VIPA Software

PLC-Tool V7.0.2 | Manual

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VIPA art of automation

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Note

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- 2004/108/EC Electromagnetic Compatibility Directive
- 2006/95/EC Low Voltage Directive

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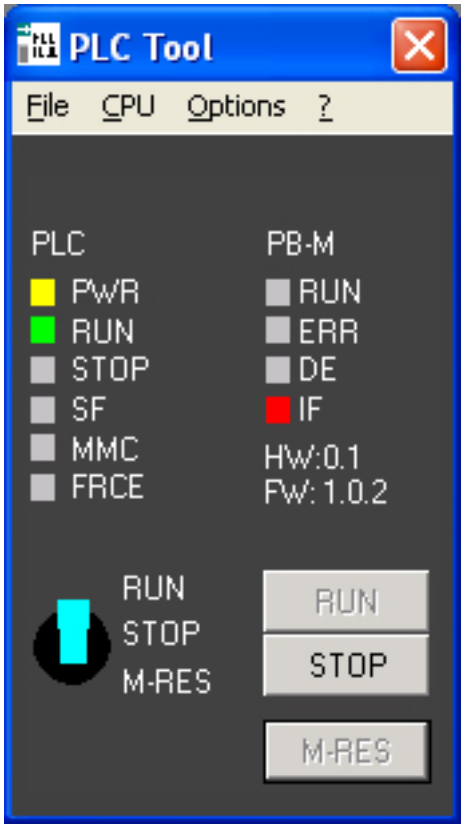
In General

Overview

PLC-Tool

PLC-Tool is a program for operating the VIPA CPU 51xS.

The OPC-Server is required for communicating with the CPU. The VIPA OPC-Server has to be installed on the PC. The PLC-Tool enables you to "talk" to external CPUs, which are connected via MPI to the serial interface of the PC.



The operating surface (see figure above), which is a schematically top view of a CPU, serves for monitoring and operating the CPU. Here the status of the LEDs on the CPU as well as the position of the mode switch are shown.

Tray-Icon

When starting the program a small icon (Tray-Icon) in the windows tool bar will be installed.

The Tray-Icon also visualizes the status of the CPU. The example here shows the CPU in RUN status. The program can be started repeatedly in order to simultaneously operate and monitor several CPUs. For each connection to a CPU, you have to assign an own MPI or IP address.

Set up and run of program

Requirements

The installation of the VIPA OPC-Server is required when using PLC-Tool, as the required drivers for the PLC-Tool will be installed on your PC by installing the OPC-Server.

Operating system

The operation of the OPC-Server was tested on the following operating systems:

Windows XP Pro with SP3	32 bit
Windows XP Pro with SP3	64 bit
Windows Vista Ultimate with SP1*	32 bit
Windows Vista Ultimate with SP1*	64 bit
Windows Server 2003 R2 with SP2	32 bit
Windows Server 2003 R2 with SP2	64 bit
Windows Server 2008 R2	64 bit
Windows 7 Ultimate	32 bit
Windows 7 Ultimate	64 bit

*) This operating system is not recommended!

Set up

As the PLC-Tool is a component of the VIPA OPC-Server package, the PLC-Tool will be installed together with the OPC-Server during the standard set-up. The PLC-Tool can also be installed separately. The installation is supported by a setup-program.

Close all Windows programs before starting the setup program.

Insert the "ToolDemo CD". The overview will be loaded via the auto-start function of the CD. Chose "VIPA OPC-Server." From now on you will be guided through the installation.

Run of program

Start menu

In windows start menu please call **Vipa GmbH** > *OPC Server*. Then click on PLC-Tool.

Tool bar via Tray-Icon

As soon as the PLC-Tool starts, a tray-icon (mini symbol) is shown in the start tool bar.

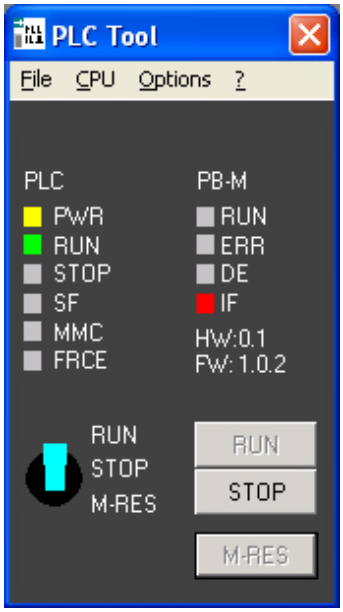
The PLC-Tool can be opened by double clicking onto that tray-icon.

