

TELE-PROFessional-II (TP-II) user manual

(english)



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1 Description

The TELE-Network devices were developed especially for the remote maintenance of plc-systems. This means that the device is geared completely to industrial necessity, from its mechanical configuration to its handling. The compatibility of the TELE-Network devices with the original programming tools of the respective plc-manufacturer has highest priority. Their connection mechanics, pin seizure, and electrical data meet the specifications of the respective controls. Thus, users can work directly and without special adapters with the normal cables of the devices they want to connect, like for example PGs and control units.

All TELE-Network devices have the same hardware structure. The complete electronics are integrated in a metal casing.



The operation of these remote maintenance units is only allowed if a supervising person is present who can intervene in the installation at any time. Please do not intervene in running programmes without visual communication or control.

Before installing the TELE-LINK-Network devices, please connect them by all means with earthing PE at the casing or at the screw terminal!

Please read the user's manual closely before installing the device. There is no responsibility taken for damages due to incorrect connection or handling.

1.1 Specials to TELE-Prof-II

The TELE-PROFessional-II can be connected with the integrated 33K6 V42-BIS HIGH-SPEED-Modem direct to the telephone connector of your local telephone provider and at every analogue port of your telephone system. You can connect this device also to a digital connector, ISDN S0-port. The provided protocol is DSS1 (Euro-ISDN) or 1TR6 (national ISDN).

To connect a plc type, the device has the correct plug on board. For teleservice a S5 plc you use the additional S5-Kabel for connect the TELE-PROFessional direct to the programming port of this plc. You can connect also to the 15pin female plug a PG or PC to communicate with the integrated multiplexer. Or, in the office, you can connect direct your PG or PC with the correct interface cable to this port. If you want to connect the device to a S7 plc, you use the integrated 9pin female plug. With this port, you are able to make connections to MPI- and Profibus with baudrates from 19K2 up to 12 MBaud. For S7-200 you have to use a RS232-PPI-cable like the MPI/PPI-cable connected on the port PLC-V24.

The connection to a not provided plc is also possible. For this purpose, the device has 2 9pin D-SUB plugs, one male the other female. From the PC you can connect to the TELE-PROFessional with a standard serial cable, 9pin 1to1. The other plug (male) has the same pinning like a PC, so you connect the plc with its own programming cable.

The device has also 2 USB-ports. For example, you can connect a memory stick (in the moment not provided) for the extension of the memory of the device. The provided standard of the usb-port is USB1.1. Or, you can use the 2 PCMCIA-Slots (only for version -H) for some special functions. You can connect a Handy to the serial 9pin male port. You use for this the standard download cable of the handy. If you make S7-teleservice, you don't need this port, because you have connected the plc to the on board mpi/profibus-port. For teleservice of the S5, there must be some changes. The plc is not connected to the PLC-port, it is connect with the cable CP-Kabel, article number 9359-90 to the multiplexed PG-port. It is very important, that the handy has an own number for this data transfer, you need for this a special kind of the contract with your provider.

The TELE-PROFessional-II is connectable with a patch-cable to the Ethernet. So, you can make a prolongation of your home Ethernet with the Ethernet of the plc side. This function will be called "routing". So, you can reach plc or pc they are connected to this network.

The device can be fastened directly to the switchboard. Fixing straps for the Hut- and C- contact rail are optionally available.

1.2 Features

- compatible with all SIMATIC-S5-PLC's
 - compatible with SIMATIC-S7-300/400-plc (connection of PLC-TELE by S7 via standard MPI-cable with the MPI-connectors or the cable with article number 9379.1)
 - compatible with SIMATIC-S7-200-plc (connection of PLC-TELE by S7 via MPI/PPI-cable or ppi-adapter)
 - ONLINE with the plc at the customer in a few seconds
 - suitable for industrial use and in agreement with CE
 - integrated HIGH-SPEED-modem with LineQualityControl-Functions, shorten LQM
 - integrated ISDN-connector for Euro-ISDN (DSS1) or 1TR6
 - 2 PCMCIA-slide-in unit for PCMCIA-plug-in cards (only for version -H)
 - can be operated by all original and compatible programming devices
 - second interface; select either Muiltplex operation for the operation of a 2nd PG / PC / control device / ...or as a connection for a 2nd plc / CP for L1 / L2 / H1/ ... from the PG-TELE, PLC 1 or PLC 2 can be switched only for S5-devices
- only for S5-devices**
- supports the operation at the H1, L1, and L2 with reference to bus-dialling
 - supports the operation KOR/MUX of Siemens, as well as PG-BUS
 - operation software is saved in the flash memory which makes the updating of the software easier
 - absolutely simple to set parameter values
 - module which checks all the device functions and the voltage supply
 - the electronics to the telephone network, to the external voltage supply, to the plc and to the programming device are dc-insulated.
 - 24V DC 15VA with optional power supply for D and USA
 - easy mounting into the switchboard
 - tough sheet-steel casing with a flange
 - circuit arrangement that fits the EMV
 - easy handling because of menu drive and LCD-display in the uncoded text
 - easy and fast configuration because of the menu item "first configuration"
 - in the PG, a software driver is not necessary; the complete handling is taken over by the TELE-PROFessional-II (after dialling the target system, the plc is "on your desk" inclusively the interface-cable). You communicate only "serial" with port PG-RS232.
 - only one device for several controls:

Siemens S5 & S7

AEG

Allen Bradley

Bosch

Mitsubishi

Klöckner Moeller

GE Fanuc

Selectron
Tele-Mechanique Premium TSX57

- safe data transmission because of a multiply protected data protocol, e.g. modules are only transmitted to the plc after they have been checked for their correctness
- all PG-functions can be carried out via the telephone line or the portable phone
- world-wide use possible, connection to GSM-net optional
- high data protection because of multistage password levels
- optimisation of telephone costs because of the recall function
- telephone register for 197 phone numbers is integrated into the TELE-device; this guarantees quick and easy calling of the desired target system
- compatible world-wide to all TELE-network devices
- software updates and options transmittable by the telephone line
- update and hotline service are for free
- integrated Web-Browser for configuration the device
- coupling via VPN
- coupling via ethernet

1.3 U.S. FCC Rules respect to versions with U.S. modem

This equipment complies with Part 68 of the FCC Rules. On the soldering side of this equipment is a label that contains, among other information, the FCC Registration Number and Ringer Equivalence Number (REN) for this equipment. You must, upon request, provide this information to your telephone company.

This equipment uses RJ12 plugs.

An FCC compliant telephone cord and modular plug are provided with this equipment. This equipment is designed to be connected to the telephone network or promises wiring using a compatible modular jack which is part 68 compliant. See installation instructions for details.

The REN is useful to determine the quantity of devices you may connect to your telephone line and still have all those devices ring when your telephone number is called. In most, but not all areas, the sum of the REN's of all devices connected to one line should not exceed five (5.0). To be certain of the number of devices you may connect to your line, as determined by the REN, you should contact your local telephone company to determine the maximum REN for your calling area.

If your telephone equipment causes harm to the telephone network, the Telephone Company may discontinue your service temporarily. If possible, they will notify you in advance. But if advance notice is not practical, you will be notified as soon as possible. You will be informed of your right to file a complaint with the FCC.

Your telephone company may make changes in its facilities, equipment, operations or procedures that could affect the proper functioning of your equipment. If they do, you will be notified in advance to give you an opportunity to maintain uninterrupted telephone service.

If you experience trouble with this telephone equipment, please contact your dealer of this tele-network device, the telephone number is known by yourself, for information on obtaining service or repairs. The telephone company may ask that you disconnect this equipment from the network until the problem has been corrected or until you are sure that the equipment is not malfunctioning.

This equipment may not be used on coin service provided by the telephone company. Connection to party lines is subject to state tariffs.

2 System requirements

2.1 Operating system (s)

- Windows 98 + SE
- Windows ME/NT/2000
- Windows XP
- Windows Vista
- Windows 7

2.2 Software

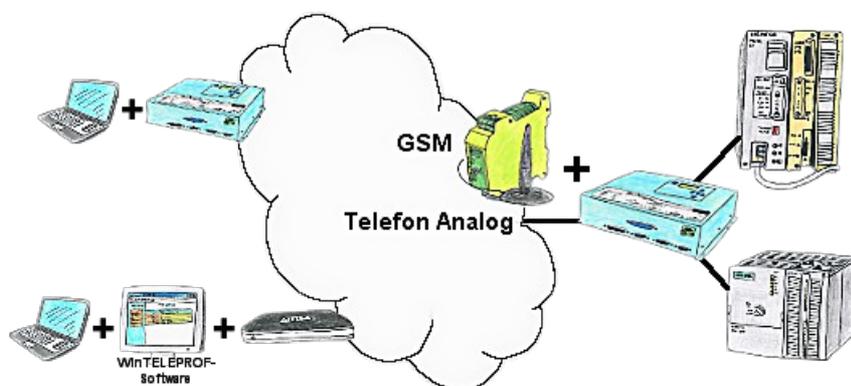
- PLC - programming software (eg PG2000, Step © 7, Step © 5, S7/S5 for Windows, Microwin)
- Tele - Manager software (for configuration of the Tele-Network Device)
- Win - TeleProf (optional as a replacement for the Tele-Prof in the office)

2.3 Hardware

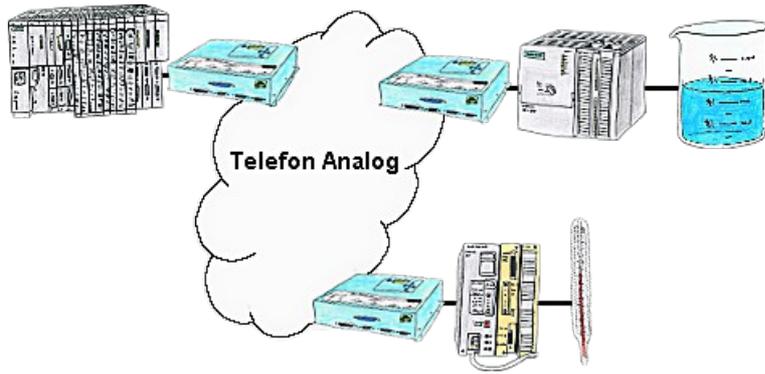
- 9-pin serial COM port. (on the computer)
- X4/X5 TTY interface on the S5-PLC
- RS485 interface on the S7 PLC
- TAE connector box of the Telekom (N-coded), generally 3x box:
NFN <=> Substation (modem, fax), telephone, Substation (depending on the variant)
- ISDN connection (S0-Bus) Euro-ISDN (DSS1) or National-ISDN (1TR6) (depending on the variant)
- GSM-Network (depending on the variant)
- 230V Power supply voltage for the included 24V - AC plug adapter
- or 24V DC with 350mA minimum load current

3 Connecting options

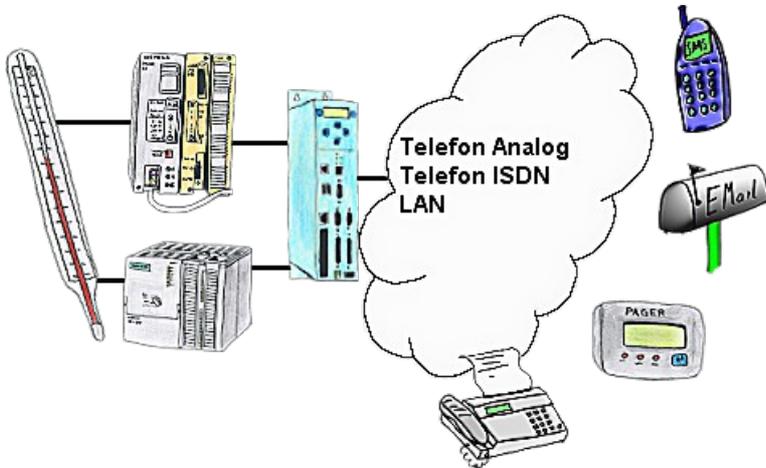
Remote maintenance / remote operation of PLC systems



PLC coupling (data exchange between PLCs)



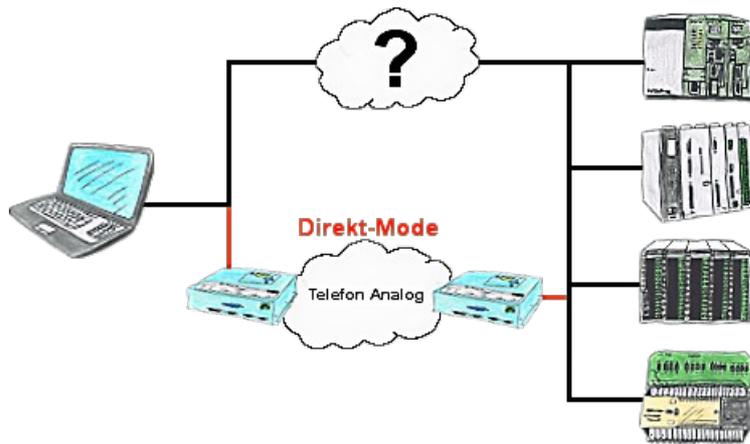
Error message dispatching triggered by the PLC



ASCII-Sending data to a PC



Direct Mode "extended serial interface"



3.1 Possible Connections for S7 for TP-II

3.1.1 S7-PLC connected to MPI/PROFIBUS-port of TP-II

3.1.1.1 connected to PG-TELE via RS232 to PG-V24-port

Office-side:

device-type: PG-TELE
 ip-address: 192.168.1.200
 use ethernet subnetmask: yes
 Subnet-mask: 255.255.255.0
 ISDN-ip: 172.16.0.3
 analogue-ip: 172.16.0.4
 router-mode: yes

machine-side:

device-type: PLC-S7-300/400
 ip-address: 192.168.2.200
 use ethernet subnetmask:: yes
 Subnet-mask: 255.255.255.0
 ISDN-ip: 172.16.0.1
 analogue-ip: 172.16.0.2
 router-mode: yes
 on board mpi-address: 0 (for e.g. is standard for a programming device)
 note: for Step7-software:
 PG/PD-Port PC-adaptor [MPI] or PC-adaptor [Profibus]
 Properties : correct COM-PORT of PC

3.1.1.2 PC connected to PG-TELE via ethernet to the ethernet-port

Office-side:

device-type: PG-TELE
ip-address: 192.168.1.200
use ethernet subnetmask: yes
Subnet-mask: 255.255.255.0
ISDN-ip: 172.16.0.3
analogue-ip: 172.16.0.4
router-mode: yes

machine-side:

device-type: AG-S7-300/400
ip-address: 192.168.2.200
use ethernet subnetmask:: yes
Subnet-mask: 255.255.255.0
ISDN-ip: 172.16.0.1
analogue-ip: 172.16.0.2
router-mode: yes
on board mpi-address: 1 (for e.g., Address must not already be used)

note: for PLC-TELE:

S7-CP-emulation - yes

Use default dest. mpi address - yes

Default dest. mpi-address - < here select the number of the direct connected plc >

PLC MPI-Addr. For FAX/SMS-Data - < here select the number of the direct connected plc >

For Step7-software:

Work with your project, use inside the project a virtual PLC and a virtual CP. You can only work with an existing project of the PLC!

The virtual PLC must have the mpi-address configured in the menu “item on board mpi-address” of the web interface of the TP-II. Not possible for PC-adapter [MPI] or PC-adapter [Profibus]

3.1.2 S7 connected to ethernet-port of PLC-TP-II

For this situation there will be no reason to solve this communication.

3.1.2.1 PC connected to PG-TELE via ethernet to the ethernet-port

Office side:

device type: PG-TELE
IP-address: 192.168.1.200
use ethernet subnetmask: yes
Subnet-mask: 255.255.255.0
Isdn ip: 172.16.0.3
analogue ip: 172.16.0.4
router mode: yes

machine side:

device type: AG-S7-300/400

IP-address: 192.168.2.200
use ethernet subnetmask: yes
Subnet-mask: 255.255.255.0
Isdn ip: 172.16.0.1
analogue ip: 172.16.0.2
router mode: JA
on board mpi-address:: 0 (for e.g. is standard for a programming device)
note: For Step7-software:

Work with your project of the plc. Please note the correct ip-addresses! Not possible for PC-adapter [MPI] or PC-adapter [Profibus]

4 Installation

4.1 MPI / Profibus connection

If you access with the device on S7-300/400-PLC, plug the MPI-cable (optionally available) in the 9-pin D-SUB (MPI / Profibus) to the connect with your programming interface of the Siemens-PLC.

For access to a S7-200 using a cable MPI / PPI in the mode "PPI" or a PC-PPI cable from the AG-V24-socket on the PLC.

4.2 PG-Connection

If the device is defined as PG-TELE, the connection or programming cable which is normally designed for the Siemens-control, is now either plugged in the 15pin D-SUB-socket or 9pin D-SUB-socket right next to it is connected to the serial interface of the PC with a 9pin 1to1 cable.

The 9pin and 15pin D-SUB-sockets right next to it are not used in this setting.

4.3 PCL-Connection

If the device is defined as AG-TELE, either the optionally available connection cable (interface cable V24<=>TTY) is plugged onto the 9pin D-SUB-socket or the optionally available connection cable is plugged onto the 15pin D-SUB-socket and is then connected to the programming interface of the Siemens-control. In contrast to PG-TELE, a programming system can now be connected either to the unused 15pin D-SUB-socket or to the unused 9pin D-SUB-socket. This means that the control can be accessed by phone from outside and that the co-worker at the face can simultaneously have access to the control with his programming tools.

4.4 LAN-connector

This connector is an autosensing 10/100 Mbit/s connector. For the connection to a Hub or a network connector, you should use a so-called patch-cable (both sided RJ-45, 1to1, shielded).

For the direct connection to a PC, you should use a cross-link-cable for this connection.

4.5 PCMCIA modem connection (only with version-H)

When inserting and ejecting the PCMCIA card please note, the card can only be changed if the device is off.

Eject:

PCMCIA header with ejector: By pressing the black lever eject the card pushed out about 1 cm from the insertion slot. Now you can remove it safely.

PCMCIA header without ejector: Pull out the PCMCIA card simply from the bay.

Insert:

Insert the card with the terminal block first into the PCMCIA slot. Do not force! If the card can not be inserted more than 6 cm, the card must be rotated.

PCMCIA header with ejector: The card is fully inserted, when the card snaps into the slot with a click and the eject lever is fully visible.

PCMCIA header with ejector: Insert the card until it engages noticeably in the contacts and is firmly inserted into the socket.

you can insert at any time a PCMCIA network card . However, this requires a minimum operating system version OS V0.42 and Firmware V7.94. The parameters are configured in the web server in menu item "Network". For more information, please visit the Documentation section "**Example of UMTS-coupling**".



ATTENTION:

For damages caused by improper use, we assume no responsibility.

4.6 Analogue-modem connector

When connecting the telephone, the cable with the black (TAE-)plug is plugged in the telephone socket (N-contact). Please note that with some plugs a locking device has to be removed with a screwdriver in order to extract the plug from the TAE-socket. The other side, a so-called western-plug, has to be plugged, with the ejector up, in the small hole of the modem. You will hear how the locking device latches. In order to extract the western-plug, simply press down the locking lug and extract the plug.

It should be noted, that in the U.S. version of the modems are two possible connectors for the telephone cable. If you look from the rear, the cable must be plugged into the socket left. The right connector is connected through, and is suitable for connecting a telephone set to the same phone line.

4.7 Power connection

For the power supply to the device is either the included AC adapter or an existing local power supply with min. 24V DC 350mA power connected to the 3-pin green plug. In the included AC plug adapter the power poles are marked with colored sleeves.

The PLUS-pole with the color "red", the MINUS pole with the color "blue". Connect the POSITIVE pole of the left screw terminal and the NEGATIVE pole on the right (outer) screw terminal. The middle connector is used to ground and must be connected to PE.

5 Control elements

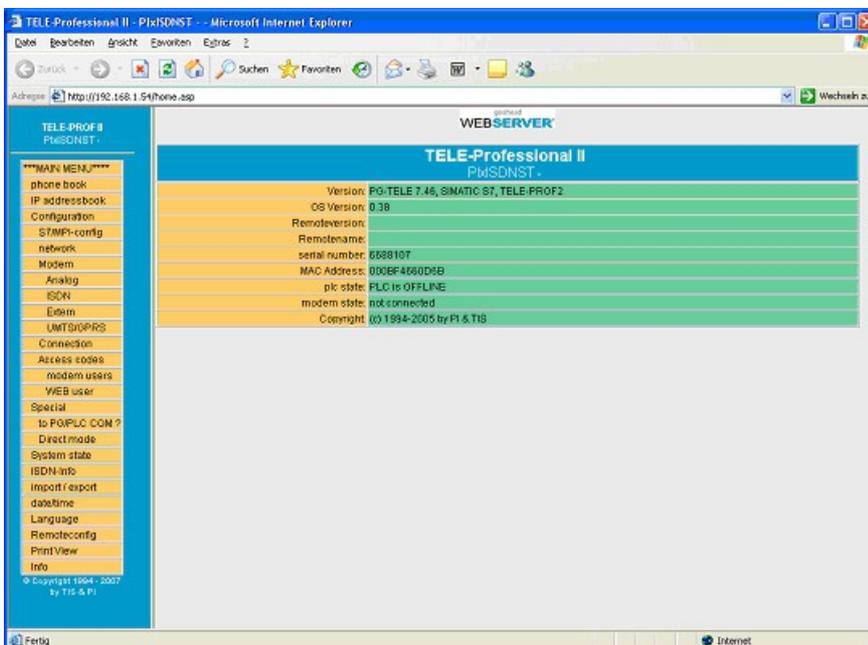
5.1 Web browser

1. prerequisite for configuration via Web browser is a correct IP-Address corresponding to your PC and a connection to a hub/switch or directly to your PC with a cross-over-cable. A configuration with a PC via the serial interface is not possible.

Start a Web browser of your choice (e.g. Internet Explorer) and type the IP-Adresse of your device into the address-field. The default value of the IP-Address for the TELE-PROFessional-II is 192.168.1.54, so you should enter the following address:

<http://192.168.1.54>

The Web-Server of the TELE-PROFessional-II will be started like following:



2. Left in the menu bar, you can select the configuration options that open in the main window of the browser.
3. In the main window of the TELE-Prof-II web server, you can now edit the selected configuration option.
4. Further steps and configuration of the TELE-Prof-II is described in the chapter „configuration“ .

5.2 Integrated Keypad



key	name	Description
	ESCAPE	Cancel of the currently executed function / Go one menu-level back. Cancel of the input (Input will not be stored).
	ENTER	Change of menu and confirm of input.
	LEFT	Go one menu-level back. Discarding input (Input will NOT be stored).
	RIGHT	Call Submenu
	UP	Selection of a menu item. Increase of a value.
	DOWN	Selection of a menu item. Decrease of a value.

