PLC-ANALYZER pro 6

PLC-Logic analysis in no time

Driver Addendum

PLC-driver

Schneider

Modicon TSX Premium / Atrium / Micro / Nano
Uni-Telway / TCP/IP

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PLC-ANALYZER pro **6 - Driver Addendum**

Schneider Modicon TSX Premium / Atrium / Micro / Nano - Uni-Telway / TCP/IP

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For references, suggestions and improvement suggestions we are always grateful. Please send these to AUTEM.

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Signal source

Schneider Modicon TSX Premium / Atrium / Micro / Nano

This driver addendum describes the particularities of the following PLC drivers and gives you hints on using them.

- Schneider Modicon TSX Premium / Atrium / Micro / Nano - TCP/IP / Uni-Telway

With the PLC driver Schneider Modicon TSX Premium / Atrium / Micro / Nano - TCP/IP / Uni-Telway PLC signals can be acquired via Industrial Ethernet (TCP/IP) or via Uni-Telway.

It is important that you read through the driver addendum before using a PLC driver. Please pay attention to the WARNINGS that advise you on possible dangers when using PLC-ANALYZER pro.

> **!** **WARNING**
>
> Errors that may occur in the automated facility, endangering humans or causing large-scale material damage, must be prevented by additional precautions. These precautions (e.g. independent limit monitors, mechanical interlocks) must guarantee safe operation, even in case of dangerous errors.

Installation

The PLC driver can be added to the project as a new signal source. If the driver you want is not yet in the list of available signal sources, you must first activate the license for the PLC-driver with the AUTEM LicenseManager on your computer.

Installing additional hardware

If you have already connected your PC to the PLC for programming with PL7 PRO, you normally don't need to do anything else.

Otherwise, establish the connection for the coupling.

Installing additional software

Aside from the PLC-ANALYZER pro Basic Module and PLC driver a XIP-driver is needed for a TCP/IP-connection or a UNITELWAY-driver for a serial connection. These drivers are already present in the programming-software of PL7 PRO.

Configuration

Open driver settings to set important parameters for data recording. If you have added the driver to the project several times, you can set the properties individually for each individual driver.

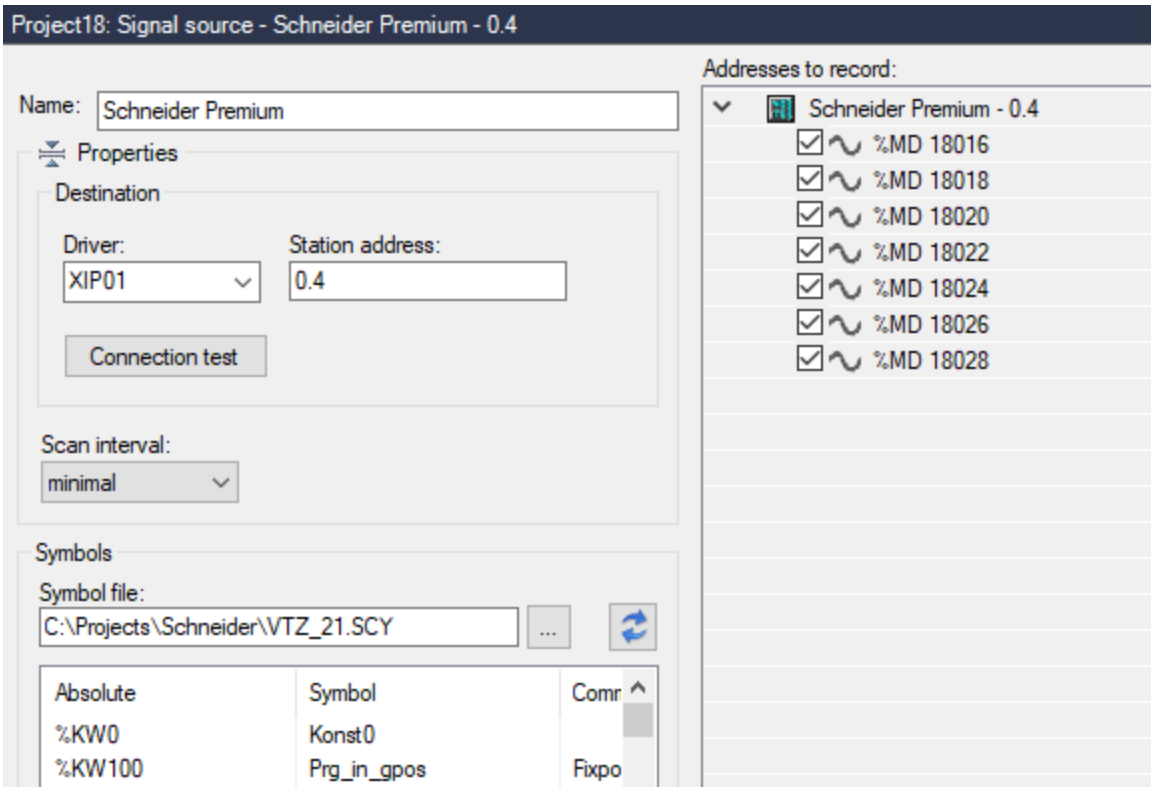

Fig. 1-1 Settings Schneider Modbus TSX Premium

First enter a meaningful name. Then enter under *Driver* that XWAY-communication-driver of the PLC concerned. Adjust the characteristics of these drivers in the XWAY driver manager of the programming-software PL7 PRO. Define the *Station address* (s. PL7 PRO)