PLC-Tool Operation

Operating Dialog

Open operating dialog

The operating dialog will be opened after starting the program.



Main menü

Status indicator CPU

Status indicator PROFIBUS master

Hardware release
Firmware release

Operating modes CPU

Selection of operating modes

Main menu

The menu of the program consists of the following entries:

File	**CPU**	**Options**	**?(Help)**
- Minimize	*- New connection …*	*- Language*	*- Content*
- Exit	*- Connection diagnosis …*	*- Create link*	*- Info*
	- Download WLD file	*- Always on top*	

Name of the PLC system

Here the name of your PLC system is shown. You can enter the name into the dialog box CPU > *New connection*.

Status indicators

The LED states of the corresponding CPU are copied into the status indicators. The set up of the status indicator depends on the CPU in use. As long as there is no connection to the CPU, the status indicator is deactivated. Additionally there is a status indication in the tool bar of your windows-system (tray-icon).

Operating mode switch

The push buttons, which are accordingly to the operating mode either activated or deactivated, serve for adjusting the operating mode of the CPU. Additionally the physical status of the operating mode switch is shown on the desk top in form of a switch.

Structure of menu

File

Minimize
By using the command "minimize" the operating dialog will be closed. The program continues actively and will be stored as icon (tray-icon) on the tool bar.

Exit
Herewith the program will be stopped and the tray-icon deleted from the tool bar.

CPU

New connection
With this command a dialog box will be opened. You can specify your connection to the CPU within this dialog box.

Connection diagnosis
When using this command a dialog box is opened, which gives information regarding the effective connection.

Download WLD file
This function allows you to transfer wld files to the module.

Options

Language
When marking this command, a submenu containing a list of available languages for the surface is being opened. The active language is marked with a hook. The language on the program surface can be changed by clicking on another language.

Note!
As long as your operating system does not support languages, these languages will be shown as deactivated. The languages do exist, but it is not possible to choose them.

Create link
Via setting up a link you can set up a link for your CPU connection, which is currently active. In the dialog box you have to mention, where you stored it.

Always on top
This function always puts the operating dialog onto the top level of the monitor. So, the window is always visible, even then, when you are working with different applications. This function is marked with a hook, if active. By clicking onto this function – it can be deactivated again.

? (Help)

Content
This command opens the manual of the PLC-Tool in the PDF format (Acrobat Reader).

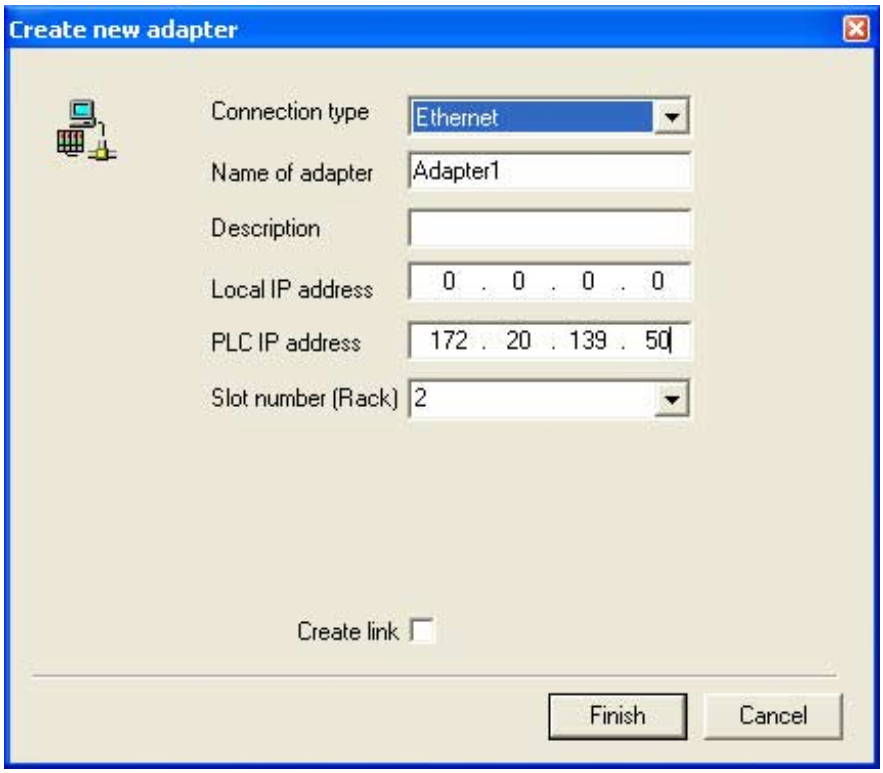
Info
Via *information* you will obtain details about revision date of the PLC-Tool and copyright.

