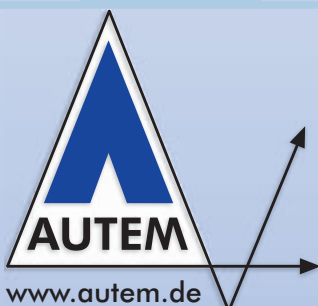


PLC-Driver
Siemens LOGO!
programming interface



PLC-ANALYZER *pro 5*

The logic analyzer for
programmable
logic controls

Driver Addendum

Siemens LOGO! - programming interface

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

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1 Installation

This driver addendum is a supplement to the User Manual PLC-ANALYZER pro 5. This driver addendum describes the particularities of the following PLC driver and gives you hints on the usage:

- Siemens LOGO! - programming interface

The listed driver „Siemens LOGO! - programming interface” makes the acquisition of PLC signals through the serial communication port of PLC possible.

It is important, that you read through the driver addendum first, before you use 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 external precautions. These precautions (e.g. independent limit monitors, mechanical interlocks) must guarantee a safe operation even in the case of dangerous errors.

1.1 Installation of PLC Driver

The PLC driver can be installed while PLC-ANALYZER pro is operating. Select *PLC driver* in menu *Extras*. In the window PLC driver click the button *Add*. If the desired driver is not on the list, you have to install a new driver via the License-key management (s. *user manual PLC-ANALYZER pro 5 - chapter 2-2 Installation*).

With PLC-ANALYZER pro you can load the same or different PLC drivers more than once to acquire data from different PLCs. E. g. to record signals from two different LOGO!, load the driver twice and make the appropriate driver settings (COM-port).

1.1.1 Installing additional hardware

If you have already connected your PC with the LOGO! using LOGO! (USB) PC cable, usually nothing else must be done. Otherwise establish this connection.

1.1.2 Installing additional software

No software is required in addition to the PLC-ANALYZER pro basic module and the PLC driver.

1.2 Configuration of PLC Driver

After installing the driver you can change important parameters under *Properties*.

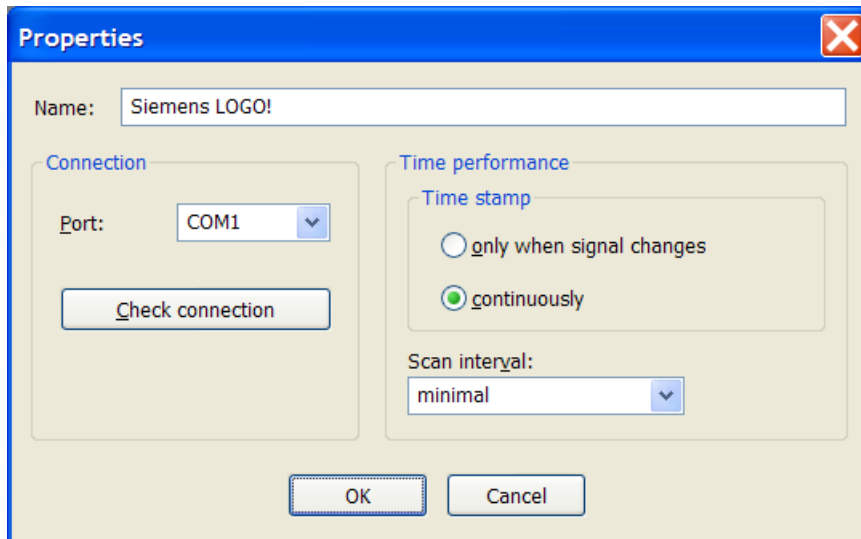


Fig. 1-1 Driver settings LOGO!

Choose a meaningful *Name* for the driver first, then specify under *Connection* the COM-Port (serial interface) of the PC, which is connected by a cable to the PLC. Press *Test Connection* to check, whether a connection to the PLC can be established.

Use *Time stamp* to specify, if the time stamps should be entered into the signal file continually (at every scan point) or only for signal changes. For a continuous time stamp the exact scan points are documented even for a signal which does not change. The signal files are therefore larger.

Under *Scan interval* enter the length of time between read-out of data from the PLC. A longer scan interval may be chosen for non-critical time signals, e.g. temperature. The signal files thus created become smaller.

2 Data acquisition

2.1 Supported PLC models

The driver supports all Siemens LOGO! PLCs in version “0BA4” and higher.

2.2 Recordable PLC addresses

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

Syntax	Address type	Example
I x	Input bit x	I 4
Q x	Output bit x	Q 5
M x	Flag bit x	M 12
C x	Cursor key x	C 3
F x	Function key x	F 4
S x	Shift register bit x	S 7
AI x	Analog input x	AI 6
AQ x	Analog output x	AQ 4
AM x	Analog flag x	AM 5
B x;TEV	Timer: On-Delay x	B 4;TEV
B x;TAV	Timer: Off-Delay x	B 23;TAV
B x;TEAV	Timer: On-/Off-Delay x	B 11;TEAV
B x;TSEV	Timer: Retentive On-Delay x	B 21;TSEV
B x;TWI	Timer: Wiping relay/pulse output x	B 7;TWI
B x;TWF	Timer: Edge triggered wiping relay x	B 8;TWF
B x;TIG	Timer: Asynchronous pulse generator x	B 1;TIG
B x;TZG	Timer: Random generator x	B 5;TZG
B x;TTS	Timer: Stairway lighting switch x	B 22;TTS
B x;TKS	Timer: Multiple function switch x	B 1;TKS
B x;ZVR	Counter: Up/Down counter x	B 5;ZVR
B x;ZBS	Counter: Hours counter x	B 17;ZBS
B x;AK	Analog comparator x	B 19;AK
B x;AMUX	Analog multiplexer x	B 5;AMUX
B x;AR	Analog ramp x	B 11;AR
B x;API	PI controller x	B 2;API

Table 2-1 Adress-Syntax Siemens LOGO!

2.3 Number of simultaneously recordable addresses

Up to 1000 addresses can be recorded. The term “address” means a bit-, byte-, word- or double-word-address.

2.4 Time behavior 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.

The intervals between scan transfers from LOGO! PLC to the PC are depending on the following items:

- cycle time of PLC
- number of recorded addresses

The data of the inputs and outputs and words, cursor and functions keys are read from the PLC as a block.

For a B&R „X20“ the scan interval for an address is approximately 12 ms via Ethernet TCP/IP, i.e. for a cycle time of 12 ms there is one scan for each cycle. A longer PLC cycle time results in more than one scan for each cycle. For a shorter cycle time the computer does not obtain a scan for each cycle, resulting in a partial loss of information. This loss can be compensated by repeated measurements of the interesting signals.

For every additional address the scan interval increases by 12 ms. The following table exemplarily shows some values of time behaviour during acquisition from a PLC model B&R „X20“:

Requested data	Scan time
1 input bit	190 ms
24 inputs bits, 16 output bits, 20 flags and 8 analog inputs	190 ms
1 output bit and 1 timer	200 ms
20 input bits, 10 outputs bits, 20 flags and 20 timer	390 ms

Table 2-2 Scan time on Siemens LOGO!