

# PLC-ANALYZER pro 6

PLC-Logic analysis in no time

## Driver Addendum



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PLC-driver

**BOSCH CL**

Programming interface (BUEP19E)



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# PLC-ANALYZER pro 6 - Driver Addendum

## BOSCH CL - programming interface (BUEP19E)


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## Signal source

### BOSCH CL

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

- BOSCH CL – programming interface

With the PLC driver BOSCH CL – programming interface PLC signals can be acquired through the serial communication port of the PLC.

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 programming unit (or your PC) for programming under BOSCH PROFI with the automation device, then you normally must do nothing else. Otherwise connect a free COM port (serial connection) of your programming unit (or PC) with the programming interface of the automation device.

### Installing additional software

No software is required in addition to the PLC-ANALYZER pro 6 basic module and the PLC driver.

## Configuration

After installing the driver you can change important parameters under *Properties*. If you have loaded several drivers, you can set the properties for each driver individually.

The screenshot shows a configuration window for a PLC driver named 'BOSCH'. The window has a 'Name' field containing 'BOSCH'. Below it is a 'Properties' section with a 'Destination' sub-section. The 'Destination' section contains five dropdown menus: 'Port' (COM3), 'Baudrate' (9600), 'Data bits' (7), 'Stop bits' (2), and 'Parity' (Even). Below these is a 'Connection test' button. At the bottom of the window is a 'Scan interval' dropdown menu set to 'minimal'.

**Fig. 1-1 Configuration of the PLC driver**

First enter a meaningful name. Then select under *Port* the PC COM port, where the connection cable is connected.

Set *Baudrate*, *Databits*, *Stopbits* and *Parity*. These parameters must be equal to the parameters which were set in the PLC interface module.

With *Connection test* you check whether a connection to the PLC can be established with the set parameters.

*Scan interval* lays down the interval between reading data from the PLC. For time insensitive applications e.g. temperatures a generous probe interval can be chosen. The signal files resulting are smaller.

After setting the communication properties, add the PLC signals to be recorded.

## Data acquisition

### Supported PLC models and CPUs

The following models of the BOSCH CL family are supported by the driver:

CL200, CL350, CL400, CL500



#### **WARNING**

Devices of the CL-500 series must have the softwareversion  $\geq 2.01$  to be compatible with the PLC driver.

### Recordable PLC addresses

The following table shows the addresses possible and the appropriate syntax:

Syntax	Type of address	Example
Ey.z	Input byte y, bit z	E17.3
EBy	Input byte y	EB17
EWx	Input word x	EW14
EDx	Input doubleword x	ED24
EZy	Input field y (byte)	EZ5
EZWy	Input field y (word)	EZW6
EZDy	Input field y (doubleword)	EDW16
Ay.z	Output byte y, bit z	A32.4
ABy	Output byte y	AB9
AWx	Output word x	AW4
ADx	Output doubleword x	AD12
AZy	Output field y (byte)	AZ8
AZWy	Output field y (word)	AZW10
AZDy	Output field y (double word)	AZW10
My.z	Flag byte y, bit z	M3.7
MBy	Flag byte y	MB250
MWx	Flag word x	MW24
MDx	Flag doubleword x	MD120
Sy.z	Special flag y, Bit z	S27.3
SMy	Special flag byte y	SM20
SMWx	Special flag word x	SMW4
SMDx	Special flag doubleword x	SMD14
Tx	Timer x	T2
Zx	Counter x	Z5

DYy	Databuffer byte y	DY7
DPx	Databuffer word x	DP8
yDBx	Data byte x from datablock y	2DB6
yDWx	Data word x from datablock y	2DW6
yDDx	Data doubleword x from datablock y	9DD12
SYy	System area y (byte)	SY50
SWx	System area x (word)	SW51

Table 1-1 Address-Syntax BOSCH CL

**NOTE**

Use addresses only, which are in the range of addresses of your automation instrument. If areas are selected, which are not defined, then undefined values are returned.

Be sure that a data block, from which you want to read a data word, really does exist in the PLC-program. Otherwise it could be possible, that recording the data block or data word will influence the automation instrument or the PLC-program negatively.

**NOTE**

The automation devices of the BOSCH-CL family allow only byte-oriented data acquisition. PLC-ANALYZER pro 5 automatically converts a given bit address to a byte address. All bits are available for display.

## Number of recordable addresses

Up to 25 addresses can be recorded. An address is a byte or word address. This means up to 200 bits (25 x 8 Bit E/A/M/S) can be recorded simultaneously.

## Time behaviour and particularities

The interval between scan transfer from the BOSCH PLC to the computer depends on transmission speed (baudrate) and on the number of signals being recorded:

With the following formula you can calculate the scan intervals approximately:

Scan-interval at 19200 Baud = 47,0 ms + n \* 2,5 ms

Scan- interval at 38400 Baud = 27,5 ms + n \* 1,6 ms

Scan- interval at 57600 Baud = 20,5 ms + n \* 1,2 ms

n = number of recorded signal bytes or signal words.

The following table shows typical scan times for a BOSCH CL 400:

<b>Scandata</b>	<b>19200Baud</b>	<b>38400 Baud</b>	<b>57600 Baud</b>
1 Byte	49,5 ms	29,0 ms	21,5 ms
2 Bytes	52,5 ms	30,5 ms	23,0 ms
4 Bytes	57,5 ms	33,5 ms	25,5 ms
1 Word	49,5 ms	29,0 ms	21,5 ms
4 Bytes + 4 Words	68,0 ms	40,5 ms	29,5 ms
12 Bytes + 10 Words + 3 Timer	112 ms	65,5 ms	49,0 ms

**Table 1-2 Scan rates Bosch CL**