Use of PLC-Tool

How to connect the CPU

Dialog box

Below **CPU** > *New connection* the following dialog window is opened:



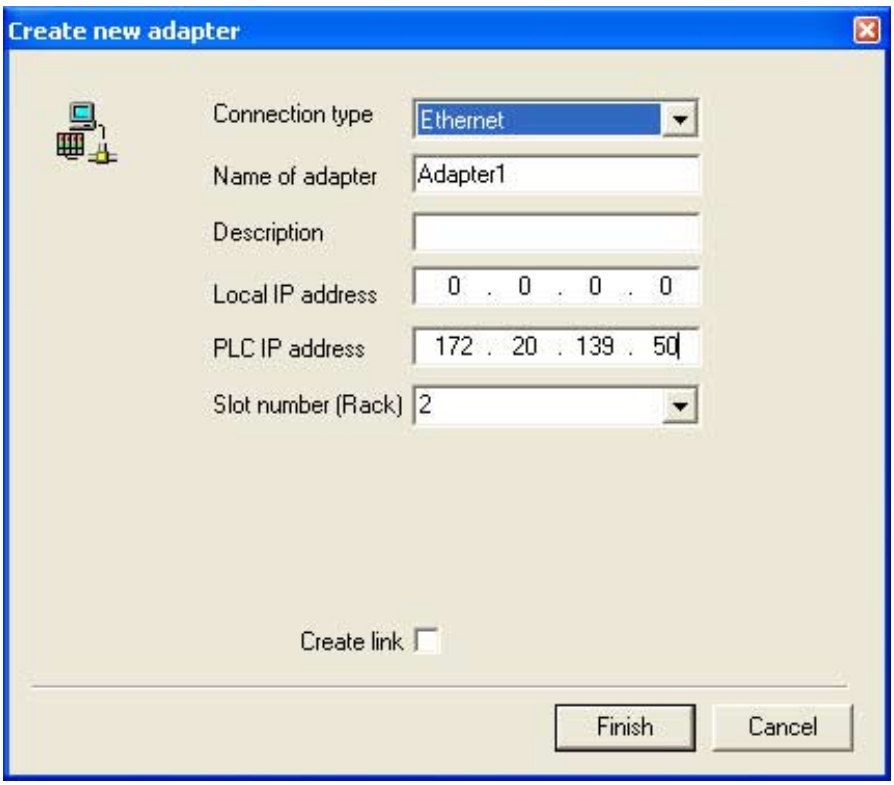
This dialog box gives you the option to enter the connection parameters for your CPU.

Chose the c*onnection type* - "Ethernet" or "MPI".

Connection type Ethernet

To access the CPU 51xS set *Connection type* to "Ethernet".

The VIPA Slot CPU 51xS is connected to the PC over an own Ethernet adapter. The CPU communicates with the PLC-Tool via TCP/IP.



Name of adapter

Please name it uniquely! The name should signify the PLC system in which your CPU works, e.g. "mixer".

Description

Into this dialog box, you can insert an additional description, which explains your system more specifically. The name assign here will be given as dialog title or as "tool-tip", if you point the mouse at the "Tray Icon". If you don't assign a description, then the name of the adapter will be given as "tool-tip".

Local IP address

If the CPU 51xS slot card and PLC-Tool are at the same PC, please enter here the IP address of the Ethernet part of the CPU 51xS.

If you want to access the CPU 51xS from an external PC via Ethernet, so you have to enter the IP address of the network card of the external PC. Additionally you have to set the routing to the CPU 51xS slot card in the target PC and to enter this route in the external PC. Details can be find in the manual of the VIPA CPU 51xS.

PLC IP address

Please enter here the IP address of the CPU part of the slot card.

Slot number (Rack)

Keep this parameter at 2.

Finish

As soon as you click operating push button [Finish], a connection set up to your CPU is in process.

Note!

The adjustments made in the dialog box are only of temporary existence.

As soon as you close the PLC-Tool, your entries will be deleted. For securing your settings you should secure your data as a link via **Options** > *Create link*.

Connection type MPI

Select the *connection type* "MPI" for CPUs which shall communicate via MPI with the PLC tool.

Name of adapter

Please name it uniquely! The name should signify the PLC system, in which your CPU works, e.g. "mixer".

Description

Into this dialog box, you can insert an additional description, which explains your system more specifically. The name assign here will be given as tool-tip. If you don't assign a description – then the name of the adapter will be given as "tool-tip".