ATTENTION:

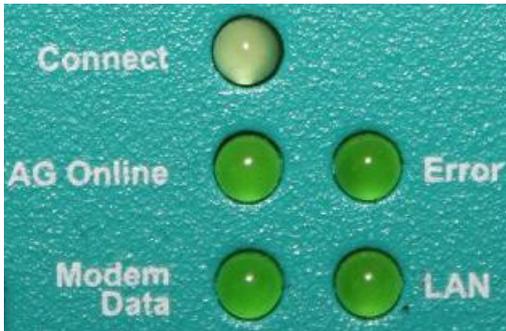
If the tele-network device doesn't recognize the keyboard input, the following causes are possible:

- At first, the communication between both modems is so bad, because the telephone-line is so bad, so the modems had to repeat more and more the same blocks of data, then there is not so much time to recognize the keyboard input. But when there is no problem with the telephone line more, the input of the keyboard is OK.
- You have a connection with a tele-network device, which modem doesn't work correctly. So your modem tries to send the data blocks to the other modem, but there is no response, and so it tries it the whole time. When you have this problem, your device has the same response as the first case. Remove the telephone plug from the device, so that the connection cuts off. When you have a lot of

time, you can press the key codes and wait a long time, you can see under INFO-REMOTEVERSION, and there you see nothing, so you know, that the device of the other side doesn't work correctly.

- You are at the PLC-TELE, and on the other side there is a force block or force variable, in progress you can't press any key, and the device does not the action you want. This is of secure purpose.

5.3 Status with LED



Connect (analog or ISDN)	O		
PLC/SPS data	O	O	Error
modem data	O	O	LAN

With the Connect-LED the user knows, if there is an active telephone connection, whether analogue or digital.

The PLC/SPS-Data-LED signals the user that data will be transferred to or from the connected PLC. This LED is only flashing while data will be transferred.

If there will be transferred data from device to device with modem, this Modem-Data-LED will be flashed.

If there is any error inside of the device, or an error with the communication, the Error-LED is on. For further information look at the display.

If you have connected the device to the ethernet, this LED will be ON. If you have connected the device to the Ethernet, and the LED is OFF, you should proof the connection or the cable. While you send data with Ethernet, the LED will be flashed.

6 Implementing

6.1 Quick Configuration / Quick Entrance

After mounting the device into the switchboard, or placing on the table, at first you have to connect the ground connector on the right side of the device with the ground pin of the switchboard. Then you connect on the backside of the device the telephone lead into the correct connector and then connect the power 24V with the green connector on the front side. After the device is booting, you

can read in the display „not connected“, so you can begin with the first configuration.
In order to configure the TELE-Network devices quickly and safely, there is a special menu item in the menu tree (see chapter 413H413H419H419H419H5.2.2 414H414H420H420H420H *Menutree*). This menu item is called “First config“ and its menu structure is shown in the following:

First configuration:

Language:

German
English

Device type:

PCL-S5-TELE
PG-TELE
PCL-S5-KOR/MUX
PCL-S7 300/400
PCL-S7 200 9K6
PCL-S7 200 19K2
PCL-S5-F-TYPE
PCL-Pilz (Standard für PILZ-Steuerungen)
PCL-Allen-Bradley (Standard für AB-Steuerungen)

MPI OnBoard Y/N

Yes
No

MPI OnBoard Baud 9,6 kBit/s

19,2 kBit/s
45,45 kBit/s
93,75 kBit/s
187,5 kBit/s
500 kBit/s
750 kBit/s
1,5 MBit/s
3 Mbit/s
6 Mbit/s
12 Mbit/s

OnBoard MPI-Adr

000

MPI OnBoard HSA

15
31
63
126

Fix OnBoard Baud

Yes
No

MPI/Profibus

MPI-Bus
Profi DP/Std.
Profi DP/FMS

MPI-cable Baud

19200 (Default)
38400
57600
115200

ISDN EAZ/MSN

0 - 9999999

Ethernet-IP

xxx.xxx.xxx.xxx

ISDN IP-Adresse

xxx.xxx.xxx.xxx

Analog IP-Adr.

xxx.xxx.xxx.xxx

Analogue modem

German(complex) (default)
USA(600R-System)

Dialmode

Tone
Pulse

Extension-Mode

Yes
No

Outline-Code:

0,1,2,3,4,5,6,7,8,9,!,"",/,>,#,X,W,*

Count of rings:

0,1,2,3,4,5

LANGUAGE:

- German menu drive in German
- English menu drive in English

DEVICE TYPE:

- PLC-S5-TELE The device is next to the plc-control and is connected to it
- PLC-TELE The device is next to the programming device and is connected to it
- AG-S5-KOR/MUX The device is not connected directly to the plc but via a SIEMENS Multiplexer (PG-BUS-dialling), via a coordinator (e.g. 923 C) or via the IBX-Bus (Bus system of PI with PG-BUS-dialling); (special type of PLC-TELE).
Attention! The built-in Multiplexer is not active in this operation mode!
- PLC-S7 300/400 This device is connected to a S7-300/400 plc
- PLC-S7 200 9K6 This device is connected to a S7-200 plc and communicates with 9600 Baud on port PLC-V24
- PLC-S7 200 19K2 This device is connected to a S7-200 plc and communicates with 19200 baud on port PLC-V24
- PLC-S5-F-TYPE This device is connected to S5 plc, especially a F-Type
- PLC-PILZ This device is connected to PILZ PSSxxx plc, you should connect the plc with its own programming cable.
- PLC-Allen-Bradley This device is connected to a Allen-Bradley SLC5 plc and communicates with the DH485 or DF-1 mode.

MPI OnBoard J/N:

- Yes The build in mpi/profibus-connector is activated and be used.
- No The build in mpi/profibus-connector is deactivated.

MPI OnBoard Baud:

With this menu item, you can define the speed of the connected mpi/profibus. Please check this baudrate because so there is no communication possible or your bus system will be stopped.

OnBoard MPI-Adr:

With this menu item you define the address of the TELE-PROFessional-II as a bus client. This address must be a unused address for the bus. If you use the default address "0", be shure, that no PG with this address will be in the bus, too.
If you start a connection from the office to the plc, the devices uses the

address, you configured in your programming software. If your tele-service is ready, the device uses the configured address.

MPI OnBoard HSA:

With this menu item, you configure the HSA (highest station address) of the connected bus. Please note, that a too big HSA will slow down the speed of communication to the bus. So, in your software, there will be the baudrate for the bus system configured. Have you configured the “fix baudrate” to No, so, the baudrate from the programming software is used. If you’re a beginning to program a plc it is better for you, because so you are able to change the baudrate as you like. Have you configured this item to “Yes”, the device uses the configured baudrate of the TELE-PROFessional-II and ignores the baudrate from the software.

Fix OnBoard Baud:

While you have tele-service to a plc, the PLC-Tele is for your software a PC/MPI-adapter. So, in this driver you can configure the baudrate of your bus system. Have you configured the “fix baudrate” to “No”, the device gets the baudrate from your software and will use it. This is an advantage for you, so you can change the baudrate from the office you want, and no one must change the configuration of the plc. If you have configured it to “Yes”, the TELE-PROFessional-II will use the baudrate of its own configuration. The advantage for this is, that you can’t define a baudrate greater than 1.5 MBaud in the programming software. So, you are connected to bus systems with baudrates 6 MBaud or 12MBaud and so, you can tele-service this bus systems. The baudrate is fixed.

MPI/Profibus:

- MPI-Bus
- Profi DP/Std.
- Profi DP/FMS

The connected bus-system is a MPI-bus

The connected bus-system is a profibus with the profil DP/Standard

The connected bus-system is a profibus with the profil DP/FMS

MPI-Kabel Baud:

The in this menu item configured baudrate is the baudrate the connected PC communicates with the PG-TELE. The siemens software only provides baudrate up to 38400, so you can use a tool called “mpi-speed” to setup the baudrate up to 115200 Baud. This baudrate you have to configure in your PG-TELE, too.

ISDN EAZ/MSN:

The so called EAZ/MSN is the device number of the TELE-PROFessional-II on this telephone plug. For the ISDN-S0-bus, every client must have this address, he will be recognized through this number. So, the TELE-PROFessional-II knows, that he will be meant and it will take the call. Often, the number of the telephone plug is also

this number. Please contact your supervisor of the telephone system, to get this information. So, he can also change the ISDN-property to modem, this will be needed for this telephone plug.

A special part is the system of Siemens, called HICOM. With a “optiset E ISDN adapter” you don’t need a MSN/EAZ number. If you have defined one, the device doesn’t work with this system.

Ethernet-IP:

If you want to use the TELE-PROFessional-II in your company network, you should configure a IP-address in this device. This IP-address is divided into 4 blocks, so you have to configure this address like 192.168.1.100. Between these 4 blocks you can change with ? and ? . The input will be finished with the ENTER-key.

ISDN-IP:

The communication between each device is a ppp-protocoll, so every device need a different ip-address. As you can connect with ISDN or analogue, so you need 2 different ip-addresses. So, every PG-TELE needs another address like the PLC-TELE. While, you don’t need a communication between PLC-TELE and other PLC-Tele (PLC-TELE-option), the addresses can be the same. Please configure this address like 172.16.1.1.

This address is also divided in 4 blocks. Between these 4 blocks you can change with ? and ? . The input will be finished with the ENTER-key.

Analog IP-Adr.:

The communication between each device is a ppp-protocoll, so every device need a different ip-address. As you can connect with ISDN or analogue, so you need 2 different ip-addresses. So, every PG-TELE needs another address like the PLC-TELE. While, you don’t need a communication between PLC-TELE and other PLC-Tele (PLC-TELE-option), the addresses can be the same. Please configure this address like 172.16.1.2.

This address is also divided in 4 blocks. Between these 4 blocks you can change with ? and ? . The input will be finished with the ENTER-key.

Analogue modem:

- German(complex)

The connected telephone system is complexed.

The connected telephone system is 600R. With this selection you should work in the USA and the other world, but not in Europe.

- USA(600R)

If the modem picks up but the modem noise is not hearable then you should change the modem type!

Dialmode:

- Tone The modem dials with the modern MFV-system, this means you hear while dialing a little melody.
- Pulse The modem dials with pulses, that means you hear while dialing the noise of a relais.

Extension mode:

- Yes The device is not connected directly to the line. You then need either a prefix number or a certain key combination to get to the line.
- No The device is either connected directly to the line, i.e. you do not need a prefix number in order to get a line or the device is within a private branch exchange and should call a partner within this system.

Outline Code:

With these possible figures you can config the device to get a telephon line:

0,1,2,3,4,5,6,7,8,9,!,“,“,/,>,#,X,W,*

Rings before Lifting:

- = 0 **Attention!**
With this adjustment, the modem does not pick up independently. With the menu item “pick up“ you have to make the modem pick up manually.
- = 1-5 Modem picks up after the adjusted number of rings.

6.2 Using the PLC-VCOM

(The PLC-VCOM is only needed if your module is not connected via the 9 pin COM port to the computer. For products with USB, Ethernet connection, etc., the PLC-VCOM is required)

1. Start the PLC - VCOM application (If it has not already started yet).
2. Click in the main window of the PLC-VCOM, in the status area “configure”. The configuration wizard will start.
3. It lists all the found modules / cables and the additional information’s such as IP address and MAC address of the module.
4. Choose the desired MPI cable and click „OK“ to go on.
5. If the connection is established the chosen cable is shown in the section state and on the left side you can see the status connected.
6. It also displays, the PLC-VCOM the IP address for the module and the IP address of the computer which is connected to the module.



If you have any problems with the use of PLC-VCOM software, go to the chapter PLC – VCOM and look there for operating instructions.

6.3 Programming software to use with direct access

After you have adjusted and connected the PLC-VCOM or the programming adapter to the COM-port on your computer, you will be able to connect with your programming software to the PLC and work with it.

How you have to adjust your programming software is described in the following points:

6.3.1 PG2000 für S7 (V5.10)

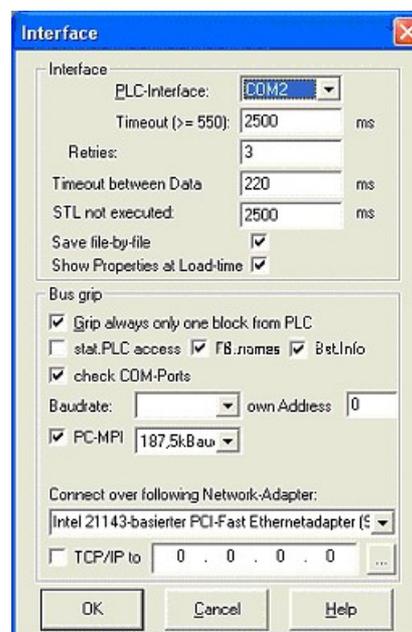
1. Start the PG 2000 software by using the desktop link or by using the application entry in the start menu.



2. Choose from "View" => "S7-300/400"

In the menu "Options" click "Interfaces"..

3. A dialog appears, in which you are able to set the "AG-Interface" (COM-port) in the section "Interfaces".



4. Configure the baud rate in the section "Bus access" to "19,2k". Below change the value for PC - MPI to "187,5kBaud".

5. Save your configuration by pressing "OK".



6. Now the software is ready to establish a connection to the PLC

Click the symbol “Open“ and afterwards press “PLC”.

Alternative you can click:
„File“ => „Open“ => „PLC“

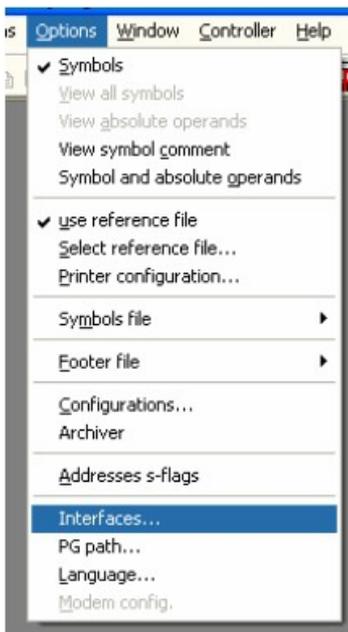
Mark	Baustein	Größe	Adresse	Bib.-Nr.	Bausteinname	
SG 000		128 W				zyklischer Bau
SFC 000		90 W			SET_CLK	Uhrzeit setzen
SFC 001		90 W			READ_CLK	Uhrzeit lesen
SFC 006		128 W			RD_SNINFO	Startinformation
SFC 020		92 W			BLKMOV	Variablen kopier
SFC 021		92 W			FILL	Variablen füll
SFC 022		96 W			CREAT_DB	Datenbaustein
SFC 023		90 W			DEL_DB	Löschen eines
SFC 024		94 W			TEST_DB	Testen eines D
SFC 036		98 W			MSG_FLT	Synchronisier
SFC 037		96 W			DMSK_FLT	Synchronisier
SFC 038		96 W			READ_ERR	Ereignisstatus
SFC 039		92 W			DE_RPT	Bearbeitung ne
SFC 040		92 W			EN_AIRT	Bearbeitung ne
SFC 041		98 W			DS_AIRT	Bearbeitung vo
SFC 042		98 W			EN_AIRT	Bearbeitung vo
SFC 043		98 W			RE_TRIGR	Zykluszeitüber
SFC 046		98 W			STP	CPU in Betrieb
SFC 047		98 W			WAIT	Vorbereitung v

The connection between PG 2000 and the PLC is now established.

A new window appears. Now you can edit the blocks in the PLC.

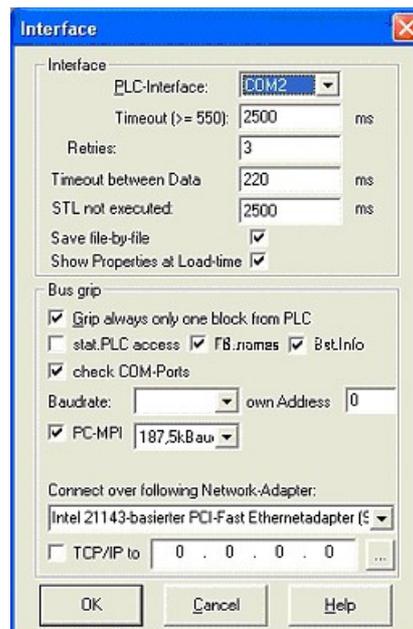
6.3.2 PG2000 für S5 (V5.10)

1. Start the PG 2000 software by using the desktop link or by using the application entry in the start menu.



2. Choose from menu "View" => "S5 155U-90 ..."

In the menu “Options“ click “Interfaces“.



3. A dialog appears. In the section “Interface“ you can configure the “PLC – Interface“ (COM – Port).

4. Set in the section "Bus grip" the tick "Grip allways only one block from PLC", "FB-names", "Bst. Info" and "check "COM-Ports"

5. Save your configuration by pressing "OK".



6. Now the software is ready to establish a connection to the PLC.

Click the symbol "Open" and afterwards press "PLC".

Alternative you can click "File" - "Open" - "PLC".

Mark	Baustein	Größe	Adresse	Bb-Nr	Bausteinname	
OB	001	128 W				zyklischer Bau
SFC	000	90 W			SET_CLK	Uhrzeit setzen
SFC	001	90 W			READ_CLK	Uhrzeit lesen
SFC	006	126 W			RD_SINFO	Startinformation
SFC	020	92 W			BLKMOV	Variable kopier
SFC	021	92 W			FLL	Variablenpolic
SFC	022	98 W			CREAT_DB	Datenbaustein
SFC	023	90 W			DEL_DB	Löschen eines
SFC	024	94 W			TEST_DB	Testen eines D
SFC	036	96 W			MSG_FLT	Synchronfehler
SFC	037	96 W			DIAG_FLT	Synchronfehler
SFC	038	96 W			READ_ERR	Ereignisdiagn
SFC	039	92 W			DIS_RT	Bearbeitung ne
SFC	040	92 W			ENURT	Bearbeitung ne
SFC	041	88 W			DS_ART	Bearbeitung vo
SFC	042	88 W			ENURT	Bearbeitung vo
SFC	043	86 W			RE_TRIGR	Zykluszeitüber
SFC	046	86 W			STP	CPU in Betriebs
SFC	047	88 W			WAIT	Verarbeitung v

The connection between PG 2000 and the PLC is now established.

A new window appears. Now you can edit the blocks in the PLC.

6.3.3 PSet PG/PC interface

This step is required for the following software:

=> TIA-Portal

=> SIMATIC Step© 7 Manager

=> Windows Control Center (WinCC) (v6.0)

=> Windows Control Center flexible 2004 (WinCC flexible) (v5.2.0.0)

=> ProTool/Pro (v6.0 + SP2)

=> Microwin 3.2



1. Open the system configuration by using the start menu.

2. Click on „Set PG/PC interface“.



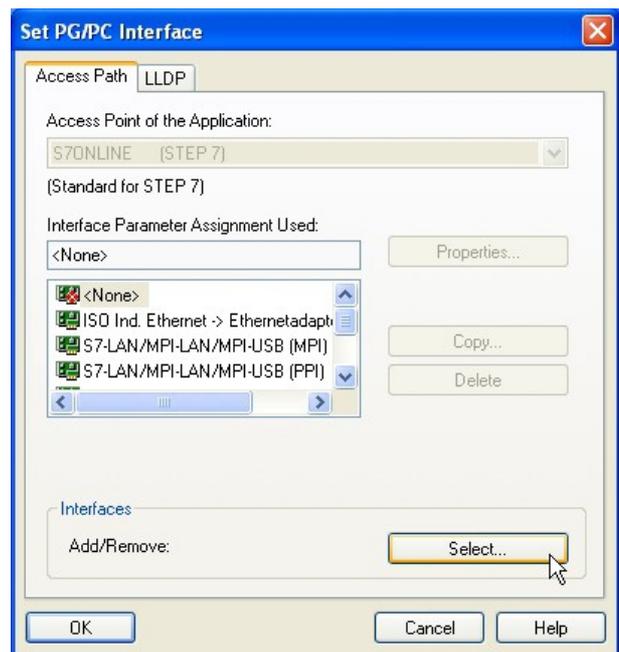
3. A Dialog with a list box named “Interface Parameter Assignment Used:” appears. This box should offer following entries

- TIC ETH/USB(MPI) or TIC ETH/USB.MPI.1
- TIC ETH/USB(Profibus) or TIC ETH/USB.Profibus.1
- TIC ETH/USB(PPI) or TIC ETH/USB.PPI.1

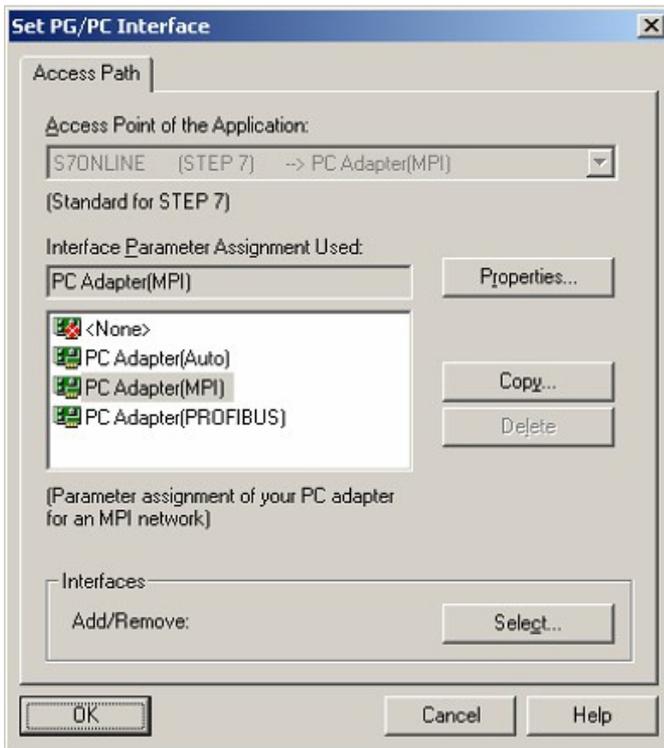
or some “TCP/IP” entries

If this is the case, please continue with the step MPI settings or Profibus settings.

If so not please install the "TIC-driver" on this PC and after a restart this entries must exist. If you want to install the TCP/IP-driver follow the link.



