electric, for the target machine and Schneider Electric Uni-Telway equipment. For details, see Section 7 (See *Driver Configuration*, p. 16) and Section 8 (See *Equipment Configuration*, p. 18).

RS-485 settings

RS-485 setup.

| Target Machine | | | Equipment Settings | |
|--|--------------------|-----------|--------------------|--------|
| Driver | Serial Interface | RS-485 | Conn. Format | RS-485 |
| | Flow Control | None | -- | |
| | Transmission Speed | 19200 (1) | Baud Rate | 19200 |
| | Retry Count | 0 | -- | |
| | Parity Bit | Odd | Parity Bit | Odd |
| | Stop Bit | 1 bit | Stop Bit | 1 bit |
| | Data Length | 8 bits | Data Length | 8 bits |
| | Rcv. Timeout | 10 sec | -- | |
| | TX Wait Time | 0 msec | -- | |
| Protocol | Address (SLAVE ID) | 4 | -- | |
| | | | | |
| Note: | | | | |
| (1): Set 9600bps for the TSX 07 Nano PLC | | | | |

I/O Manager Configuration

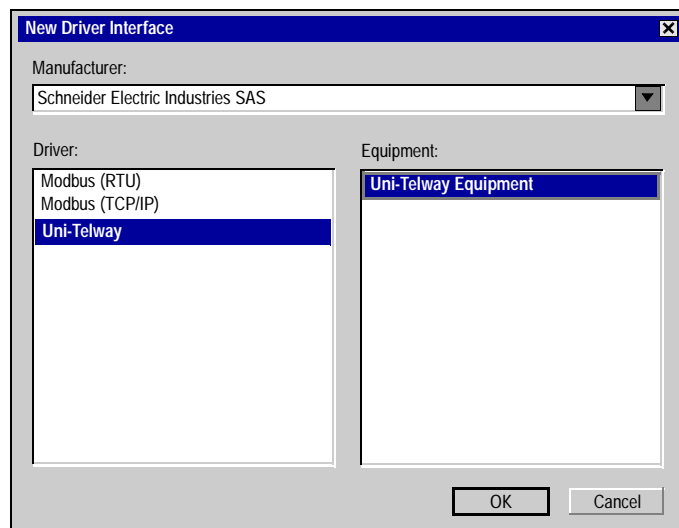
Overview

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

Note: For information on how to display the **New Driver Interface** dialog box, or for details about the I/O Manager, see the online help: Communication -> External I/O -> Setup I/O.

Screen example

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 match those of the equipment. For an overview of the driver and protocol settings, see Section 5 (See *Environment Setup*, p. 14).

Note: For information on how to display the **Driver Configuration** dialog box, see the online help: Communication -> External I/O -> Drivers -> Overview.

Screen example

Screen example of Driver Configuration.

Driver Configuration

Manufacturer: Schneider Electric Industries SAS Driver: Uni-Telway

| | | | |
|--------------------|--------|---------------|--------|
| COM Port | COM1 | Parity Bit | Odd |
| Serial Interface | RS-485 | Stop Bit | 1 |
| Flow Control | None | Data Length | 8 |
| Transmission Speed | 9600 | Rcv. Time Out | 3 Sec |
| Retry Count | 0 | TX Wait Time | 0 mSec |

OK Cancel Help

Description

Screen description.

| Area | Description |
|--------------------|---|
| Manufacturer | Displays the name of the equipment manufacturer. |
| Driver | Displays the driver used to connect the target machine to the equipment. |
| COM Port | Defines which COM port to use on the target machine, for connecting to the equipment. |
| Serial Interface | Defines the serial connection: RS-232C or RS-485 for COM1, or RS-232C (fixed) for COM2. For details about the supported connections, see Section 2 (See <i>Cable Diagrams</i> , p. 9). |
| Flow Control | Set to None , the driver handles flow control internally. |
| Transmission Speed | Sets the communication speed in bits per second. This setting must match the equipment baud rate. |
| Retry Count | Number is set to 0 , The driver does not retry sending or receiving data when an error occurs. |
| Parity Bit | Set to [Odd] parity. |
| Stop Bit | Set to 1, defines the stop bit as 1 bit. |
| Data Length | Set to 8, defines the length of each unit of data as 8 bits. |
| Rcv. Timeout | Defines the number of seconds 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. |

Equipment Configuration

Overview

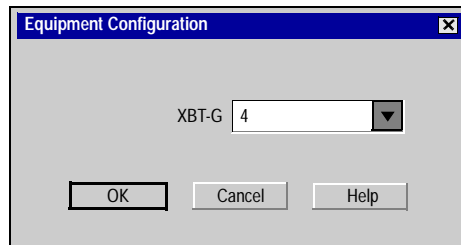
To set up details about the communication process between the target machine and the equipment, use the **Equipment Configuration** dialog box.

For an overview of the driver and equipment settings, see Section 5 (See *Environment Setup*, p. 14).

Note: For information on how to display the **Equipment Configuration** dialog box, see the online help: Communication -> External I/O -> Equipment -> Overview.

Screen example

Screen example of Equipment Configuration.



Description

Screen description.

| Area | Description |
|-------|--|
| XBT-G | Enter a value to identify the target machine. (1-253). |

Note:

- Up to 32 slaves can be connected to the equipment at the same time
 - Slave ID numbers 1 to 3 are reserved for the Programming unit to program the equipment.
-

Equipment Address Configuration

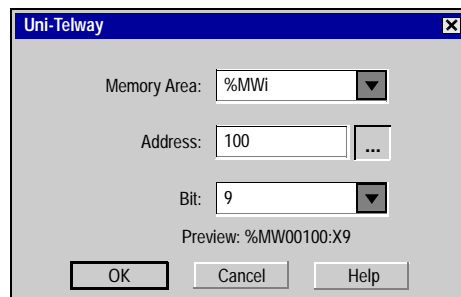
Overview

To define an equipment address for a variable in the Variable List, use the Equipment Address Keypad from the variable properties, see Section 3 (See *Supported Equipment Addresses*, p. 11).

Note: To display the **Equipment Address Keypad**, click on the [...] button.

Screen example

Screen example of Equipment Address Configuration.

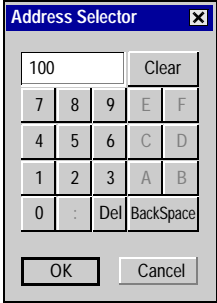


The screenshot shows a dialog box titled "Uni-Telway" with a close button (X) in the top right corner. The dialog contains the following fields and controls:

- Memory Area:** A text box containing "%MWi" and a dropdown arrow button.
- Address:** A text box containing "100" and a button with three dots (...).
- Bit:** A text box containing "9" and a dropdown arrow button.
- Preview:** A label displaying "%MW00100:X9".
- Buttons:** Three buttons at the bottom: "OK", "Cancel", and "Help".

Description

Screen description.

| Area | Description |
|-------------|--|
| Memory Area | Lists the equipment's discrete and word memory areas. |
| Address | <div>Enter the memory area address for the equipment variable. Click the ellipsis to display the [Address Selector] keypad, which ensures you type the correct value:</div> <div></div> |
| Bit | When defining a bit address in a word memory area, select the bit position (0-15). |