Press *Connection test* to check, whether a connection to the PLC can be established.

Under *Scan interval* you specify the time interval at which measured values are read out from the PLC. A longer sampling interval can be selected for signal paths that are not time-critical, e. g. temperature. As a result, the generated signal files become smaller.

Under *Symbols you* select a symbol file, to make the symbols of this file available for address selection. A selected symbol file makes it possible to use symbolic identifiers when entering addresses. In addition to the absolute address, the symbolic identifier and comment are also displayed and stored in a signal- or project file. After setting the communication properties, add the PLC signals to be recorded.

Data acquistion

Supported PLC models and CPUs

The Schneider Modicon TSX Premium / Atrium / Micro / Nano driver supports all CPUs of the Premium-, Atrium-, Micro- und Nano-family.

Recordable PLC addresses

The following table shows the recordable addresses and the corresponding address syntax:

Syntax	Address type	Example
%Qx.z	Output bit z from I/O-Modul x	%Q3.4
%QWx	Output word from I/O-Modul x	%QW14
%Ix.z	Input bit z from I/O-Modul x	%I17.0
%IWx	Input word from I/O-Modul x	%IW12
%Fx	Flag bit x	%F4
%FBx	Flag byte x	%FB250
%FWx	Flag word x	%FW24
%FDx	Flag double word x	%FD134
%FFx	Flag x (floating-point representation)	%FF104
%Sx	System bit x	%S37
%SWx	System word x	%SW24
%SDx	System double word x	%SD134
%CBx	Constant x (Byte)	%CB44
%CWx	Constant x (word)	%CW62
%CDx	Constant x (double word)	%CD36
%CFx	Constant x (floating-point representation)	%CF14
%MNx.P	Monostable object x – Preset value	%MN22.P
%MNx.V	Monostable object x – actuel value	%MN11.V
%MNx.R	Monostable object x – R-output	%MN4.R
%Tx.P	PL7 Timer x – Preset value	%T14.P
%Tx.V	PL7 Timer x – actuel value	%T42.V
%Tx.R	PL7 Timer x – R-output	%T30.R
%Tx.D	PL7 Timer x – D-output	%T12.D
%TMx.P	IEC Timer x – Preset value	%TM20.P
%TMx.V	IEC Timer x – actuel value	%TM5.V
%TMx.Q	IEC Timer x – Q-output	%TM12.Q
%Cx.P	Counter x – Preset value	%C10.P
%Cx.V	Counter x – actuel value	%C22.V

Syntax	Address type	Example
%Cx.E	Counter x – E-output	%C5.E
%Cx.D	Counter x – D-output	%C8.D
%Cx.F	Counter x – F-output	%C18.F
%FCx.P	Fast counter x – Preset value	%FC20.P
%FCx.V	Fast counter x – actuel value	%FC22.P
%FCx.T1	Fast counter x – T1-Preset value	%FC12.T1
%FCx.T2	Fast counter x – T2- actuel value	%FC6.T2
%Rx.I	Register object x – Input value	%R12.I
%Rx.O	Register object x – Output value	%R26.O
%Rx.E	Register object x – E-output	%R4.E
%Rx.F	Register object x – F-output	%R23.F
%Dx.V	Drum Controller x – Input value	%D5.V
%Dx.S	Drum Controller x – actuel value	%D13.S
%Dx.F	Drum Controller x – F-output	%D21.F

Table 1-1 Address syntax Schneider TSX Permium

Number of recordable addresses

A maximum of 16 million addresses can be acquired from up to 250 signal sources.

Time behaviour and particularities

NOTE

Acquiring data with PLC-ANALYZER pro results in a small increase in cycle time in the PLC to the same manner as it happens with programming software in the online-mode.

One Scan is normally from one PLC-cycle. The intervals between scan transfers depend on these facts:

- Cycle time of the PLC
- Number and combination of selected addresses. Transfer blocks are formed from the selected addresses. Each block causes further delays.
- Type of the data transfer (Ethernet or serial interface)
- Speed of the data transfer

The minimum scan time for acquiring one word via serial connection with 19200 baud is about 40ms and via Ethernet about 20 ms.