Port

Adjust the serial port here, on which your CPU is connected via MPI. Presetting is COM1.

Note!

When using a CPU 51xPCI, you have to adjust the proper virtual COM-port, which is automatically assigned to the PCI bus card.

Baudrate

Select the Baud rate of the COM-port. 38400 is pre-adjusted.

Busbaudrate

The bus baud rate is adjusted to 187500 (fixed).

Own MPI-number	Please assign the own MPI number of the PLC-Tool on the MPI-bus. Address 31 is pre-adjusted. Don't choose address 0! This is used as pre-adjustment of PU-software.
MPI-number of the PLC	Adjust the MPI-address of the CPU! Address 2 is pre-adjusted.
Max. MPI slave No	Please adjust the highest MPI-address on the bus. Value 31 is pre-adjusted.
Finish	As soon as you click operating push button [Finish], a connection set up to your CPU is in process.

Note!

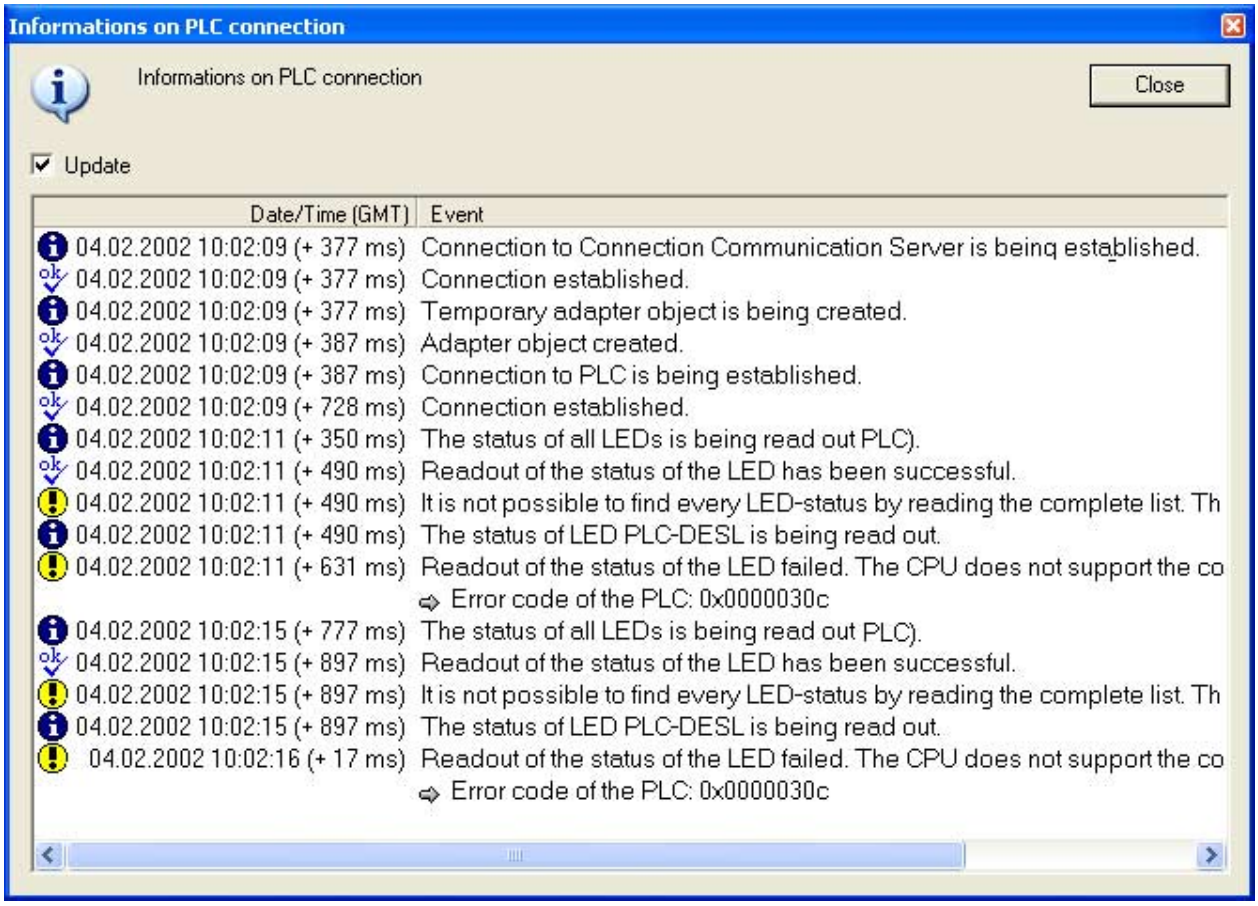
The adjustments made in the dialog box are only of temporary.