6.3.3.1 TCP/IP RFC1006 Communication



4. Press "Select" to add the RFC1006 required elements to the PG / PC - interface configuration.

5. In the dialog "Select", choose "TCP / IP" and click on "Install".

6. After successful installation, click "Close".

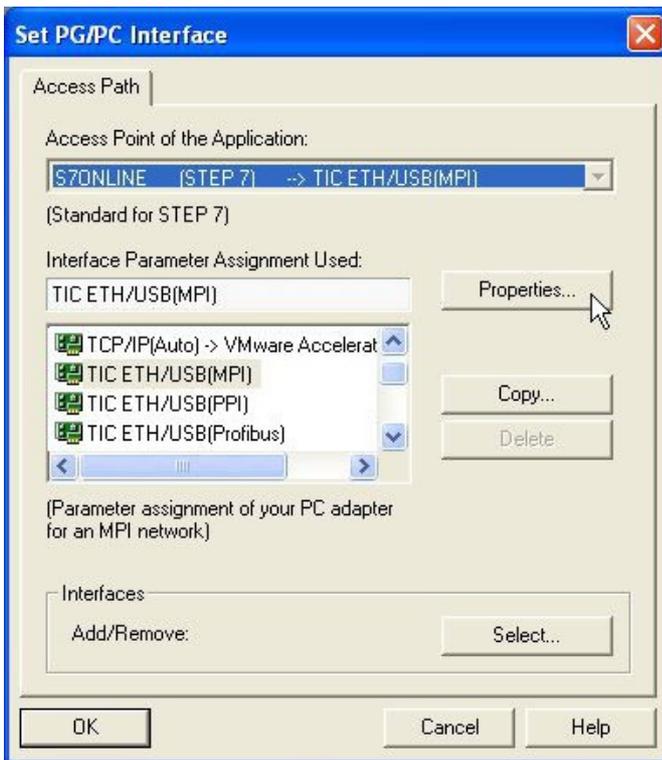
7. Back to the "Set PG/PC interface" dialog you will now find the desired entries called "PC - Adapter(Auto)" (not supported), "PC - Adapter(MPI)" and "PC - Adapter(PROFIBUS)". Now you are able to configure the bus.

If you want to use the "MPI" communication type go ahead with step MPI setting .

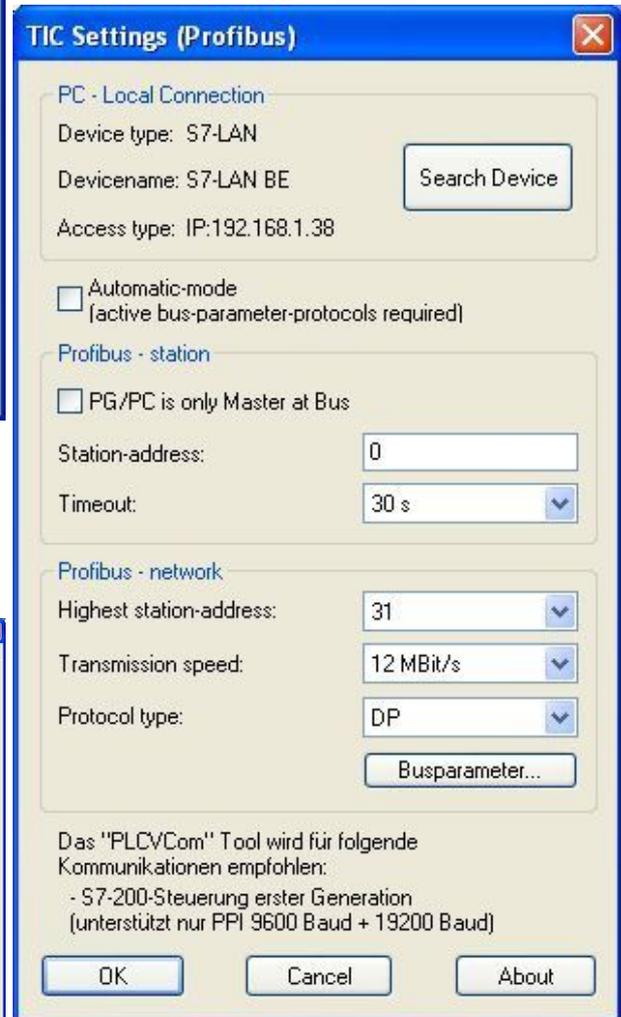
The settings for "PROFIBUS" is explained in Profibus setting .

6.3.3.2 MPI setting

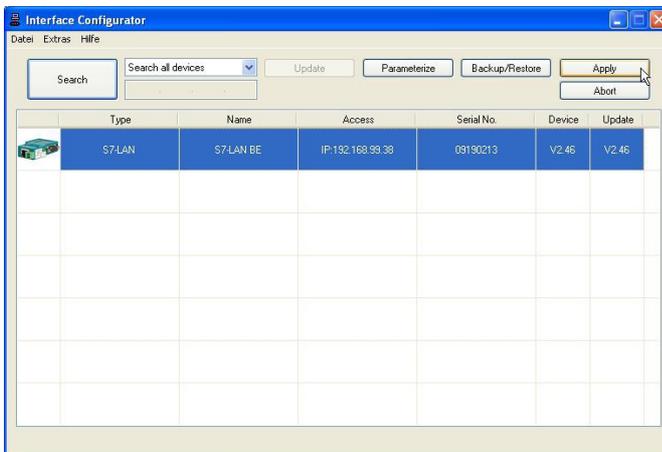
7. Select "TIC ETH/USB(MPI)" and click "Properties".



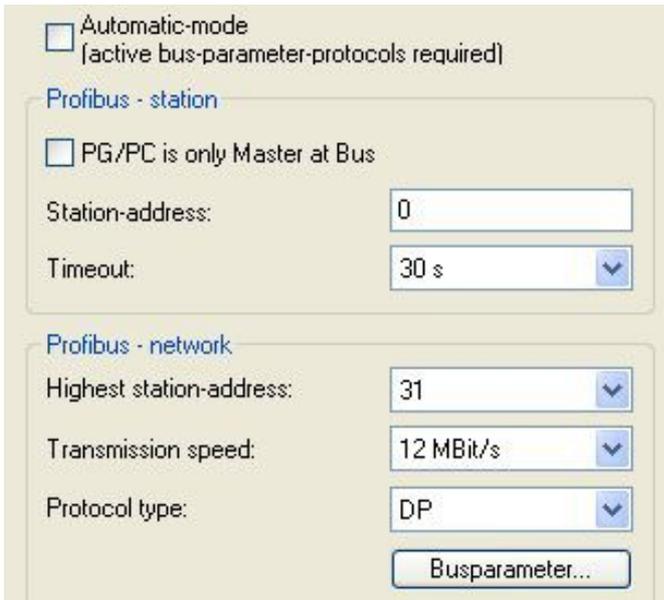
8. Open the properties dialog



9. If the device-type is not identical with your used device, search for your device with "Search Device". Select the device in the result windows and click on the button "Apply".

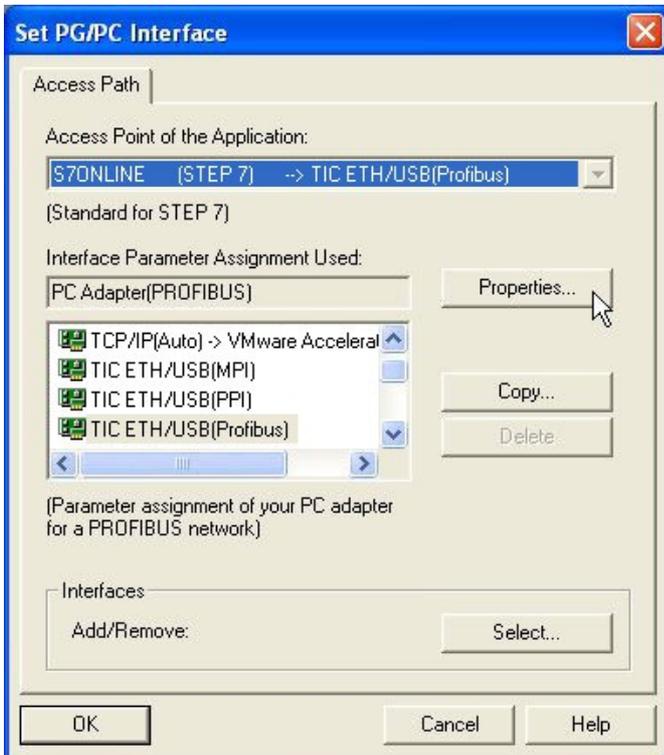


10. Activate the "Automatic-mode" when you will be sure, that the connected PLC sends cyclic bus-parameter-protocols. When not please configure the bus by hand.



11. Save your configuration with „OK“ and close the „Set PG/PC–interface“ dialog with „OK“.

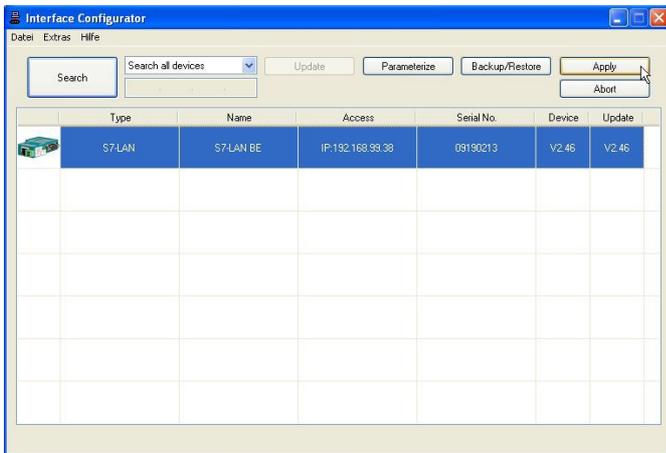
6.3.3.3 Profibus setting



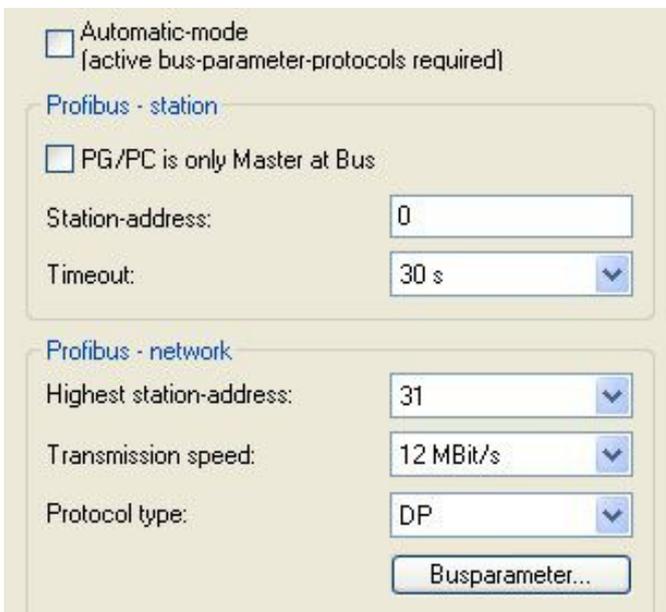
12. Mark the entry „TIC ETH/USB(PROFIBUS)“ and click on „Properties“.

13. Open the properties dialog

14. If the device-type is not identical with your used device, search for your device with "Search Device". Select the device in the result windows and click on the button "Apply".



15. Activate the "Automatic-mode" when you will be shure, that the connected PLC sends cyclic bus-parameter-protocols. When not please configure the bus by hand.

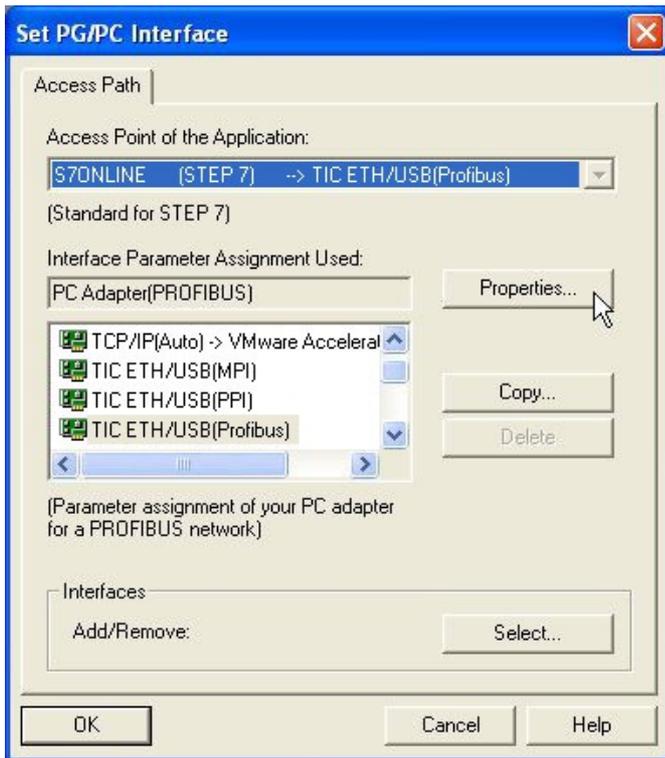


16. Save your configuration with „OK“ and close the „Set PG/PC–interface“ dialog with „OK“.

6.3.3.4 TCP/IP RFC1006 setting

17. For this kind of communication you only have to install the corresponding software.

6.3.3.5 ProTool/Pro RunTime (RT) Configuration



18. If you want to use ProTool/Pro RunTime you can set the "PG/PC Interface" by selecting the entry "DPSONLINE". Therefore you have to select "Access Point of Application" and configure it as described above. The easiest way is to use the S7-LAN/MPI-LAN/MPI-USB- driver which supports USB and LAN products.

The interface configuration for these programs is finished. Continue with the software which you want to use:

- => SIMATIC Step© 7 Manager (v5.2 + SP1)
- => Windows Control Center (WinCC) (v6.0)
- => Windows Control Center flexible 2004 (WinCC flexible) (v5.2.0.0)
- => ProTool/Pro (v6.0 + SP2)
- => Microwin 3.2

6.3.4 SIMATIC Step© 7 Manager (v5.2 + SP1)



Configure the interface as described in Set PD/PC-Interface.



1. Klick in the drop - down menu "target system" on "Display Accessible Nodes".
2. If you can see the list with possible Bus-devices, a communication over the cable has taken place. "Direct" connected devices will be shown, also the conditions if it is an "active" or "passive" assembly.
3. In this window you can edit each

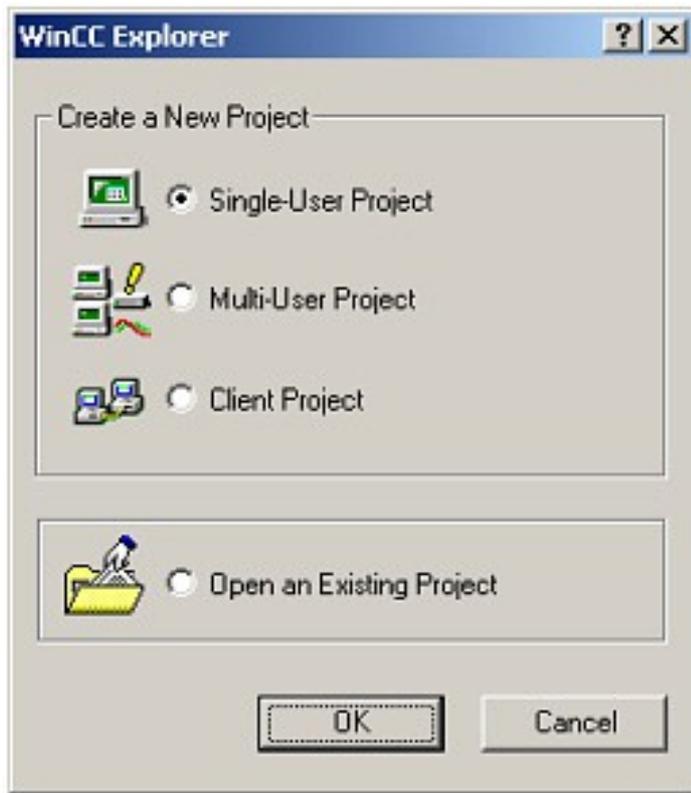
assembly with his blocks.

6.3.5 Windows Control Center (WinCC) (v6.0)



Configure the interface as described in Set PD/PC-Interface.

1. Start WinCC by using the desktop link or the program entry in the start menu.
2. Choose „New” in the menu „File” or click on the white („letter”) symbol to start a new project.



3. The next dialog offers you several project types “Single-User Project”, “Multi-User Project” and “Client Project”.

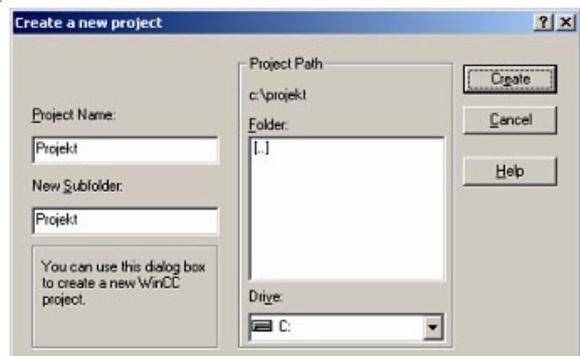
The next steps are the describing for the “Single- User Project”.

4. “OK” leads you to a new dialog. Type in the “Project Name” and the “Subfolder” of the project path.

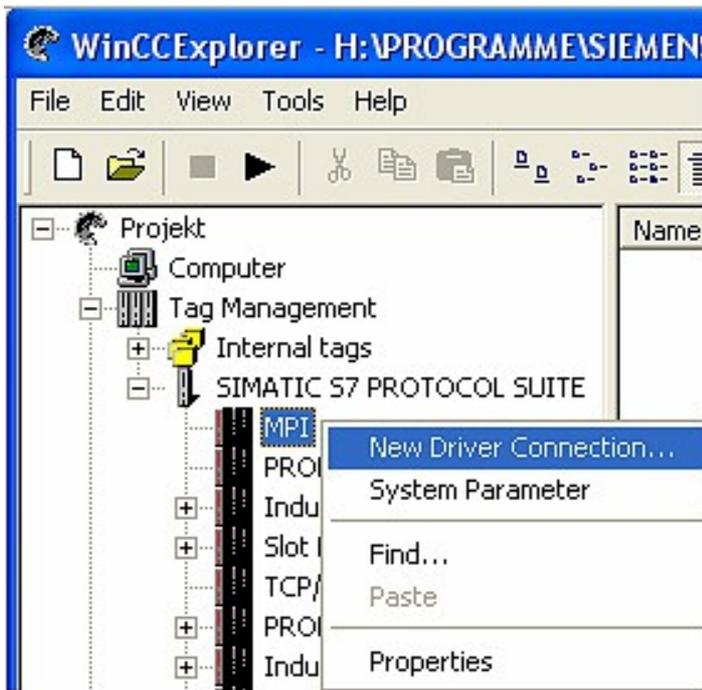
The chosen configuration is confirmed with “Create”.



To use one of the other options please go ahead and read in the manual of WinCC software.

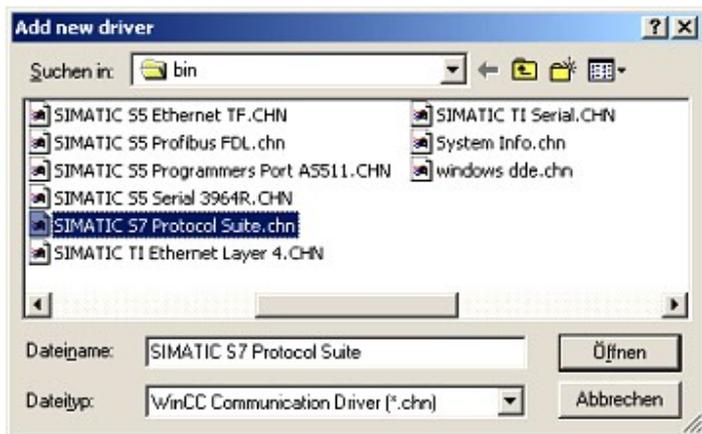


5. Please wait until the project is created. The project content will be shown in the left part of the main window.



6. For a proper working communication with the PLC there must be defined how the software has to communicate with the PLC

Therefore you have to right-click on “Tag Management” it opens the context menu. Choose “New Driver Connection ...”.



7. In the „Add new driver“ dialog select the driver which fits to your PLC

For a S7 PLC choose „SIMATIC S7 Protocol Suite.chn“.

If you want to use an other PLC please inform yourself first, which driver fits with your PLC.



It is very important that the selected driver fits with the PLC otherwise the connection cannot be established..

8. You should see now in the Explorer under the branch “Tag Management” the branch “SIMATIC S7 PROTOCOL SUITE”. Expand the branch and many protocols for various compounds will appear.

The General way of proceeding a new connection is to:

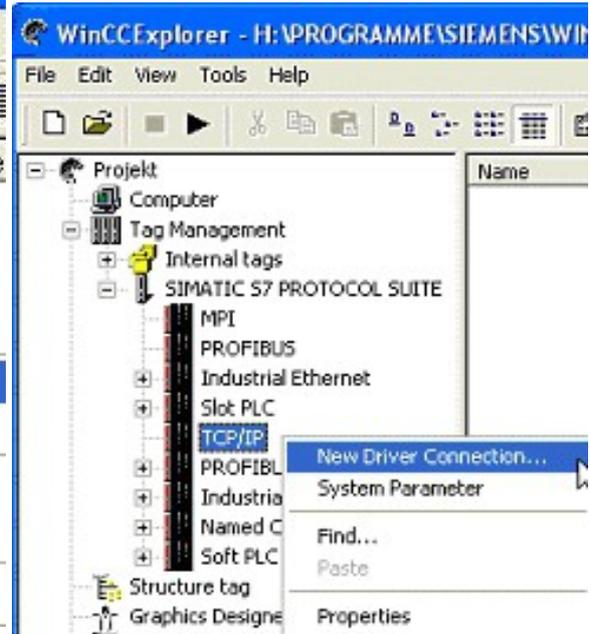
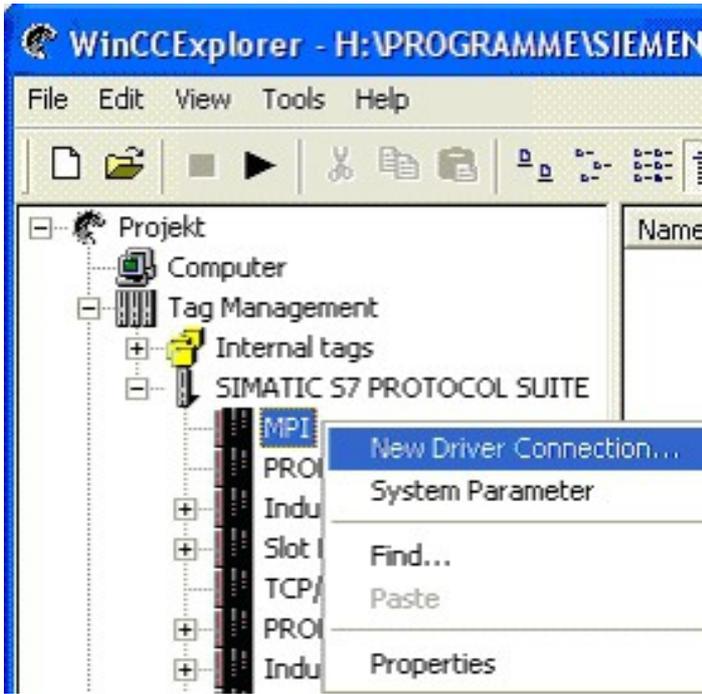
Right-click on the desired connection (MPI -> Picture: “MPI“, TCP/IP -> Picture: “TCP/IP“). A context menu opens. Click on „New Driver Connection...“.

This manual describes the connection configurations:

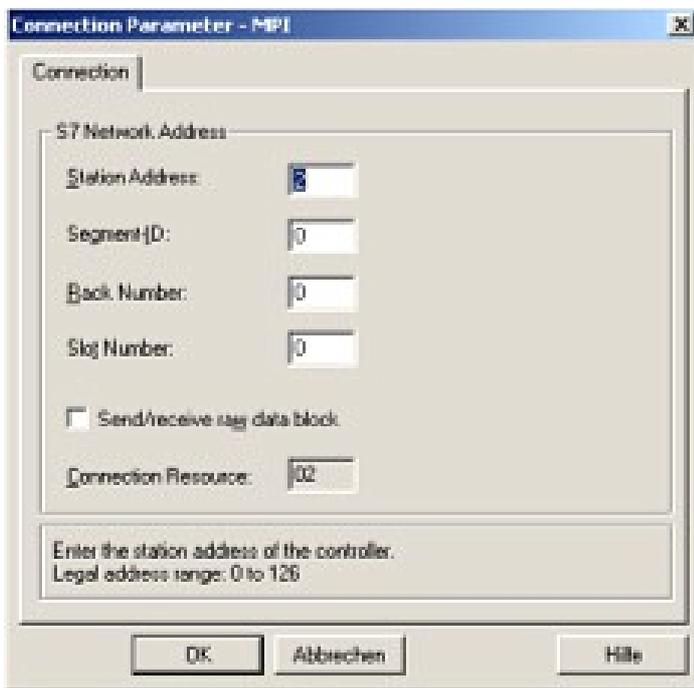
- for „MPI,, (MPI-II-cable, MPI-USB-cable, S7-USB-modul, S7-LAN-modul and MPI-LAN-cable)
- for „TCP/IP,, (only S7-LAN-modul and MPI-LAN-cable).

MPI

TCP/IP



6.3.5.1 MPI Configuration



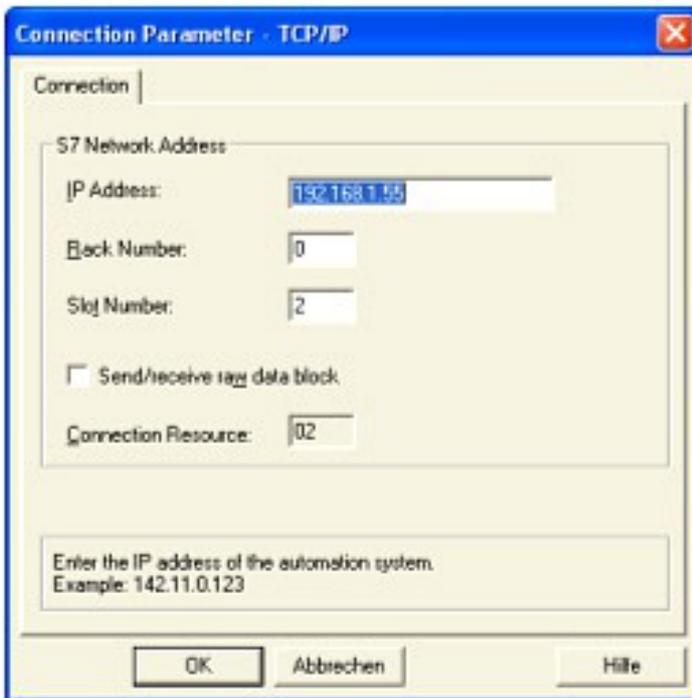
9. Now you are able to type in the name of the connection. With a click on “Configuration“ a new dialog will appear. Now you are able to set the properties of the connection.

Set up the station address of the PLC (in this example "2").

Confirm with "OK" until you are back to the main window.

Read further "Communication and fault diagnosis “ .

6.3.5.2 TCP/IP Configuration



10. A dialog appears where you can configure the connection parameters.

Set up the IP - Address of the module and configure the rack number as well as the slot number.

Confirm this configuration by clicking “OK”.

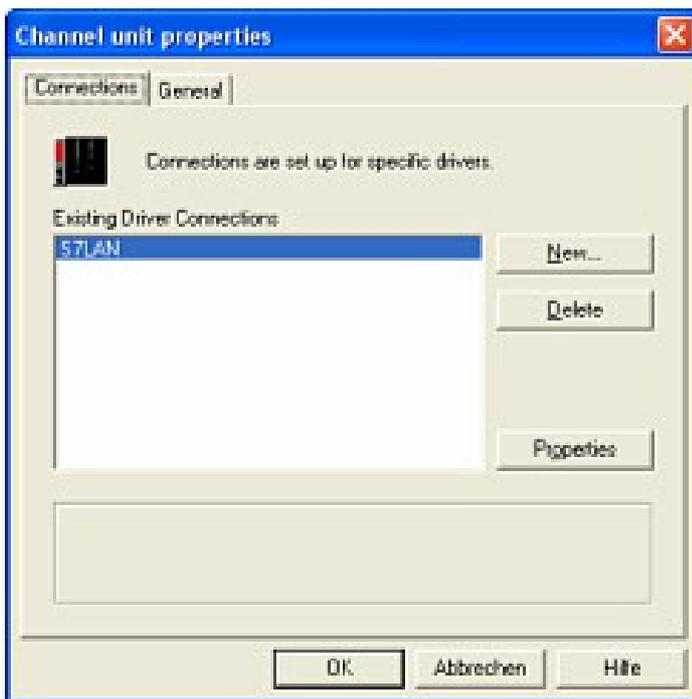
Example configuration:

IP - address 192.168.1.55

Rack - Number: 0

Slot - Nr.: 2

11. With a right-click on the new connection you can start the properties dialog. In this dialog please click on properties.



12. In this “Channel unit properties” you are able to see all “available connections”.

Choose the latest created connection and click again on „Properties”.

Now you can see all the variables which has been created for this connection.

In fact this connection is a new connection so there should not be any variable in the list.

To add a new variable click on „New”.

13. Now you are able to set up the name of the variable and different more properties.

In our example, we assign the following values:

Name: „S7LAN_MW0“

Data type : „unsigned 16 - Bit value“

Length: „2“

Address: „MW0“

Format adaptation: „WordToUnsignedWord“

Click on „Choose“ beside the Address to define the address from the variable.

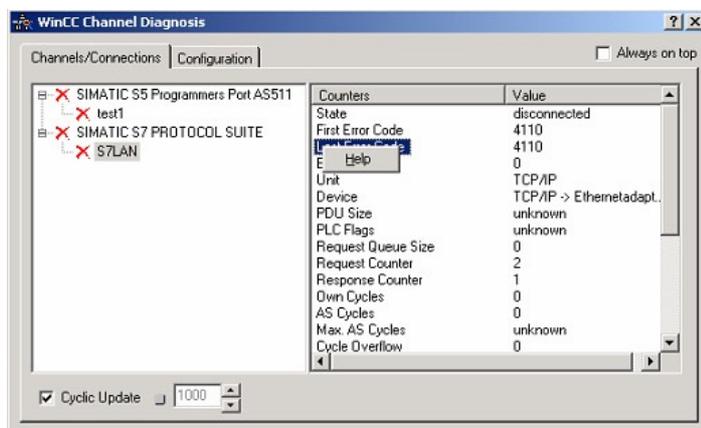
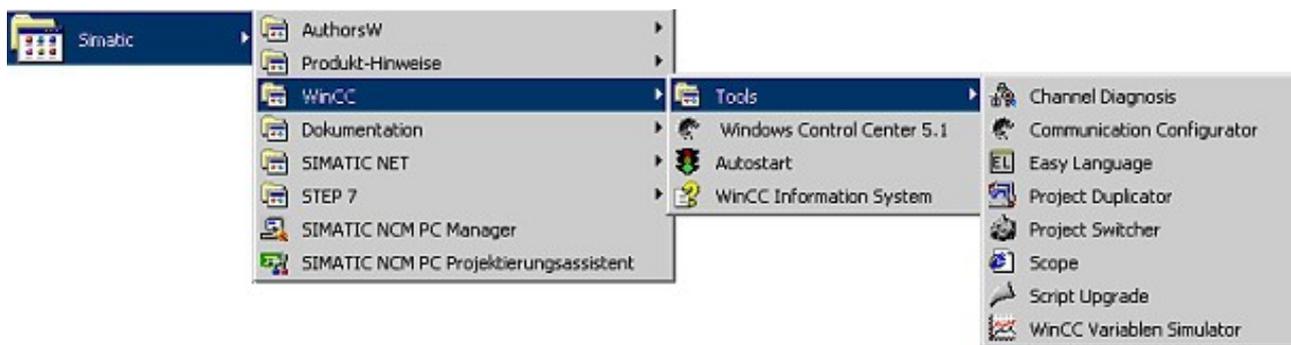
Example configuration: The data area from the variable is set to „Mark“ and the address is set to „Word“. The edit box „MW“ is set to „0“.

14. Confirm all open dialogs with „OK“ until you reach the main window.
15. The connection needs to know which network interface card it should be used to send data via the Ethernet. Open the “System parameters“ dialog from the context menu (right-click on TCP/IP).
16. Choose from the registry card „Unit“ and set the “logical device name“ to your network interface card (usually the name of the NIC begins with a „TCP/IP - > „).
17. Confirm with „OK“.
18. Now you are able to start  the communication. Stop it by clicking on .

6.3.5.3 Communication and fault diagnosis

To clean up errors faster the WinCC Software offers a tool named "Channel Diagnosis". This tool analyses all connections from your WinCC software. For demonstration purposes please stop the last started connection from your WinCC explorer.

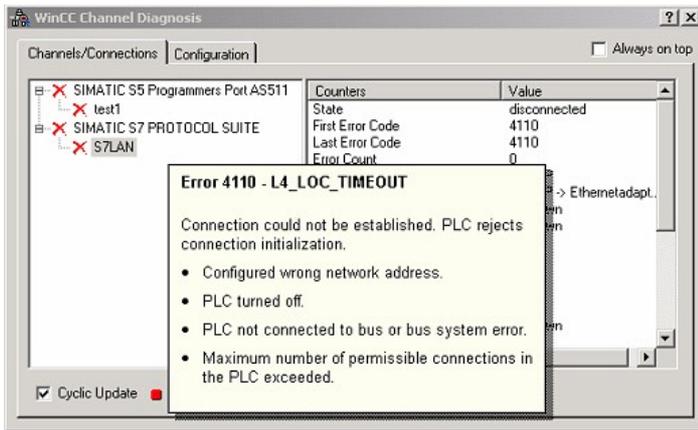
19. Start the software "Channel Diagnosis" by using your link in the start menu.



20. The tool could not detect a running connection so it marked the connection/s with a red 'X' (registry card "Channels/Connections").

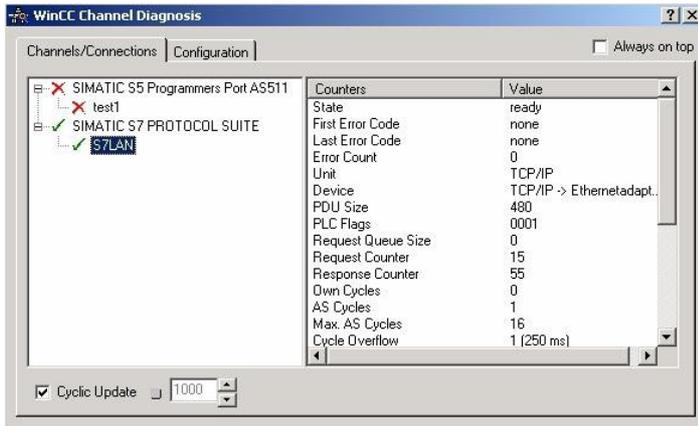
Click on the last created, not active connection (with the red 'X') and some informations from the connection will appear in the right part of the dialog.

One of these counters is called "Last Error Code".



21. If you take a right-click on the error value a window opens with “Help”.

Click on the “Help” window and a yellow window appears (tooltip) with detailed error descriptions.



22. Lets see what happens if the connection runs properly. Start the connection from your WinCC Explorer.

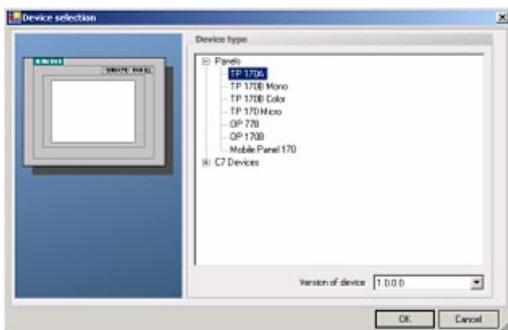
The "Channel Diagnosis" dialog marks the connection with a green hook if everything worked out.

6.3.6 Windows Control Center flexible 2004 (WinCC flexible) (v5.2.0.0)



Please make sure that the interface configuration is correct as described in PD/PC-Set interface

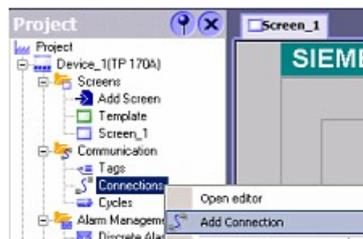
1. Start the WinCC flexible 2004 software by using the desktop link or the program entry in the start menu.
2. First you need to select “Create an empty project” on your first page.



3. In the "Device selection" mark the used operator panel (example: "TP 170A")

confirm with "OK".

4. After the project has been created right-click in the project window on “Connections“of the sub menu “Communication“.

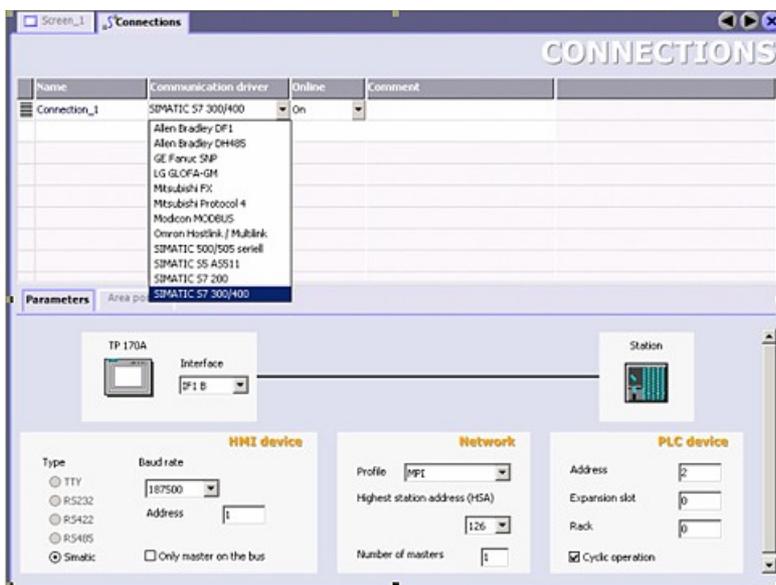


In the context menu click on “Add Connection“.

5. A new configuration window “Connections” opens in the right part of the main window. This offers you different setting options.

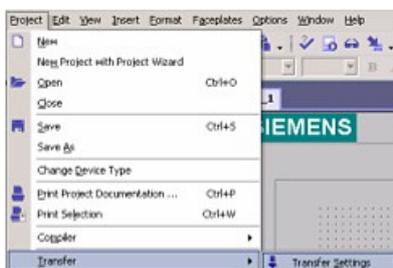
Important for the connection is:

- => the communication driver (set up which PLC you are using (example: "SIMATIC S7 300/400"))
- => the Baud rate (Set this on "187 500")
- => the address of the terminal (HMI) (in this example "1")
- => the Profile ("MPI" for example)
- => the Highest Station Address (HSA) (e.g. "126")
- => the address of the PLC (e.g. "2")



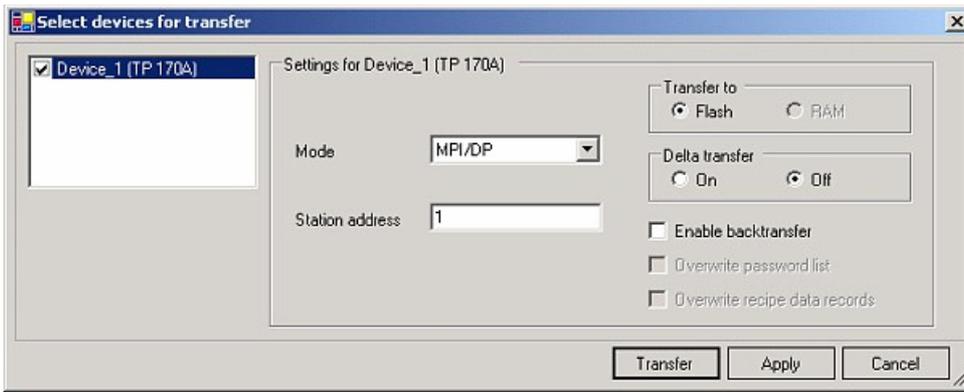
6. Now you can start with your work.

If you have finished work you can transfer this project to the panel by reading the next steps.



7. Choose „Transfer Settings“ from the sub menu „Transfer“.

8. In the new dialog change the „Mode“ to „MPI/DP“ and set the „Station address“ of the operator panel (e.g. „1“). If desired you can switch the „Delta transfer“ to „On“ (in this example we set it „Off“).



9. Press the button „Transfer“ to start communication with the terminal. Your project is about to be transferred.

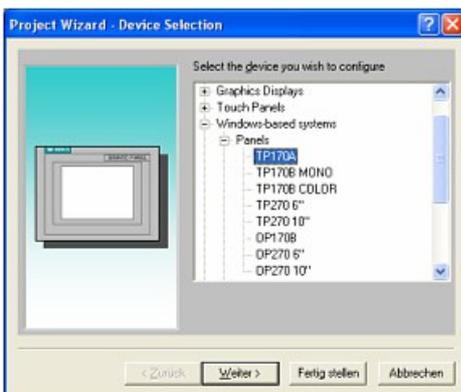
The WinCC flexible software is now able to communicate with your operator panel.

6.3.7 ProTool/Pro v6.0 SP2



Please be sure that the interface configuration is correct as described in PD/PC-set interface

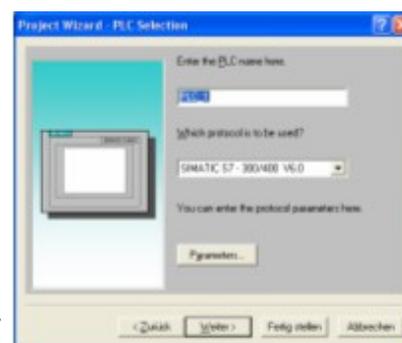
1. Start ProTool/Pro by using the desktop link or program entry in the start menu.
2. Choose from the menu „File“ the sub menu „New“ or click on the right symbol.



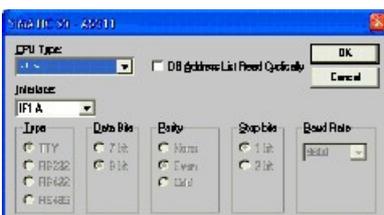
4. „Next“ leads you to a new dialog. Type in the specific fields the name of the PLC device and choose the used PLC in the driver selection (e.g. „SIMATIC S7 – 300/400 V6.0“).

3. The next dialog asks you which operator panel you are using.

Mark the used panel (e.g. „TP 170A“)



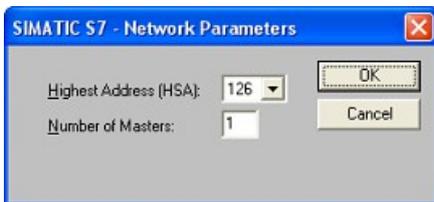
5. Via „Parameter...“ you are calling an configuration dialog from the chosen PLC driver



Set up the station address of the panel (example „1“) and of the PLC (example „2“).

Leave the point "Interface" in the standard

configuration. In the sector „Net parameter“ choose the interface which uses your module on the PLC (e.g. „MPI“). Configure the baud rate to „187.5“.



6. The button „More ...“ leads you to a small dialog where the „Highest Station Address“ should be configured to „126“. Set up the „Number of masters“ (e.g. „1“)

7. confirm with „OK“ until you got back to the „Control Selection“.Go on with „Next“.

8. In the main window start the Transfer Settings dialog by clicking on „File“ „Transfer“ „Settings...“. Choose „MPI / PROFIBUS DP“ from the listbox and type in the station address of the operator panel (e.g. „1“).

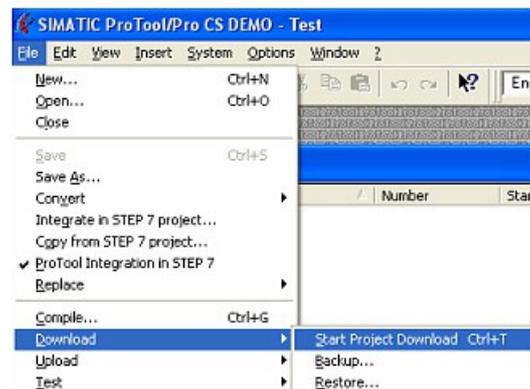
Confirm with „OK“.

and start with your work

If you have finished working on this project you can go on with the next steps.



9. If you want to transfer you project to the panel you have to generate the project first. This can be done with a click on „File“ -,„Compile“.



10. To transfer the project just click on „File“ „Download“ „Start Project Download“ or click on the right symbol .

Please wait while the project is transferred.