As soon as you close the PLC-Tool, your entries will be deleted. For securing your settings you should secure your data as of a link via **options** > *create link*.

Connection diagnosis

Dialog box

The following dialog box will be opened under **CPU** > *connection diagnosis*:



This dialog box gives information about the effective connection.

Protocol of Procedures

Similar to the event protocol of windows for indicating diagnosis data three procedure modes are used and are shown via a proper symbol.

The symbols have the following meaning:

A procedure was successfully finished.

A procedure is in process.

While in process, an error has occurred.

Create link

Dialog box

When clicking **Options** > C*reate link* you reach a dialog box setting up a link. By starting the program via that link the PLC-Tool is being started and is automatically setting up the stored connection.

It's possible to enter the following inputs for the link, which has to be created.

Link directory

The list box has a number of directories from the start menu as well as the desktop.
Select the requested file for the link with your mouse.
Via the entry "another folder" you can insert any other file for the link. For this a standard dialog for a new folder is being opened.

Adapter

Via this selection-list you can see the connections which are already set up. This list is equivalent to the list in menu **CPU**.

Language

In the menu **Options** > L*anguage* various languages are listed. Via selection list you have the option to select one of these languages you prefer for the link and confirm it by mouse click.

Hidden (as icon shown in the tool bar)

By clicking this option the program, that will be started via the link, will not be maximized, but will only be started as icon in the tool bar.

Always on top

Through this option the program will always be above all other programs on the monitor when starting via this link.

Note!
By saving your link in auto start (all users) with a setting "hidden" the PCL-Tool is being started and secured as tray icon on the tool bar as soon your windows system is getting started.

Change of operating mode

Operating mode switch

The effective operation mode is indicated by LEDs.

The effective position of the operating mode switch on the CPU is visualized by a graphic in the PLC-Tool.

The switch has the following positions:

The operating mode switch of the CPU in RUN modus.

The operating mode switch of the CPU is in STOP modus.

M-RES (total delete) - the CPU is totally deleted.

Push buttons

Next to the operating mode switch there are three push buttons, by which the CPU can be positioned into the proper operation mode.

T**he following push buttons can be operated:**

The CPU will be set into RUN modus.

The CPU will be set into STOP modus.

The CPU will be totally deleted.

Note!

The push buttons are released or disabled for operation depending on the current operating mode (LED) and the effective position of the operating mode switch. Thereby, you can only use the push buttons, which are useful for the current situation.

Tray-Icon

Each entity of the program will be installed by itself after starting as tray icon located in the Windows toolbar. After finishing the program, the tray icon will be deleted.

The tray icon has the following formats according to the operating mode of the CPU:

CPU is in RUN modus.

CPU is in start-up (changing from STOP into RUN).

CPU is in STOP modus.

Status of CPU unknown (no connection).

Tool tip

When strolling over the tray icon with the mouse a small information window (tool tip) with the name of the adapter will be displayed.

The dialog is being opened by double-clicking on the symbol.

Right mouse click onto the symbol opens a menu, over which the dialog can be called.

Additionally the finishing of the program is offered via the menu.

Status indication

LEDs

For status indication, the PLC-Tool has LED-rows for the CPU and for the PROFIBUS master. Application and different colors can be find in below mentioned columns. For a detailed description of the LEDs please refer to the manual for the respective CPU!

Not all LEDs listed below always have to be indicated. In fact, the PLC-Tool indicates the LEDs only which enable the PLC-Tool to read information from the CPU.

Status LEDs CPU	**Description**	**Color**	**Meaning**
	PWR	yellow	CPU is supplied with voltage.
	RUN	green	CPU is in RUN status. If LED flashing, CPU is in start up.
	STOP	red	CPU is in STOP status.
	SF	red	Lights up when system error occurs.
	MMC	red	Flashes when access to MMC.
	FRCE	yellow	Lights up as soon as variables are fixed.
	DESL	yellow	Indicates PROFIBUS slave activity as long as the integrated PROFIBUS master is in the slave mode.

Status of LEDs PROFIBUS master	**Description**	**Color**	**Meaning**
	RUN	green	PROFIBUS master in operation. If LED flashes, PROFIBUS master in start-up.
	ERR	red	Lights up when breakdown of slave.
	DE	yellow	DE (Date exchange) indicates communication via PROFIBUS.
	IF	red	initializing error when parameterization is faulty.

Note!

Please note, that depending on the connected CPU type - frequently not all a.m. LEDs are visible.