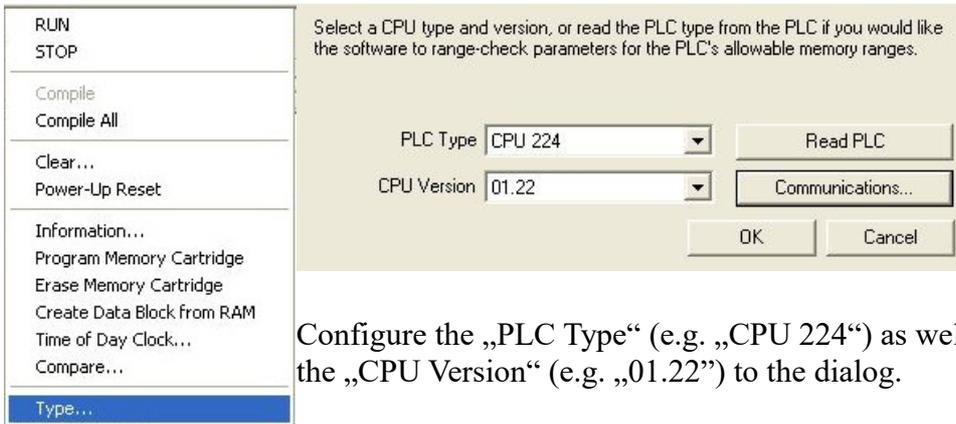
The communication between the operator panel is now established.

6.3.8 Microwin v3.2 (only for S7 200)

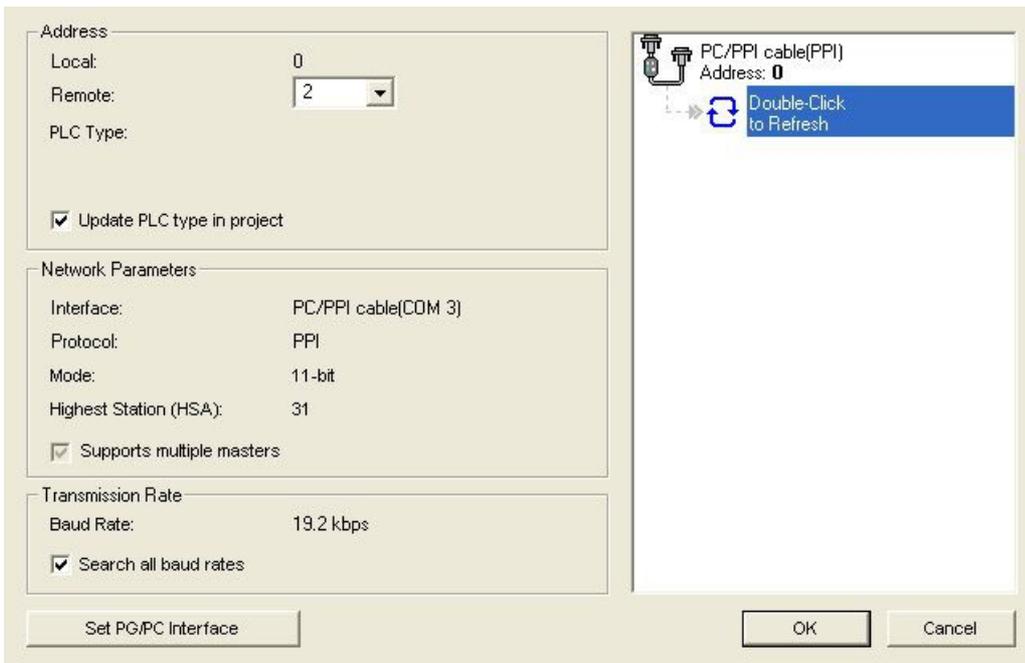


Please be sure that the interface configuration is correct as described in PD/PC-set interface

1. Start Microwin using the desktop link or program entry in the Start menu.
2. Click on „Type“ in the menu „PLC



Configure the „PLC Type“ (e.g. „CPU 224“) as well as the „CPU Version“ (e.g. „01.22“) to the dialog.



3. Click on „Communications...“ to start the next dialog.

In the sector „Address“ set up the „Remote“ listbox with the station address of the PLC (e.g. „2“).

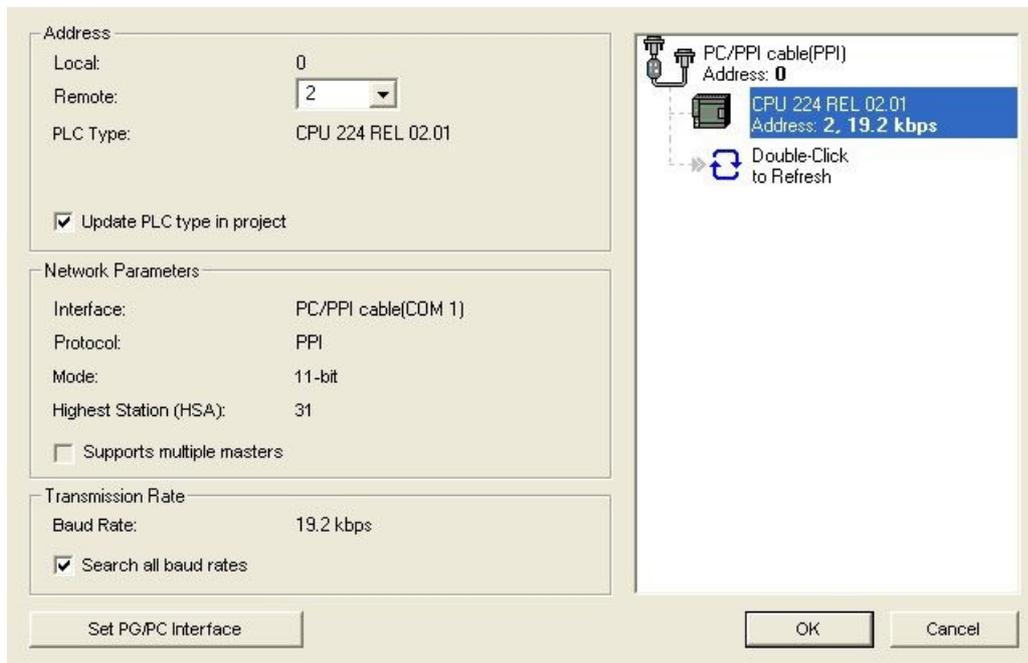


If you skipped the point b („ PD/PC-set interface“) you can configure the PG/PC interface with a click on „Set PG/PC interface“.

4. In the right part of the dialog double click on the blue arrow  symbol to test

the communication with the PLC.

5. The sector „Address“ should be updated and displays the „PLC Type“. Also the CPU of the PLC is displayed in the right part of the dialog.



6. Confirm with „OK“ until you get back to the main window.

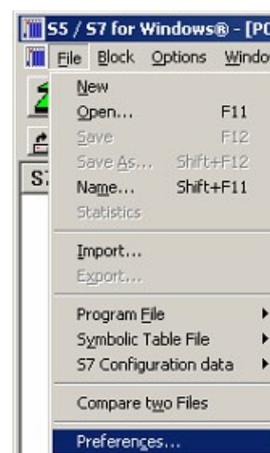
The communication with the PLC ist now established.

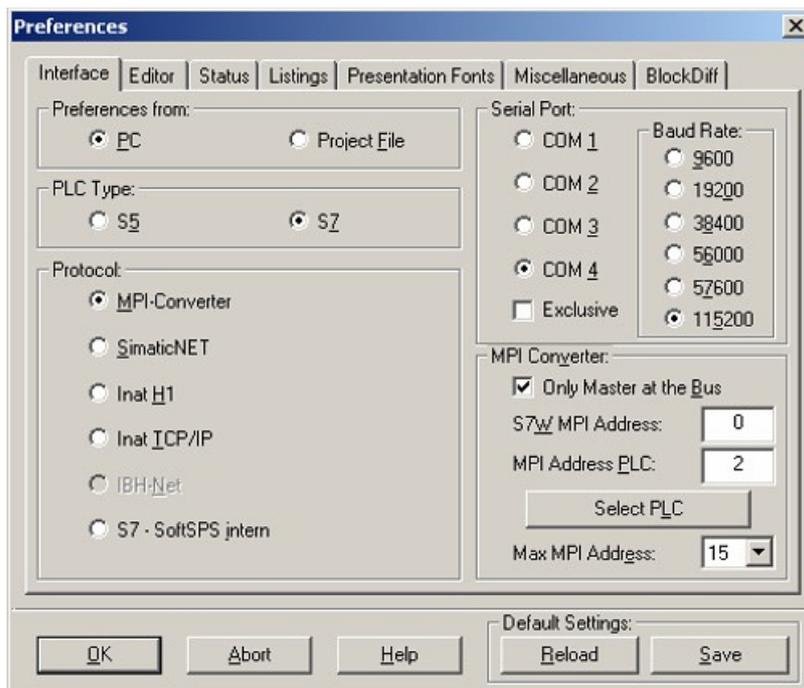
6.3.9 S7 for Windows v5.02

1. Start the „S7 for Windows“ software by using the link on your desktop or use the link in your start menu (standard is „Programs\S7 for Windows\S7 for Windows“)

2. Choose File ->Preferences... to configure the communication configuration between the computer and the PLC.

A new dialog appears which provides to set up a lot of configuration data about the communication with your PLC.





3. Choose the first registry card „Interface“ (standard) and set up the configuration data as described below:

=> Area: „Preferences from:“ =>PC

=> Area: „PLC Type:“ => S7

=> Area: „Protocol:“ => MPI - Umsetzer

=> Area: „Serial Port:“ => Choose the virtual COM port which has been created by PLC - VCom (e.g. „COM 4”).

=> Area: „Baud Rate“ => Choose the speed you want to use at the bus (e.g. „115200“)

=> Area: „MPI Converter:“

- Activate the checkbox „Only Master at the Bus“ if you have only one PLC in the bus.
- Leave the fields „S7W MPI Address“ and „MPI Address PLC“ as it is.
- The number in the listbox „Max MPI Address“ must be higher than the PLC with the highest station address in your MPI bus. Otherwise every PLC which is higher than this number will not be seen (e.g. if there is only one PLC in your bus „15“ is more than enough).

4. After the software is configured, please click „Select PLC” in the area „MPI Converter“. A new dialog appears where you can select the desired PLC



5. The dialog displays all the PLCs that can be found in your MPI bus.

Select the desired one and confirm with „OK”.

6. Close the preferences dialog by pressing the „OK“ button.



7. Back in the main window press the „PC Block List“ button for testing the new established communication configuration.

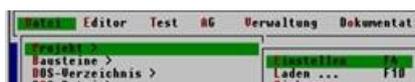
8. Please wait a moment for the software to read the desired blocks from the PLC. The blocks will be displayed in the listbox below the menu bar (see picture to the right).

Baustein	Adress
OB 1	-
SFC 0	-
SFC 1	-
SFC 2	-
SFC 3	-
SFC 4	-
SFC 20	-
SFC 21	-
SFC 22	-
SFC 28	-
SFC 29	-
SFC 30	-
SFC 31	-
SFC 32	-
SFC 33	-
SFC 34	-
SFC 36	-
SFC 37	-
SFC 38	-
SFC 39	-
SFC 40	-
SFC 41	-
SFC 42	-
SFC 43	-
SFC 44	-
SFC 46	-
SFC 47	-
SFC 49	-
SFC 50	-
SFC 51	-

The communication between the software and your PLC is established.

6.3.10 SIMATIC Step© 5 Manager

1. Start your SIMATIC Step© 5 Manager by using the desktop link or the application entry in the start menu.



2. in the "File" menu , in submenu "project" you can the "Setting" dialog open.

3. In the tab "AG" configure the used PLC interface (example: "AS511").

Below that, you can set the COM port (example: "COM3").



4. with "F3" change, the "operating mode" to "online".

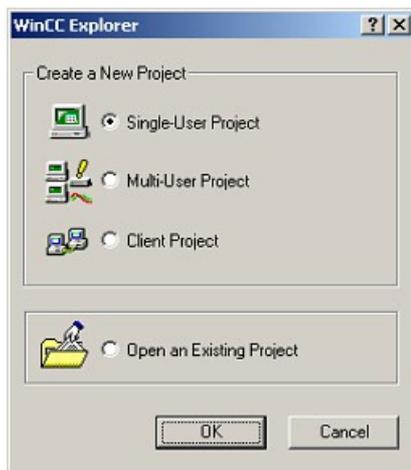
The window should display the "AG-type"

5. The connection with the PLC is successfully established when the "operating mode" changes to "Online."

6.3.11 Windows Control Center (WinCC) (v6.0)

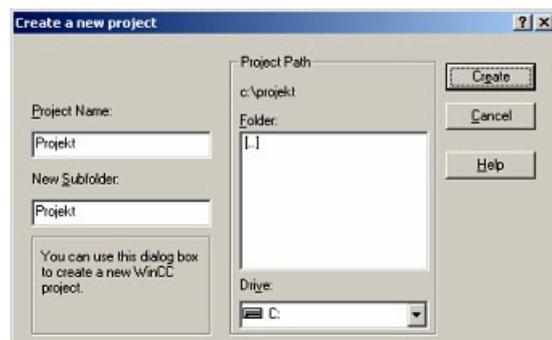
1. Start WinCC by using the desktop link or the program entry in the start menu.

2. Choose „New” in the menu „File” or click on the white („letter”) symbol to start a new project.



3. The next dialog offers you several project types „Single - User Project“, „Multi - User Project“ and „Client Project“.

The next steps are describing the „Single - User Project“.



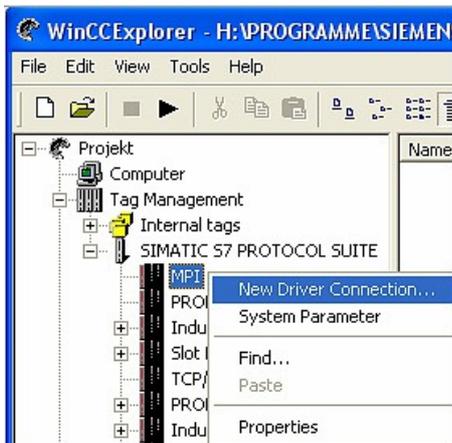
4. OK“ leads you to a new dialog. Type in the „Project Name“ and the „Subfolder“ of the „Project Path“

With „Create“ the chosen configuration is confirmed.



If you want to use one of the other options, please read this further in the manual of the WinCC software.

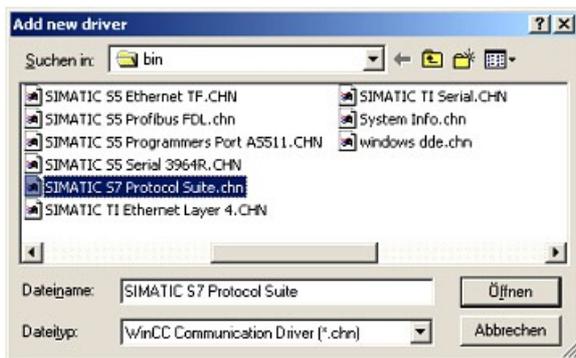
5. Please wait until the project is created. Afterward the project content is shown in the left part of the main window.



6. For a proper working communication with the PLC there must be defined how the software has to communicate with the PLC

Therefore right click on „Tag Management“ to open the context menu. Choose „Add New Driver ...“.

7. In the dialog „Add new driver“ select the driver which fits to your PLC

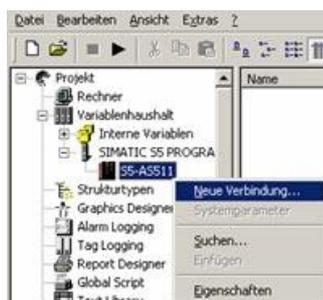


For a S5 PLC, you can choose the file SIMATIC S5 Programmiers Port AS511.chn.

If you are using a different PLC please inform yourself which driver fits with your PLC.



It is important that the chosen driver fits with the PLC otherwise the connection cannot be established.



8. In the explorer you should see into the variable manager the branch "SIMATIC S5 PROGRAMMERS PORT".

Expand the branch and the protocols for several connections will appear

Right click on the desired connection „S5-AS511“. A context menu opens. Click on „New Connection...“.

9. Now you are able to type in the name of the connection. With a click on „Configuration“ a new dialog will appear.

Set up the station address of the PLC (in this example „3“).

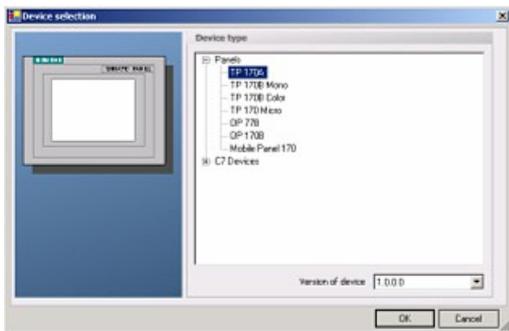
10. Confirm with "OK" until you are back to the main window.

11. Now you can with  start the communication and with  this end it again.

6.3.12 Windows Control Center flexible 2004 (WinCC flexible) (v5.2.0.0)

1. Start the WinCC flexible 2004 software by using the desktop link or the program entry in the start menu.

2. At first click on „Create an empty project“ in the „Start page“.



3. In the „Device selection“ mark the used operator panel (example: „TP 170A“)

confirm with „OK“.

4. After the project has been created right click in the project window on „Connections“ of the sub menu „Communication“.



In the context menu click on „Add Connection“.

5. Right in the main window appears the new tab "Connections" where you are different settings options.

Important for the connection are:

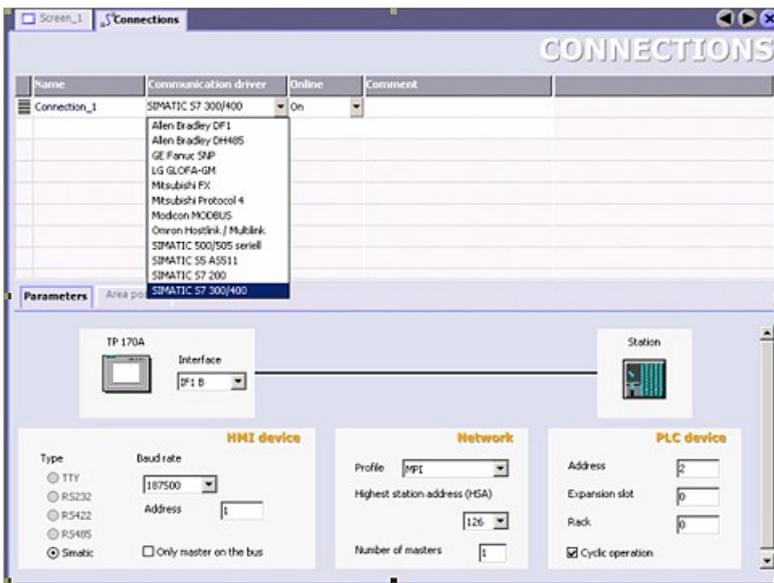
=> the communication driver (set up which PLC you are using

(eg: „SIMATIC S5 AS511“)

=> select the used "CPU - type" (eg "S5 95U")

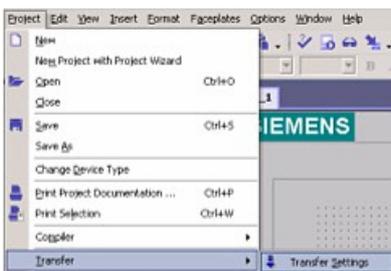
=> configure the interface parameters in the section "terminal"

(eg: baud rate „9600“, Parity„even“, Data bits „8“, Stop bits „1“).



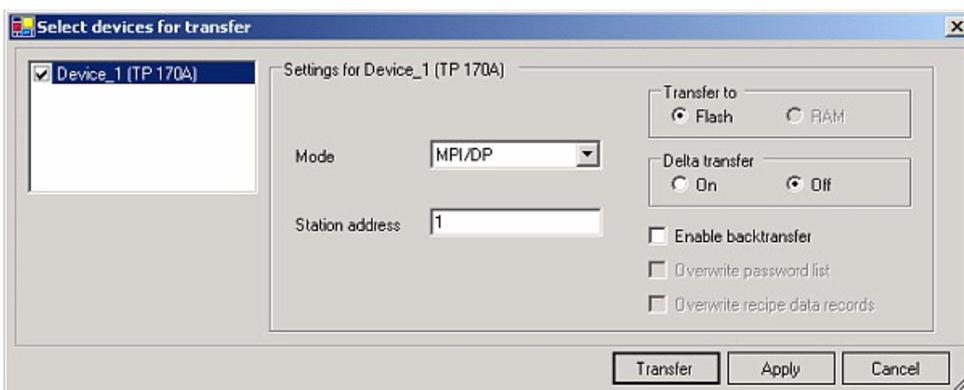
6. Now you can start with your work.

If you have finished work you can transfer this project to the panel by reading the next steps.



7. Choose „Transfer Settings“ from the sub menu „Transfer“.

8. In the new dialog change the „Mode“ to „serial“ and set the „Station address“ of the operator panel (e.g. „1“). Please set the baud rate to "19200". The "Delta transfer" is not supported by the S5-LAN. Turn them so "Off".



9. Press the button „Transfer“ to start communication with the terminal. Your project is about to be transferred.

The communication with the operator terminal is so successfully established .

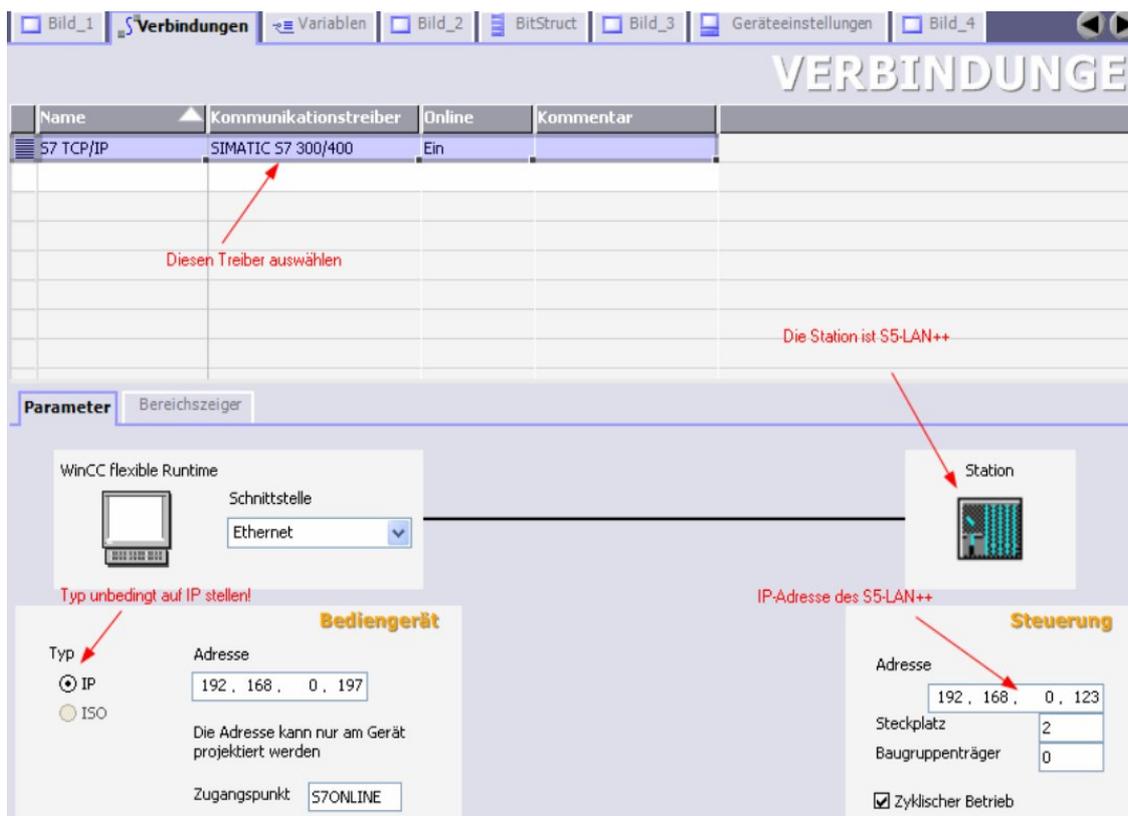
6.3.13 Communication WinCC flexible with S5-LAN++

S5-LAN++ behaves like a CP 343-1 or as an HMI ProfiNet connection. So you use the same configuration as when you are connected to the Simatic S7 300/400 with TCP/IP. Here's a short guide for setting WinCC Flexible:

1. Select in the S5-LAN++ as S5/S7 server port 102!
This port is usually by default setting ready at 102.

2. Select for a communication driver in the WinCC flexible SIMATIC S7 300/400 as shown in the picture. For the PLC you enter the IP address of the S5-LAN++. The Typ select to „IP“. Rack- and Slotnumber is for the usage with S5-LAN++ not significant.

Just enter the default data: Rack 0, Slot 2.





3. Please note that the access point (S7ONLINE) is set correctly.

The attitude you take in the Control Panel under "Set PG/PC Interface".

Make sure that an adapter with TCP / IP support is selected.

4. Addressing

The conversion from S5-float (KG-format) to S7-float (IEEE 754) is automatic in both directions. It is important to use a variable type of IEEE 754.

The addressing of memory bits, inputs, outputs, timers and counters is the same for S5 and S7. However, there are differences in the data blocks. Addressing at the data blocks has been adapted to the S7.

For example:

DB10 DW 10 (S5) is addressed with DB10.DBW20 (S7). The background is that the S7 principle addresses in byte. If you want to read a single byte, for e.g. DB10.DL4 (S5), so you have to address DB10.DBB8. It is therefore necessary: even byte address = DL, odd address = DR in DB of the S5.

Here are some examples of address:

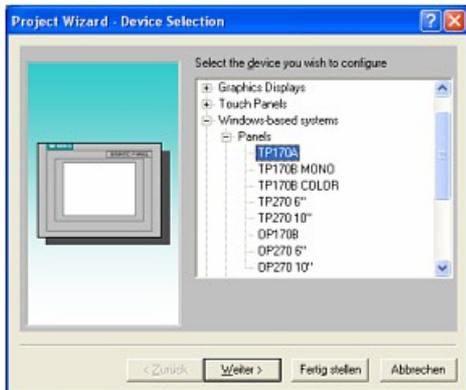
Simatic S5	Simatic S7	Format
MB 11	MB 11	Byte
MW 20	MW 20	Word
DB10 DW 9	DB10 DBW 18	Word
DB10 DW 60	DB10 DBW120	Word
DB10 DL 3	DB10 DBB 6	Byte
DB10 DR 3	DB10 DBB 7	Byte
DB10 DD 25	DB10 DD 50	DWord
DB10 DD 35	DB10 DD 70	Real

How can we address a DX (for e.g. extended DB135)

Must be for e.g. a DX addressed in a CPU 135, then the following rule applies:
 DB-number 1-255 = DB, DB-number > 255 = DX.

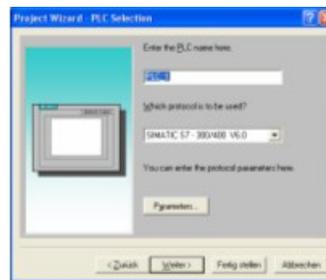
6.3.14 ProTool/Pro v6.0 SP2

1. Start ProTool/Pro by using the desktop link or program entry in the start menu.
2. Choose from the menu „File“ the sub menu „New“ or click on the right symbol.



3. The next dialog asks you which operator panel you are using.

Mark the used panel (e.g. „TP 170A“)



4. „Next“ leads you to a new dialog. Type in the specific fields the name of the PLC device and choose the used PLC in the driver selection (e.g. „SIMATIC S5 – AS511 V6.0“)



5. Via „Parameter...“ you are calling an configuration dialog from the chosen PLC driver

Select the used "CPU type" and the "interface" to which the terminal is connected (eg "IF1 A").

Furthermore you configure the parameters of the interface ("type", "bits", "Parity", "Stop Bits", "baud rate").

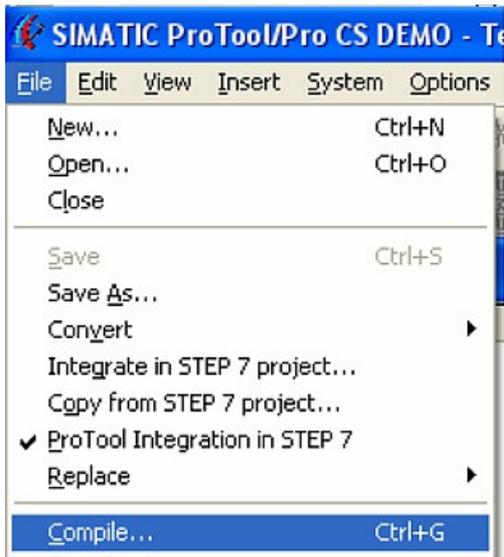
7. confirm with „OK“ until you got back to the „PLC Selection“.Go on with „Next“.

8. In the main window start the Transfer Settings dialog by clicking on „File“ „Transfer“ „Settings...“. Choose „Serial“ and the COM interface of the operating terminal (e.g.: „COM1“). set the baud rate to "19200".

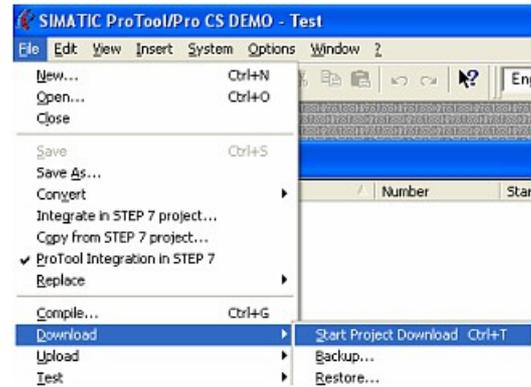
Confirm with „OK“.

and start with your work

If you have finished working on this project you can go on with the next steps.



9. If you want to transfer you project to the panel you have to generate the project first. This can be done with a click on „File“ -,„Compile“.



10. To transfer the project just click on „File“ „Download“ „Start Project Download“ or click on the right symbol .

Please wait while the project is transferred.

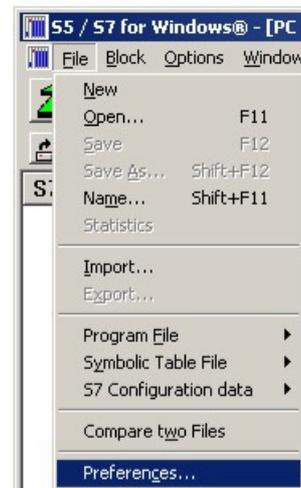
The communication between the operator panel is now established.

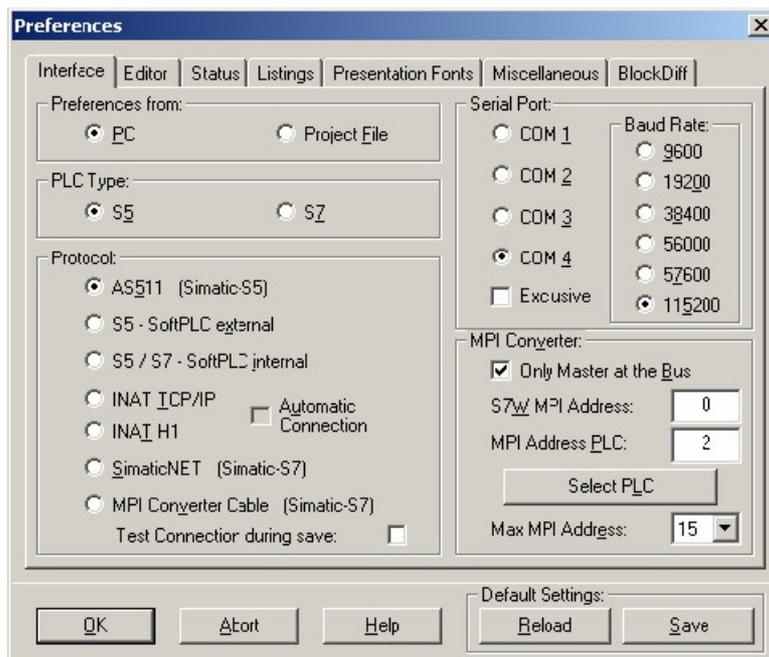
6.3.15 S5 for Windows v5.02

1. Start the “S5 for Windows” software by using the link on your desktop or use the link in your start menu (standard is “Programs\S5 for Windows\S5 for Windows“)

2. Choose File ->Preferences... (top left in the menu bar) to configure the communication configuration between the computer and the PLC.

3. A new dialog appears which offers the possibility to set up a lot of configuration data about the communication with your PLC.

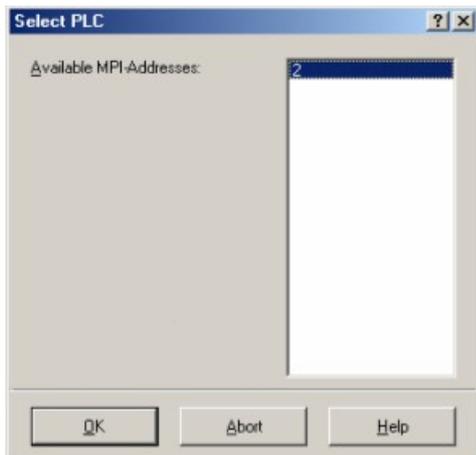




4. Choose the first registry card „Interface“ (standard) and set up the configuration data as described below:

- => Interface Settings from : „PC“
- => PLC type: „S5“
- => Protocol: „AS511 (Simatic - S5“)
- => Serial Port: Select here the COM port for the AG-access
- => Baud Rate: Choose the speed you want to use at the bus

4. 5. After the software is configured , click “Select PLC” in the area “MPI Converter“. A new dialog appears where you can select the desired PLC



5. In this dialog you can see all PLC's which are connected to your PC.

Choose from the list box (left) the desired station (the PLC) and confirm with "OK". (In the example "2")

6. Close the preferences dialog by pressing the „OK“ button.



7. Back in the main window press the „PC Block List“ button for testing the new established communication configuration.

8. 9. Please wait a moment for the software to read the desired blocks from the PLC. The blocks will be displayed in the listbox below the menu bar (see picture to the right).

Baustein	Adress
OB 1	-
SFC 0	-
SFC 1	-
SFC 2	-
SFC 3	-
SFC 4	-
SFC 20	-
SFC 21	-
SFC 22	-
SFC 28	-
SFC 29	-
SFC 30	-
SFC 31	-
SFC 32	-
SFC 33	-
SFC 34	-
SFC 36	-
SFC 37	-
SFC 38	-
SFC 39	-
SFC 40	-
SFC 41	-
SFC 42	-
SFC 43	-
SFC 44	-
SFC 46	-
SFC 47	-
SFC 49	-
SFC 50	-
SFC 51	-

The communication between the S5 for Windows and the PLC is now established.

7 Configuration

7.1 Menutree

messages

hang up

select subscr.

Selection of one of the possible 197 subscriber entries and the dial to



edit subscriber

The edit of the 197 subscriber

Number of the entry

Name max. 9 char



12 - 33K
R12 - R33K
M12 - M33K
ISDN + RSDN

Number of the subscriber 16 chars, with “?” possible, the next 16 chars append to this entry
RRV-number (only with recall): intern. telefon number of the device, that want this recall

Connect to IP (ONLY for PG-TELE)  
Here, you can make a connection to a in the IP-addressbook defined name with Ethernet.

IP addressbook  
Here is like in a telephonebook the name and the ip-address for this name stored.
You can edit, delete and store.

Onlineaction

- Hang up  
- Lift  
- Data mode 
- Voice mode 
- Init modem 
- Login remote (ONLY for PG-TELE)  
- Send Firmware 
- Fetch Firmware 
- Send OS 
- Fetch OS 
- Remoteconfig on (ONLY for PG-TELE)  
- Remoteconfig off (ONLY for PG-TELE)  

First Config 
Language ...
Device Type ...
Telephone ...

Configuration  
Device type

- PLC-S5 TELE
- PG-TELE
- PLC-S5 KOR/MUX
- PLC-S7 300/400
- PLC-S7 200 9K6
- PLC-S7 200 19K2
- PLC-S5-F-TYPE

Device name		
max. 9 char		
router-mode		
router-modees		
No		
Version Tel-Book		
Yes		
No		
Comm. Tel-Book		
Yes		
No		
MPI OnBoard		
MPI OnBoard Y/N		
Yes		
No		
MPI OnBoard Baud		
9,6 kBit/s		
19,2 kBit/s		
45,45 kBit/s		
93,75 kBit/s		
187,5 kBit/s		
500 kBit/s		
750 kBit/s		
1,5 MBit/s		
3 Mbit/s		
6 Mbit/s		
12 Mbit/s		
OnBoard MPI-Adr.		
0 - 126		
MPI OnBoard HSA		
15		
31		
63		
126		
Fix OnBoard Baud		
Yes		
No		
MPI/Profibus		
MPI-Bus		
Profi DP/Std.		
Profi DP/FMS		
S7-CP-Emulation		
PC/MPI-Cable		

MPI-Cable Baud			
19200			
38400			
57600			
115200			
Cable MPI-Adr.			
0 – 31			
Cable HSA			
15			
31			
63			
126			
S7-Config.			(ONLY for PG-TELE)
SPS MPI-Adr			
(is only valid, if there is no Poll-list active, for Pager, Fax- and SPS-TELE)			
Poll-Liste			
(if there any entries exist, the S7-MPI-Adress is not valid)			
Firewall			
Yes			
No			
Open VPN			
OVPN mode			
no OVPN			
Server (UDP)			
Client (UDP)			
Advanced Configuration			
Server (TCP)			
Client (TCP)			
PG-MUX-Mode	(ONLY for PLC-S5-TELE)		
PG-MUX			
PG-AG			
PG-MUX -c			
IP-Addresses			
Ethernet-IP			
xxxx.xxxx.xxxx.xxxx			
with Eth-Netmask			
Yes			
No			
Ethernet-Netmask			
xxxx.xxxx.xxxx.xxxx			
ISDN IP-Address			

	xxxx.xxxx.xxxx.xxxx		
Analog IP-Addr.			
	xxxx.xxxx.xxxx.xxxx		
2. Ethernet-IP			
	xxxx.xxxx.xxxx.xxxx		
2. Eth-Netmask			
	xxxx.xxxx.xxxx.xxxx		
3. Ethernet-IP			
	xxxx.xxxx.xxxx.xxxx		
3. Eth-Netmask			
	xxxx.xxxx.xxxx.xxxx		
Net-Konfig			
Hostname			
Input for a logic hostname up to 16 char possible			
1. DNS			
xxxx.xxxx.xxxx.xxxx			
2. DNS			
xxxx.xxxx.xxxx.xxxx			
3. DNS			
xxxx.xxxx.xxxx.xxxx			
Std. Gateway			
xxxx.xxxx.xxxx.xxxx oder logischer Name			
list of hosts			
Modem			
Extension			
Yes			
No			
Outline code			
0,1,2,3,4,5,6,7,8,9,!,“,“,/,>,#,X,W,*			
Count of Rings			
0,1,2,3,4,5			
Analog			
Analogmodem			
German(complex)			
USA(600R-System)			
Dial mode			
Tone			
Pulse			
Busy identify			

	Yes		
	No		
Speaker			
	On		
	Off		
Hangup hearing			
	0 – 10 Secs		
Baudrate manual			
	12		
	24		
	48		
	96		
	33K		
Analog on ISDN			
	Yes		
	No		
Max. analog Baud			
	MAX		
	228		
	192		
	144		
	96		
	48		
ISDN aLaw/uLaw			
	aLaw EUR/Nordam.		
	uLaw Southamerica		
ISDN			
ISDN-Protocol			
	Euro-ISDN		
	1TR6		
ISDN EAZ/MSN			
	0 – 999		
Extern			
external modem			
	Yes		
	No		
Baud ext. modem			
	9K6 – 115K2		
ext. Modem cmd			
	Yes		
	No		

UMTS/GPRS

UMTS-Modem



Kind of net



- only GPRS
- only UMTS
- 1.GPRS/2.UMTS
- 1.UMTS/2.GPRS

UMTS-PIN



Enter the UMTS-Pins (max. 8 char)

No. SMS-Centre



APN



PIN 6 chars

Connection

Callback mode (ONLY for PLC-TELE)



- Yes
- No

Callback no. (ONLY for PLC-TELE)



Telephone number, max. 16 char

Max. Connecttime



0 up to 60 minutes

Max. Idletime



0 up to 60 minutes

Access code

dialin protect



- Yes
- No

modem user



delete WEB-user



PIN device local



6 chars Pin

PIN PLC local



6 chars Pin

PIN device remote



6 chars Pin

PIN PLC local



Options

Pager-TELE



Pager Mode

Yes
No
Pager-Flag
Gerade Merkerworte von 0 bis 254
Pager-COM-DB
DB1 to DB 255, DW 0 to 998
PLC/ASCII-TELE
Modem control
No
With flag word
with dig. I/O
Modem Flag
Only even flag words, 0 to 254
PLC-TELE-Mode
Yes
No
PLC-TELE-Flag
Only even flag words, 0 to 254
PLC-TELE-KOM-DB
DB1 to DB 255, DW 0 to 998
ASCII-Mode
Yes
No
ASCII-Flag
Only even flag words, 0 to 254
ASCII-COM-DB
DB1 to DB 255, DW 0 to 998
FAX-TELE
Fax-Mode
Yes
No
FAX-Flag
Only even flag words, 0 to 254
FAX-COM-DB
DB1 to DB 255, DW 0 to 998
Resolution
Fine
Heavy
FAX-POLL-DB
DB1 to DB 255, DW 0 to 998



Special

to PG/PLC COM (ONLY for PG-TELE)			
Connect PG with PG (PG-socket of the PLC-Tele)			
Connect PG with PLC (PLC-socket of the PLC-Tele's)			
Break Tx-line (NUR BEI PG-TELE)			
0 bis 30 s			
S7-200 on	(ONLY for PG-TELE)		
Direct mode	(ONLY for PG-TELE)		
Source-COM			
Dest-COM			
DM on			
DM on with Handshake			
Tele-Switch	(ONLY for PG-TELE)		
Pro-Tool 7/17	(ONLY for PG-TELE)		
IBX-TEST	(ONLY for PLC-TELE)		
Reboot ProfII			
Soft Restart			
Language			
German			
English			
Info			
Version			
OS Version			
Remoteversion			
Remotename			
Serial number			
MAC-Address			
Copyright			

7.2 messages

In this menu item which occurs automatically on the display after starting the TELE-Network device, the user receives important data about the condition of his/her device. It is displayed whether the TELE-Network has a direct connection to the control:

- PLC ONLINE
- PLC OFFLINE

Moreover, after the first dialling, the user is informed whether there is a connection or not:

- connected
- not connected

7.3 Hang Up

In this menu item, the modem disconnects an existing connection, i.e. it hangs up.

7.4 Select Subscriber

Select one of the maximally 197 saved entries by using the cursor-up/down key. Then press ENTER for starting the actual dialling.

You can interrupt the dialling process by using the cursor-left key. This might become necessary if you accidentally dialled the wrong number.

7.5 Edit subscriber

This function enables you to input up to 197 names and telephone numbers in a telephone directory and save them there. You have the storage positions 1 to 197 at your disposal.

If you are in this menu item, you can select with the cursor keys UP/DOWN your desired storage position (1 to 197). Press ENTER and the cursor moves to the input position:

Number of the entry Subscriber name (max. 9 characters) Max. baudrate, to begin the connection
Telefon number of the subscriber (max. 16 character, or with “?” select next entry, so you can use both entries and you have max. 31 characters)
Schema of LCD-display for menu item Edit Subscriber

Possible baud rates:

12 – 33K (Standard)

R12 – R33K (Connection with Recall, see chap. Fehler! Verweisquelle konnte nicht gefunden werden.)

M12 - M144 (call to a mailbox, no tele-network device, see chap. Fehler! Verweisquelle konnte nicht gefunden werden.)

ISDN connection with the ISDN-port

RSDN connection with Recall-mode with ISDN-port

If you have to edit a telefon number with more than 16 characters, you can do it with following way:

You edit, for example subscriber 8, edit the telefon number with 15 characters, then the special char “->“, and edit in subscriber 9 the rest of this telefon number.

You can select letters, numbers or other adjustments by using the cursor keys UP/DOWN and the cursor position (if possible) by using the cursor keys RIGHT/LEFT.

If you have activated the return call function (Rxx Baud), you will then have the possibility to input the RC-PNr. (return call-prefix number).

If you have activated the modem call function, you had to configure the connected PC by the TELE-PROFessional-II at the V24-Connector with following options:

19200 Baud, 8 Data-Bit, 1 Stop-Bit, No Parity and RTS/CTS for handshakes

7.6 online action

7.6.1 Hang up

With this menu item, the modem disconnects an existing connection, i.e. it hangs up.

7.6.2 Lift

With this menu item, the modem receives incoming calls. This is only the case if the adjustment “number of signals before picking up“ (which is explained further down) is turned to zero and if the modem does not pick up independently.

7.6.3 Data Mode

In case there is only one telephone line that should be used by a TELE-Network device and for the telephone communication with your co-worker, you can use this telephone line with this menu item for both ends.

The co-worker recognises after picking up a parallelly working telephone the signal of a calling TELE-Network device and can then connect the TELE-Network to the line with this menu item. The device disconnects the existing connection to the telephone, takes over the line and is then in data mode with the calling device. In case of speech mode, this menu item can be used as well in order to connect TELE-Network devices to the line. In this case, however, this function has to be carried out at both devices.



Only hang up the phone after the TELE-Network has displayed CONNECT. Do not hang up the phone if there should be a speech mode after the data mode.

7.6.4 Voice mode

This is the contrasting command to the command “DATA MODE“. It disconnects an existing data connection and the speech connection is released again.



Do not hang up the phone while the data mode is in process.

7.6.5 Init Modem

With this command, modified initialisations are transferred to the modem.

7.6.6 Login Remote

With this action you can repeat the password input a second time, after you had logged in incorrectly.

7.6.7 Transmit programme

This command is used to transmit newer software versions to TELE-Network devices with older versions. Your own programme is loaded to the other TELE-Network device via the telephone line to the programme memory.

In this way, all TELE-Network devices can be updated with the most recent software release.

Attention:

Programmes can only be transmitted between device types that are configured differently. (PLC-TELE?PG-TELE or PG-TELE?PLC-TELE): If the devices are of the same type (PLC-TELE?PLC-TELE or PG-TELE?PG-TELE), there will be the error report “partner does not recognise option“. The TELE-Network device that has received the programme programmes itself after the transmission. While the programming is in process, do not disconnect the device from the voltage supply since then the complete programme becomes invalid. If the programme is invalid, the device reports an ERROR. If this message appears, the device has to send to your local distributor. After the programming, the device executes a warm start and after that it reports with the new software release yet with the same configuration.

7.6.8 Fetch programme

This is the contrasting command to the command “Transmit programme“. More recent software releases are loaded down from the TELE-Network devices. Here, the programme of another TELE-Network device is loaded to your own programme memory via the telephone line.

In this way, all TELE-Network devices are updated to the most recent software release.

Attention:

Programmes can only be transmitted between device types that are configured differently. (PLC-TELE?PG-TELE or PG-TELE?PLC-TELE): If the devices are of the same type (PLC-TELE?PLC-TELE or PG-TELE?PG-TELE), there will be the error report “partner does not recognise option“.

The TELE-Network device that has received the programme, programmes itself after the transmission. While the programming is in process, do not disconnect the device from the voltage supply since then the complete programme becomes invalid. If the programme is invalid, the device reports an ERROR. If this message appears, the device has to send to your local distributor.

After the programming, the device executes a warm start and after that it reports with the new software release yet with the same configuration.

7.6.9 Send OS

This command is used to transmit newer OS versions to TELE-PROFessional-II devices with older versions. Your own OS is loaded to the other device via the telephone line to the programme memory.

In this way, all TELE-PROFessional-II devices can be updated with the most recent software release.

Attention:

Programmes can only be transmitted between device types that are configured differently. (PLC-TELE?PG-TELE or PG-TELE?PLC-TELE): If the devices are of the same type (PLC-TELE?PLC-TELE or PG-TELE?PG-TELE), there will be the error report “partner does not recognise option“. The TELE-Network device that has received the programme, programmes itself after the transmission. While the programming is in process, do not disconnect the device from the voltage supply since then the complete programme becomes invalid. If the programme is invalid, the device reports an ERROR. If this message appears, the device has to send to your local distributor. After the programming, the device executes a warm start and after that it reports with the new software release yet with the same configuration.

7.6.10 Fetch OS

This command is used to get newer OS versions to TELE-PROFessional-II devices with older versions. Your own OS is will be replaced from the other OS of the other device via the telephone line to the programme memory.

In this way, all TELE-PROFessioanl-II devices can be updated with the most recent software release.

Attention:

Programmes can only be transmitted between device types that are configured differently. (PLC-TELE?PG-TELE or PG-TELE?PLC-TELE): If the devices are of the same type (PLC-TELE?PLC-TELE or PG-TELE?PG-TELE), there will be the error report “partner does not recognise option“. The TELE-Network device that has received the programme programmes itself after the transmission.

While the programming is in process, do not disconnect the device from the voltage supply since then the complete programme becomes invalid. If the programme is invalid, the device reports an ERROR. If this message appears, the device has to send to your local distributor.

After the programming, the device executes a warm start and after that it reports with the new software release yet with the same configuration.

7.6.11 Remote Config ON

With item you can activate the configuration of the remote device. If you had activated this item, and you change any parameter in the konfiguration, you change it in the remote device and not in this device you are in front of. This item is so long active, until you deactivate this item.

Attention:

Be sure, that you switch off the remote configuration after ending of the edit, because when you mean, you are ready with the configuration, and you want to edit your own configuration, you overwrite the remote configuration, and so ist possible, you can't get a connect after this operation. Before you start the remote configuration, you should have the same firmware in both devices. Please note, that the called device is a PLC-TELE, because this is only from PG-TELE to PLC-TELE possible.

7.6.12 Remote Config OFF

With this item, you can deactivate the configuration of the other device, the remoet device. After, you are ready for changing the data, go to this menu item, and after select this item, you are on your device, no longer the on other.

Attention:

Be sure, that you switch off the remote configuration after ending of the edit, because when you mean, you are ready with the configuration, and you want to edit your own configuration, you overwrite the remote configuration, and so ist possible, you can't get a connect after this operation. Before you start the remote configuration, you should have the same firmware in both devices. Please note, that the called device is a PLC-TELE, because this is only from PG-TELE to PLC-TELE possible.

7.7 First config

With this menu item it is possible to configure the most important parameter, so that the device is

ready for action expressly

With the cursor keys UP/DOWN you can browse through the menutree. With ENTER you can select the corresponding menu item. With the cursor keys UP/DOWN you can change the setting. By pressing ENTER-key again the selected value will be accepted and stored.

7.7.1 LANGUAGE

- German - menu drive in German
- English - menu drive in English

7.7.2 DEVICE TYPE

- PLC-S5-TELE - The device is next to the plc-control and is connected to it
- PG-TELE - The device is next to the programming device and is connected to it
- PLC-S5 KOR/MUX The device is not connected directly to the plc but via a SIEMENS Multiplexer (PG-BUS-dialling), via a coordinator (e.g. 923 C) or via the IBX-Bus (Bus system of PI with PG-BUS-dialling); (special type of PLC-TELE).

Attention:

The built-in Multiplexer is not active in this operation mode!

- PLC-S7 300/400 This device is connected to a S7-300/400 PLC
- PLC-S7 200 9K6 This device is connected to a S7-200 plc and communicates with 9600 Baud on port PLC-V24
- PLC-S7 200 19K2 This device is connected to a S7-200 plc and communicates with 19200 Baud on port PLC-V24
- PLC-S5-F-Type This device is connected to S5 plc, especially a F-Type

7.7.3 MPI OnBoard Y/N

- Yes The build in mpi/profibus-connector is activated and be used.
- No The build in mpi/profibus-connector is deactivated.

7.7.4 MPI OnBoard Baud

With this menu item, you can define the speed of the connected mpi/profibus. Please check this baudrate because so there is no communication possible or your bus system will be stopped.

7.7.5 OnBoard MPI-Adr

With this menu item you define the address of the TELE-PROfessional-II as a bus client. This address must be a unused address for the bus. If you use the default address "0", be sure that no PG with this address will be in the bus, too.

If you start a connection from the office to the plc, the devices uses the address, you configured in your programming software. If your tele-service is ready, the device uses the configured address.

7.7.6 MPI OnBoard HSA

With this menu item, you configure the HSA (highest station address) of the connected bus. Please note that a too big HSA will slow down the speed of communication to the bus. So, in your software, there will be the baudrate for the bus system configured. Have you configured the "fis

baudrate” to No, so, the baudrate from the programming software is be used. If you’re a beginning to programm a plc it is better for you, because so you are able to change the baudrate as you like. Have you configured this item to “Yes”, the device uses the configured baudrate of the TELE-PROFessional-II and ignores the baudrate from the software.

7.7.7 Fix OnBoard Baud

While you have tele-service to a plc, the PLC-Tele is for your software a PC/MPI-adapter. So, in this driver you can configure the baudrate of your bus system. Have you configured the “fix baudrate” to “No”, the device gets the baudrate from your software and will use it. This is an advantage for you, so you can change the baudrate from the office you want, and no one must chage the configuration of the plc.

If you have configured it to “Yes”, the TELE-PROFessional-II will use the baudrate of its own configuration. The advantage for this is, that you can’t define a baudrate greater than 1.5 MBaud in the programming software. So, you are connected to bus systems with baudrates 6 MBaud or 12MBaud and so, you can tele-service these bus systems. The baudrate is fixed.

7.7.8 MPI/Profibus

- MPI-Bus The connected bus-system is a MPI-bus
- Profi DP/Stand. The connected bus-system is a profibus with the profile DP/Standard
- Profi DP/FMS The connected bus-system is a profibus with the profile DP/FMS

7.7.9 MPI-cable Baud

The in this menu item configured baudrate is the baudrate the connected PC communicates with the PG-TELE. The siemens software only provides baudrate up to 38400, so you can use a tool called “mpi-speed” to setup the baudrate up to 115200 Baud. This baudrate you have to configure in your PG-TELE, too.

7.7.10 ISDN EAZ/MSN

The so called EAZ/MSN is the device number of the TELE-PROFessional-II on this telephone plug. For the ISDN-S0-bus, every client must have this address, he will be recognized through this number. So, the TELE-PROFessional-II knows, that he will be meant and it will take the call. Often, the number of the telephone plug is also this number. Please contact your supervisor of the telephone system, to get this information. So, he can also change the ISDN-property to modem, this will be needed for this telephone plug.

A special part is the system of Siemens, called HICOM. With a “optiset E ISDN adapter” you don’t need a MSN/EAZ number. If you have defined one, the device doesn’t work with this system.

7.7.11 Ethernet-IP

If you want to use the TELE-PROFessional-II in your company network, you should configure a IP-address in this device. This IP-address is divided into 4 blocks, so you have to configure this address like 192.168.1.100. Between these 4 blocks you can change with ? and ?. The input will be finished with the ENTER-key.

After RFC1918 free IP-addresses:

10.0.0.0 - 10.255.255.255

172.16.0.0 - 172.31.255.255

7.7.12 ISDN-IP

The communication between each device is a ppp-protocoll, so every device need a different ip-address. As you can connect with ISDN or analogue, so you need 2 different ip-addresses. So, every PG-TELE needs another address like the PLC-TELE. While, you don't need a communication between PLC-TELE and other PLC-Tele (PLC-TELE-option), the addresses can be the same. Please configure this address like 176.16.1.1. This address is also divided in 4 blocks. Between these 4 blocks you can change with ? and ?. The input will be finished with the ENTER-key.

Please change only this IP-address for your PG-TELE, because all other delivered devices has the same address. So you don't have to make any thought about this menu item.

7.7.13 Analog IP-Adr.

The communication between each device is a ppp-protocoll, so every device needs a different ip-address. As you can connect with ISDN or analogue, so you need 2 different ip-addresses. So, every PG-TELE needs another address like the PLC-TELE. While, you don't need a communication between PLC-TELE and other PLC-Tele (PLC-TELE-option), the addresses can be the same. Please configure this address like 172.16.1.2. This address is also divided in 4 blocks. Between these 4 blocks you can change with ? and ? . The input will be finished with the ENTER-key. Diese IP-Adresse wird in 4 Blöcke aufgeteilt. Bitte geben Sie diese Adresse zum Beispiel 176.16.1.1 ein. Zwischen den Blöcken können Sie mit ? und ? wechseln. Die Eingabe wird mit der Enter-Taste angeschlossen.

Please change only this IP-address for your PG-TELE, because all other delivered devices have the same address. So you don't have to make any thought about this menu item.

7.7.14 Analogue modem

- German(complex) The connected telephone system is complexed.
- USA(600R) The connected telephone system is 600R. With this selection you should work in the USA and the other world, but not in Europe.

If the modem picks up but the modem noise is not hearable then you should change the modem type!

7.7.15 Dialmode

- Tone: The modem dials with the modern MFV-system. That means you hear while dialing a little melody.
- Pulse: The modem dials with pulses. That means you hear while dialing the noise of a relais.

7.7.16 Extension mode

- YES The device is not connected directly to the line. You then need either a prefix number or a certain key combination to get to the line.
- NO The device is either connected directly to the line, i.e. you do not need a prefix number in order to get a line or the device is within a private branch exchange and should call a partner within this system.

7.7.17 Outline Code

With these possible figures you can config the device to get a telefon line:

0,1,2,3,4,5,6,7,8,9,!,“,“,/,>,#,X,W,*

7.7.18 Rings before Lifting

• = 0



With this adjustment, the modem does not pick up independently. With the menu item “pick up“ you have to make the modem pick up manually.

• = 1-5

Modem picks up after the adjusted number of rings.

7.8 Menuitem Configuration

7.8.1 Device Type

With this option, you can configure the TELE-PROFessional-II in its ground configuration. This configuration has following items:

- PLC-S5-TELE The device is next to the plc-control and is connected to it
- PG-TELE The device is next to the programming device and is connected to it
- PLC-S5 KOR/MUX The device is not connected directly to the plc but via a SIEMENS MUX757 (PG-BUS-dialling), via a coordinator (e.g. 923 C) or via the IBX-Bus (Bus system of PI with PG-BUS-dialling); (special type of PLC-TELE)

Attention: The built-in Multiplexer is not active in this operation mode!

- PLC-S7 300/400 This device is connected to a S7-300/400 plc
- PLC-S7 200 9K6 This device is connected to a S7-200 plc and communicates with 9600 Baud on port PLC-V24
- PLC-S7 200 19K2 This device is connected to a S7-200 plc and communicates with 19200 baud on port PLC-V24
- PLC-S5-F-Type This device is connected to S5 plc, especially a F-Type
- PLC-PILZ This device is connected to PILZ PSSxxx plc, you should connect the plc with its own programming cable.
- PLC-Allen-Bradley This device is connected to a Allen-Bradley SLC5 plc and communicates with the DH485 or DF-1 mode.

7.8.2 Device name

If you input the a device name as for example the installation name, number or place, the usage of several TELE-Network devices and their management is made easier. The device name can be asked for with the option “remote name“ and it can be shown on the display.

By pressing the UP/DOWN keys, numbers and letters can be edited and the position of the cursor can be changed by using the LEFT/RIGHT key. Press ENTER in order to finish and save the input of the device name (max. 9 chars).

7.8.3 Router Mode

6.2.3 Router Mode

If you activate this menu item, you can use the TELE-PROFessional-II as a “router” for our network. In both devices this option must be activated. The IP-address of the PG-Tele is the gateway address of the connected PC, the IP-address of the PLC-TELE the gateway address of all clients on this network. The IP-address of the office side must be not the same range of the plc side.

IP office side: 192.168.004.xxx

IP plc side: 192.168.001.xxx

6.2.4 MPI OnBoard

7.8.4 MPI OnBoard

7.8.4.1 MPI OnBoard Y/N

Here you can activate the built in MPI/Profibus-connector. In the following items, you can configure this connector.

7.8.4.2 MPI OnBoard Baud

With this menu item, you can define the speed of the connected mpi/profibus. Please check this baudrate because so there is no communication possible or your bus system will be stopped.

7.8.4.3 OnBoard MPI-Adr.

With this menu item you define the address of the TELE-PROFessional-II as a bus client. This address must be a unused address for the bus. If you use the default address “0”, be sure, that no PG with this address will be in the bus, too.

If you start a connection from the office to the plc, the device uses the address, you configured in your programming software. If your tele-service is ready, the device uses the configured address.

Possible addresses are from 0 up to 126.

7.8.4.4 MPI OnBoard HSA

With this menu item, you configure the HSA (highest station address) of the connected bus. Please note, that a too big HSA will slow down the speed of communication to the bus. So, in your software, there will be the baudrate for the bus system configured. Have you configured the “fix baudrate” to No, so, the baudrate from the programming software is used. If you’re a beginning to program a plc it is better for you, because so you are able to change the baudrate as you like.

Have you configured this item to “Yes”, the device uses the configured baudrate of the TELE-PROFessional-II and ignores the baudrate from the software.

Possible Values: 15, 31, 63 und 126

7.8.4.5 Fix OnBoard Baud

While you have tele-service to a plc, the PLC-Tele is for your software a PC/MPI-adapter. So, in this driver you can configure the baudrate of your bus system. Have you configured the “fix baudrate” to “No”, the device gets the baudrate from your software and will use it. This is an advantage for you, so you can change the baudrate from the office you want, and no one must change the configuration of the plc.

If you have configured it to “Yes”, the TELE-PROFessional-II will use the baudrate of its own

configuration. The advantage for this is, that you can't define a baudrate greater than 1.5 MBaud in the programming software. So, you are connected to bus systems with baudrates 6 MBaud or 12MBaud and so, you can tele-service this bus systems. The baudrate is fixed.

7.8.4.6 MPI/Profibus

With this menu itm, you define the profile of the connected mpi/profibus. Please note, that you configure the correct profile for the connected bus system, because the timing will be changed, not, that your bus system will be paused if you uses the wrong profile.

MPI-Bus - The connected bus-system is a MPI-bus

Profi DP/Stand. - The connected bus-system is a profibus with the profil DP/Standard

Profi DP/FMS - The connected bus-system is a profibus with the profil DP/FMS

7.8.5 PC/MPI cable

7.8.5.1 MPI-cable Baud

The in this menu item configured baudrate is the baudrate the connected PC communicates with the PG-TELE. The siemens software only provides baudrate up to 38400, so you can use a tool called "mpi-speed" to setup the baudrate up to 115200 Baud. This baudrate you have to configure in your PG-TELE, too.

More information to this software you will found under www.tpa-partner.de/mpivers.htm

When using the device as PLC-TELE and connecting a serial<>mpi-converter to the PLC/V.24 connector of it the device should know at which baudrate the converter is responsive.

7.8.5.2 MPI cable Adr.

If your buildin mpi/profibus-port is not used or you want to connect an 2nd bus system, the device need a own address like every other client in the system. You should proof, that you use a address no one other used it.

Possible Values: 0 up to 31.

7.8.5.3 Cable HSA

When you are using a serial<>mpi-converter like a MPI/PPI-cable, the device should know the correct HSA. So, you define it with this menu item. So, with the TELE-PROFessional-II you are able to communicate with 2 bus systems. You make the choice, which system you want to connect it.

Possible Values: 15, 31, 63 und 126.

7.8.6 S7-Config (ONLY for PLC-TELE)

7.8.6.1 PLC MPI address

Here is write down the mpi-adress for the plc, which you need for following options:

- Pager-Option
- Fax-Option
- SPS-Option

If you haven't configured an mpi-adress, the device doesn't know which plc gives him the order to

dial, to send a fax. If you have configured the S7-poll-list, so this entry is not active.

7.8.6.2 Poll list

If you have more than one plc's, which have order to fax, send sms for the tele-network device, so you can edit this list with the addresses of this plc's. This list is be reed for following options:

- Pager
- Fax
- SPS/ASCII-TELE

If you edit only a „0“ in this list, so the device uses only the PLC MPI address-entry.

7.8.7 PG-MUX-Mode (Only for PLC-TELE and S5)

With this menu item, you can use the Multiplexer that is integrated in the TELE-Network device. For the operation with the Multiplexer, there are the following adjustments:

- **PG-MUX** Multiplexer between telephone line and the PG-Port is active (standard). When you have a telephone connection there will be possible to communicate to the plc via telephone and directly on the PLC-TELE.
- **PG <-> AG** The PG-Port of the PLC-TELE is connected to the PLC-Port, the integrated multiplexer is off. The data from the PG-Port will be transferred directly and without time controll to the PLC-Port. After a telephone connect this communication will be broken, so the communication above telephone line can use maximum speed and performance. After hang up the line the PG-Port top PLC-Port communication will be driven, again.
- **PG-MUX-C** The PG-Port of the PLC-TELE is connected to the PLC-Port, the integrated multiplexer is off. The data from the PG-Port will be transferred directly and with time controll to the PLC-Port. After a telephone connect this communication will be broken, so the communication above telephone line can use maximum speed and performance. After hang up the line the PG-Port top PLC-Port communication will be driven, again.

This mode is only for S5-Mode of the Tele-Network-Device in use.

7.8.8 IP Address

7.8.8.1 Ethernet-IP

Here you configure the IP address of the TELE-PROF to access a network connection or a PC. The connection to the network socket is done using a patch cable that is assigned 1 to 1. To direct connection to the PC using a so called cross-over cable.

If you want to use the TELE-PROFessional-II in your company network, you should configure a IP-address in this device. This IP-address is divided into 4 blocks, so you have to configure this address like 148.149.1.100. Between these 4 blocks you can change with ? and ? . The input will be finished with the ENTER-key.

The default IP-address of this device is 192.168.1.54.

According to RFC1918 free IP-addresses:

10.0.0.0 - 10.255.255.255

172.16.0.0 - 172.31.255.255

192.168.0.0 - 192.168.255.255

7.8.8.2 with Eth-Netmask

Here you can configure, if you want to work for the IP-communication with a subnet-mask. If you want, you should select a correct subnet-mask for your system, because wrong subnet-mask may cause problems in the communication.

Possible Values: Yes and No

If you choose NO the Subnetmask will be automatically calculated based on the IP-Address.

7.8.8.3 Ethernet-Netmask

Here is the subnet-mask if you want to use it, to define. Please note, that you use a mask same in the current network in your system.

Between these 4 blocks you can change with ? and ? . The input will be finished with the ENTER-key.

The TELE-PROFessional-II uses the subnet-mask: 255.255.255.0

ISDN IP Address

The communication between each device is a ppp-protocoll, so every device need a different ip-address. As you can connect with ISDN or analogue, so you need 2 different ip-addresses. So, every PG-TELE needs another address like the PLC-TELE. While, you don't need a communication between PLC-TELE and other PLC-Tele (PLC-TELE-option), the addresses can be the same.

Please configure this address like 172.16.1.1.

This address is also divided in 4 blocks. Between these 4 blocks you can change with ? and ? . The input will be finished with the ENTER-key.



Please change only these IP-address for your PG-TELE, because all other delivered devices has the same address. So you don't have to make any thought about this menu item.

7.8.8.4 Analog IP-Address.

The communication between each device is a ppp-protocoll, so every device need a different ip-address. As you can connect with ISDN or analogue, so you need 2 different ip-addresses. So, every PG-TELE needs another address like the PLC-TELE. While, you don't need a communication between PLC-TELE and other PLC-Tele (PLC-TELE-option), the addresses can be the same.

Please configure this address like 172.16.1.1.

This address is also divided in 4 blocks. Between these 4 blocks you can change with - and - . The input will be finished with the ENTER-key.



Please change only these IP-address for your PG-TELE, because all other delivered devices has the same address. So you don't have to make any thought about this menu item.

7.8.9 Modem

7.8.9.1 Extension

There are only two possible adjustments:

- YES The device is not connected directly to the line. You then need either a prefix number or a certain key combination to get to the line.

- NO The device is either connected directly to the line, i.e. you do not need prefix number in order to get a line or the device is within a private branch exchange and should call a partner within this system.

7.8.9.2 Outline Code

Here, the key combination or the prefix number that are necessary for the connected telephone installation or each telephone set are set in order to call the line.

Possible Values:

0,1,2,3,4,5,6,7,8,9,!,“,“,/,>,#,W,*

Numbers 0 to 9 If you have to dial for example “0“ in order to get a line, you have to input “0“ here

Earthing key (R) The earthing key can be input with the mathematical sign (>)

Flash-key (#) The flash-key corresponds to the normal exclamation mark (!)

Break 1/8sec It is the / (Slash)

Break 2sec It is the , (comma)

7.8.9.3 Count of Rings

- = 0



With this adjustment, the modem does not pick up independently. With the menu item “pick up“ you have to make the modem pick up manually.

- = 1-5

Modem picks up after the adjusted number of rings.

7.8.9.4 Analogue Modem

The builtin modem can be used world wide. It has 2 approvals, the european (TBR21) and the american (FCC). The different is, that the american system has its base with 600 Ohm, the european system a complex system.

- German(complex) The connected telephone system is complexed.
- USA(600R) The connected telephone system is 600R. With this selection you should work in the USA and the other world, but not in Europe.

If the modem picks up but the modem noise is not hearable then you should change the modem type!

7.8.9.4.1 6.2.9.5 Dial mode

In this menu item, you can choose between two different dialling methods:

- Tone The modem dials with the multi-frequency dialling method (most common method for telephone installations, in the public telephone network only used with digital exchanges)
- Pulse The modem dials with the pulse method (sometimes, this is still used in older telephone installations, most common method in the public telephone network in Germany)

7.8.9.4.2 Busy tone detection

There are only two possible adjustments:

- YES The device is not connected directly to the line. You then need either a prefix number or a certain key combination to get to the line.
- NO The device is either connected directly to the line, i.e. you do not need prefix number in order to get a line or the device is within a private branch exchange and should call a partner within this system.

7.8.9.4.3 Speaker

So, if you have very often connections to a other TELE-PROFessional-II, it is possible to switch the speaker off. If you have select this item, you will don't hear anything from the speaker, until, you switch the menu item back.

7.8.9.4.4 Hangup hearing

With this menu item, you adjust whether you want to hear how the modem hangs up. If so, you can also determine a time span (in seconds):

- 0 second: You cannot hear how the modem hangs up.
- 1 to 10 seconds: You can hear the modem hanging up for the duration of 1 to 10 seconds

7.8.9.4.5 Baud rate manual

This entry of the Baud rate is only valid for data and speech operation. When switching from speech to data operation, the modem has to start with an initial value (initial Baud rate) in order to build up the connection. This initial Baud rate corresponds to the "Baud rate manual".

Following items are possible:

12: 1200 Baud
 24: 2400 Baud
 48: 4800 Baud
 96: 9600 Baud
 33K: 33600 Baud

7.8.9.4.6 Analogue on ISDN

Here, with this menu item it is possible for TELE-PROFessional with a hardware version of 1.1 to communicate with a analogue partner although it is connected to a digital ISDN port.

So, with this feature, you don't have to ask your customer, do they use analog or digital, you only have to select it in this menu item, you are possible to drive both.

Possible Values: YES and NO

After changing this menu item, the TELE-PROFessional-II must be restarted.

7.8.9.4.7 ISDN aLaw/uLaw

For the connection with „analogue on ISDN“ you should know, which protocol is for the digitalization of the analogue system used.

Following protocols are provided with the TELE-PROFessional-II:

- aLaw: europe / north america
- uLaw: south america

After changing of this item, you must restart the device again.

7.8.9.5 ISDN

7.8.9.5.1 ISDN-protocol

When connecting the device to the ISDN network is important to note that the correct protocol is used. There are two different protocols possible:

- DSS1 (Euro-ISDN)
- 1TR6 (nationales ISDN)

The National ISDN is not more in use today. All new ISDN lines will be equipped with the well-known Euro-ISDN DSS1 protocol. With this menu item, the protocol can be switched. You must restarted again the Tele-Prof after change the configuration

7.8.9.5.2 ISDN EAZ/MSN

This so-called EAZ / MSN is the final device number of the TELE-PROFessional II on this telephone line. Since in the ISDN S0 bus, each participant should be accessible, it is identified by this number. Now the TELE-Professional II know that it called and takes the call. In many installations, very often, the telephone direct dial number, or even the complete telephone number same as the EAZ / MSN. Please talk to each case with the plant manager, who can give you the correct EAZ / MSN. Des Furthermore, he can change the connection on the ISDN modem characteristic that is necessary.

A peculiarity is the system HICOM-system from Siemens . With a "Optiset E ISDN adapter" this structure does not require MSN / EAZ. Once you have one defined, the device will not work in this connection.

7.8.10 Extern

7.8.10.0.1 ext. modem

You can drive the TELE-PROFessional-II with analogue or digital telephone system, you can drive it also with handy or a external modem. Therefore, you have to connect the handy/modem to the PLC-V24-port of the Tele-PROFessional-II.

With this item you change the communication path to the external modem.

7.8.10.0.2 Ext. modem baud

Here, you can define the serial speed for the communication to a defined external modem or handy. Possible values are from 9600 up to 115200 baud.

If you connect a handy to the device, please note, that a lot of handys onlay provide baudrates of 57600 or 19200 baud. That for the connection used PLC-V24-port has the same pinning like a PC, you can try to communicate with your pc and a terminal software to this modem, to get the information of the baudrate.

Connect the handy/modem to your PC, start a terminal software (Hyperterminal, ZOC,...) and define the communication baudrate you think its correct. Now, after the activation of this, type in your software an "AT" and press Enter. Get you an "OK" for answer, the selected baudrate is ok, it is provided from the modem/handy. So, with this way, you can get the maximum possible baudrate for communication. This baudrate, you select in this menu item, connect the device to the TELE-PROFessional-II and then restart it.

Now, the devices begins to restart and the connected external modem/handy is the standard

modem for the analog communication.

7.8.11 Connection

7.8.11.1 Recallmode (Only for PLC-TELE)

Here, you can turn the return call mode on or off. Once the parameters of the telephone are correctly configured in the PLC-TELE device, it is the task of this unit to call back the telephone number transmitted by the PG-TELE.

Possible adjustments: YES
NO



This menu item is only necessary for the PLC-TELE.

7.8.11.2 Recallnumber (Only for PG-TELE)

Here, you can input the prefix number plus the number with which the TELE-Network device that requires a return call can be reached.

Possible Entries: max. 16 chars Telephonenumber



This menu item is only active with the PG-TELE.

7.8.11.3 Max. Connect time

With this menu item, you determine the maximum duration of the connection. After this maximum, the connection is disrupted. The duration is set in minutes. The maximum is 60 minutes. This item will be ignored, if you define this time with "0".

7.8.11.4 Max. Idletime

Here, you determine the maximum duration of the idle operation of the PG. The time span starts when there is no exchange of data between the plc and the PG anymore. After the maximum time is up, the connection is disconnected. The duration is set in minutes. The maximum is 60 minutes. This item will be ignored, if you define this time with "0".

7.8.12 Access code

7.8.12.1 PIN device local

Password for the protection of the configuration of your TELE-Network device (PLC-TELE or PG-TELE). The parameters of the device can only be changed after the input of the correct password.

(local => means the device in front of you)
Max. 6 characters

7.8.12.2 PIN plc local

Password of the device that is located at the installation (PLC-TELE). This password protects the connected plc-control against unauthorised access via the telephone line. Without inputting a password, "PLC-OFFLINE" is reported via the telephone line and then there is an access is not possible.

(local => means the device in front of you)

Max. 6 characters

7.8.12.3 PIN device remote

Input of the password "PIN device local" at the partner device with which you are connected via the telephone line. Input only possible if the partner device does not have a password protection or if the user knows the password.

(Remote => means the device you have access to via the telephone line)

Max. 6 characters

7.8.12.4 PIN plc remote

Input of the password "PIN plc local" at the partner device with which you are connected via the telephone line. Input only possible if the partner device does not have a password protection or if the user knows the password.

(Remote => means the device you have access to via the telephone line)

Max. 6 characters

The access to a TELE-Network device that is protected by a password via the telephone line (see Login Remote) or at the device itself is only possible if the user knows the password.



Please do not forget your password or keep it at a safe place. In case you forget the password, you have to send the device back to the producer because it has to be reset in its original state. This cannot be done by the customer or the partner or by telephone line!

7.9 Menu item Options

7.9.1 Pager-TELE (Only at AG-TELE)

7.9.1.1 PAGER-operation

With this menu item, you can turn the PAGER-TELE operation on or off.

7.9.1.2 PAGER-flag

With this menu item, you can input the common flag word for the data communication.



Use even numbers only (e.g. FW 122)! Only 0 to 254.

7.9.1.3 PAGER-COM-DB

With this menu item, you can set the communication data base (DB) in order to set parameter values to the data flow and source at the PAGER-operation.

7.9.2 PLC/ASCII-TELE

This menu item is only activated if the TELE-Network device has a plc-option or an ASCII-option.

7.9.2.1 Modem Control

In this menu item, you can adjust how the communication between the plc and the modem is carried out:

NO: plc does not have the possibility to control the modem
with flag word: PLC-TELE-LINK and plc have a common flag word for controlling
dwith digital I/O: PLC-TELE-LINK and plc communicated via the digital I/O-level

7.9.2.2 Modem-flag

In case you selected “with FW“ (with flag word) in the menu item “modem control“, you can now enter the common flag word for the modem control.



Use even numbers only (e.g. FW 120)! Only 0 to 254.

7.9.2.3 SPS-TELE-operation

With this menu item, you can turn the PLC-TELE operation on or off.

7.9.2.4 SPS-TELE-flag

With this menu item, you can input the common flag word for the data communication.



Use even numbers only (e.g. FW 122)! Only 0 to 254.

7.9.2.5 SPS-TELE-COM-DB

With this menu item, you can set the communication data base (DB) in order to set parameter values to the data flow, source, and target at the PLC-TELE operation.

DB1 to 255, DW 0 to 998.

7.9.2.6 ASCII-operation

With this menu item, you can turn the ASCII-TELE operation on or off.

7.9.2.7 ASCII-flag

With this menu item, you can set the common flag word for the data communication.



Use even numbers only (e.g. FW 122)! Only 0 to 254.

7.9.2.8 ASCII-COM-DB

With this menu item, you can set the communication data base (DB) in order to set parameter values to the data flow, source, and target at the ASCII-TELE operation.

DB1 to 255, DW 0 to 998.

7.9.3 FAX-TELE

This menu item is only activated if the TELE-Network device has a FAX-option.

7.9.3.1 FAX-operation

With this menu item, you can turn the FAX-TELE operation on or off.

7.9.3.2 FAX-flag

With this menu item, you can input the common flag word for the data communication.



Use even numbers only (e.g. FW 122)! Only 0 to 254.

7.9.3.3 FAX-COM-DB

With this menu item, you can set the communication data base (DB) in order to set parameter values to the data flow and source at the PLC-TELE operation.

DB 1 to 255, DW 0 to 998.

7.9.3.4 Resolution

With this menu item, you can select the resolution of the fax transmit. Possible parameters are:

- heavy
- fine

7.9.3.5 FAX-POLL-DB

In this menu item you define the communication-DB for polling. It has the same building like the FAX-KOM-DB. But it is only activ, when the TELE-LINK-Network device gets a fax call with a blank paper.

So you call the TELE-LINK-Network-device with your fax, send him a blank page, and the device will call back your transmitted fax number with the data configured in the FAX-POLL-DB.

DB 1 to 255, DW 0 to 998.

7.10 Menu item Special

7.10.1 To PG/PLC interface?

In this menu item it is decided at the PG-TELE whether the communication at the PLC-TELE is made via the PLC or via the PG-socket.

Normally, the PG-TELE communicates with the plc via the PLC-TELE and the PLC-socket. If there is for example a 2nd plc connected to the PLC-TELE at the PG-socket, then the PG-TELE can communicate with the plc at the PG socket of the PLC-TELE with this adjustment.

This menu item is also valid for the H1, L1 and L2 communication if these software options are released. In this case, the CP is connected to the PG-socket of the PLC-TELE.

The following adjustments are possible:

- Connect PG-socket with PLC-socket normal setting
- Connect PG-socket with PG-socket 2nd plc or switch to CP connection

7.10.2 Break Tx-line

This menu item is valid for example for turning on the H1. In case the connected CP does not react anymore to the communication, a break with adjustable duration can be sent to the CP. (Duration in seconds, 0 to 30)

7.10.3 S7-200 on

If you want to make remote maintenance to a S7-200 CPU, after establishing the telephone connection should be changed the mode of the S7-200 using this menu item. Important is that the device type in the PLC-TELE is set to AG-S7 200. The display will indicate: S7-200 on. By pressing the del key, left, this mode is terminated.

7.10.4 Direkt-Mode

You can select this mode in order to realise a data transmission that does not correspond to a communication protocol specific for controls as for example the AS511-protocol of Siemens-plcs.

If the Tele-Network devices are connected to the network, you can activate the mode Direct / Transparent. Now we have a direct link between the female connector of PEGE-TELE and the female connector of AG-TELE. That means, data which are received from PG-TELE were immediately send out unchecked on PLC-TELE.. This allows you to transfer files from PC to PC, a connected OP configure or simply transfer or execute a protocol to another PLC, which is not compatible with the Tele-Network devices



The direct mode can be activated only from the PG-TELE! Furthermore, it is a insecure transmission medium without any special checking. There is so a pure modem line with modem security (Error correction according to standard modem). For run-time errors, we can do not guarantee.

7.10.4.1 Source-com

With this menu item, the device is configured for the so-called transparent mode. The TELE-Network device is adjusted to parameters that are specifically made for transmission:

- PG or PLC (-socket) connection (Input) from the dialling TELE-LINK
- Baudrate 300, 1200, 1800, 2400, 4800, 9600, 19200 and 38400 Bd.
- Number of data bits 5-8
- Parity N (No), E (even) and O (odd)
- Number of stop bits 1, 1.5 and 2 bits

7.10.4.2 Dest.-com

In this menu item, the device is configured for the so-called transparent mode. The TELE-Network device is adjusted to parameters that are specifically made for transmission:

- PG -or PLC (-socket) connection (input) from the TELE-LINK that is called
- Baud rate 300, 1200, 1800, 2400, 4800, 9600, 19200, 38400 Baud
- Number of data bits 5 to 8 bits
- Parity N (none), E (even), O (odd)
- Number of stop bits 1, 1.5 and 2 bits

7.10.4.3 Direct Mode ON

If there is a connection between PG-TELE and PLC-TELE, the direct mode can be turned on with this menu item. This mode is valid until the transmission is disconnected by using the LEFT key.

7.10.4.4 Direct Mode On with HW

If there is a connection between PG-TELE and PLC-TELE, the direct mode can be turned on with this menu item. This mode is valid until the transmission is disconnected by using the cursor-left key. With this mode, there is a hand shaken connection between the plc-tele and the device, you want to communicate. Here is the DTR and DSR line used.

7.10.5 Tele-Switch

With this option the operation from TELE-switch is supported. The TELE-switch can be operated in the AG or PG socket of a Tele-Network device that is configured as AG-TELE. DIP 3 must be on ON, DIP 1 and DIP 2 according to the table. The TELE-Network device supports in this operating mode only the slave number 1 to 16.

In the PG-TELE, the following adjustments have to be made for calling a channel:

1st line: TELE-SWITCH

2nd line: xx to ChaNr: yy xx = PG or PLC (with UP/DOWN key)

yy = Channel 00 (fed-through mode finished)

yy = Channel 01 to 16 (call corresponding slave number)

After this input, the question "Switch? YES/NO" is displayed:

- YES Input is taken over, channel is called
- NO Input is dismissed, present condition remains

If there is a call, then it is reported whether the call or the transformation respectively were successful or not. After connection clear-down, the SWITCH is automatically deactivated.

7.10.6 IBX-Test (Only for PLC-S5 KOR/MUX)

If you have selected the device type KOR/MUX-TELE, you have now the possibility, to test the connected pg-bus. First you select Test IBX: xx; xx stands for the pg-bus-number 1 to 31. The tele tells you, if the selected slave is connected. Automatic the tele tries to connect the plc and gives you an OK if the Connection is good, or gives you the message, where the failure is.

7.10.7 Restart Prof-II

With this menu item you can reset the TELE-PROFessional-II. If you have an active telephone call, and you should reset the device on the other side, you activate the remote configuration and select this item. So, then the telephone line will be broken, but this is for a reset, normal. With this reset, the remote configuration will be also off.

7.11 Menu item Language

By using the UP/DOWN key, you can select between German and English menu drive.

7.12 Menu item Info

7.12.1 Version

This menu item informs you about the software release of your TELE-Network device.

7.12.2 Remoteversion

This menu item informs you about software release of the called TELE-Network device. If there is a more recent or older release, a software update can be made. (see chapter 411H411H417H417H417H5.2.2.5.7 and Fehler! Verweisquelle konnte nicht gefunden werden.).

7.12.3 Remotename

In this menu item, the device name of the called device is displayed. In this way, can check with which installation a connection has been built up. This only works on the condition that the called device has a device name. (see chapter 412H412H418H418H418H6.2.2 Fehler! Verweisquelle konnte nicht gefunden werden.

7.12.4 Serial number

With menu item, you can check the serial number of the TELE-PROFessional. Normal, this number is on the back side of the device, and so, you don't need to build out the device to get this information.

7.12.5 MAC-Address

Here, you can see the internal MAC address of the TELE-PROFessional. This is an information you can use if you are looking for a problem in our network system.

7.12.6 Copyright

Copyrights of the TELE-Network devices:

© 1994 - 2008 by PI & TIS

7.13 Ports used

Port	Typ	Description
9998	TCP	Transfer Firmware
9999	TCP	Remote maintenance (between 2 devices)
9999	UDP	Remote maintenance (between 2 devices)
80	TCP	Web browser access
102	TCP	CP-Mode (RFC1006)

8 Field of Application

(Configuration- and Connection examples)

8.1 Remote Maintenance

8.1.1 Via telephone line

8.1.1.1 Description

A (Remote-)TELE-PROFessional II, which is connected to the PLC will be called from the local TELE-PROFessional II. Consequently you can access your PLC from your PC via telephone line quick and easily.

8.1.1.2 Requirements

Hardware: 2x TELE-PROFessional II (eg.see connection options)

The remote maintenance can be also realized with only one TELE-PROFessional II
Read the this chapter "Win-TELE-PROF as replacement for PG-Tele" weiter.

8.1.1.3 Create Subscriber

The TELE-PROFessional II has a phone-book similar to a mobile phone in which you can store up to 197 entries.

To create a new entry or edit an existing entry choose the menu item Edit subscriber.

8.1.1.4 Configuration PG-TELE

The Device which is connected to your PC must be configured as PG-TELE under Configuration - Device type.

8.1.1.5 Configuration PLC-TELE

The Device which is connected to the PLC must be configured as PLC-TELE depending on which PLC you want to control.

The automatic pick up should also be enabled. For this you have to set the value under Configuration / Modem / Count of Rings to 1.

8.1.1.6 Connection establishment

To establish a connection the number of the PLC-TELE has to be stored in the phone-book of the PG-TELE. Select the menu item Select subscr. and then the entry which includes the number of the PLC-TELE to cause a phone-call.

8.1.1.7 Accessing PLC

Now you can communicate with the PLC as if it was connected to your PC directly. For further information please read chapter "implementation".

9 Win-TeleProf as replacement for PG-TELE

9.1 What is Win-TeleProf?

Win-TeleProf is a Software, which simulates the PG-TELE in the remote-maintenance via telephone. Thereby the remote-maintenance can be realized with only one TELE-Network-device. Though you will need an additional external 56k Modem and the Win-TeleProf Software on your local PC.

9.2 Supported PLC-Controls

- Simatic S5
- Simatic S7-300/400
- Pilz PSS

Concerning of the different PLC-controls there are no distinction to do in the configuration. The software automatically adjust himself for each PLC-type. Please note, that there is a own virtual COM-Port for S5+Pilz as well as for S7 and Direkt-Mode.



For the remote-maintenance the carrier frequency must be constant. Some notebook soft modems neglect that, because they mainly are designed for surfing the internet, where the frequency is given by the provider. Our advice is to use an external modem instead.

9.3 Requirements

Hardware:

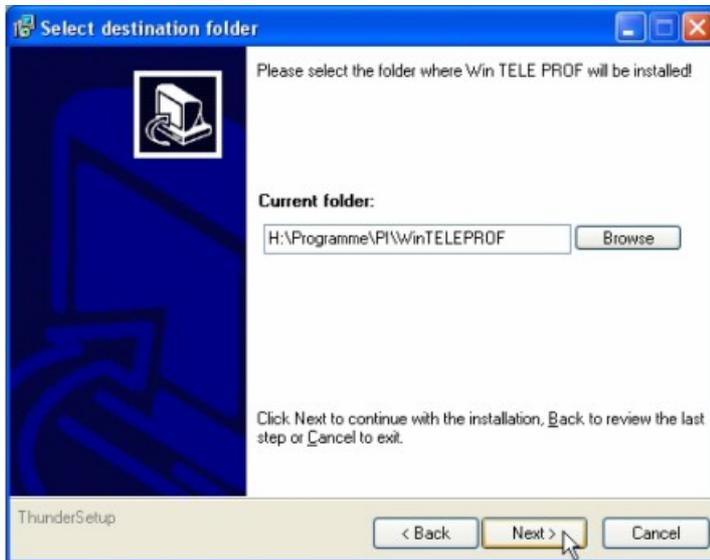
- 1x TELE-Network-device
- 1x 56k Modem external

Software:

- 1x Win-TeleProf

9.4 Installation

1. Please download from the you known web-site the "Win-TELEPROF-software" and save the file on your PC.
2. Run the file and follow the instructions.



3. After choosing language the welcome dialog appears in the chosen language.

Click „Next“ to define the installation path.

This can be done by clicking „Browse“.

If you are ready press „Next“ to continue.



4. In the next dialog you can choose the program folder for your start menu.

Continue with „Next“.

5. In the following dialog choose the kind of installation and click „Next“ to continue.

Now indicate your name and the name of your company and confirm by clicking „Next“.



6. Now a short summary in which you can review your entries.

7. Wait until the installation was completed.

8. Finish the installation after copy the files by pushing on „Exit“.

9. The PC have to get restarted after the installation is complete. Therefore let the checkbox "Reboot now" checked.

9.5 Communication establishment

1. When starting the software for the first time the Settings-dialog will appear. Here you can define the virtual COM Ports. This dialog can be opened any time by clicking „Settings“.

S7 COM:

Via this COM Port you can access the S7 which is connected to your PLC-TELE

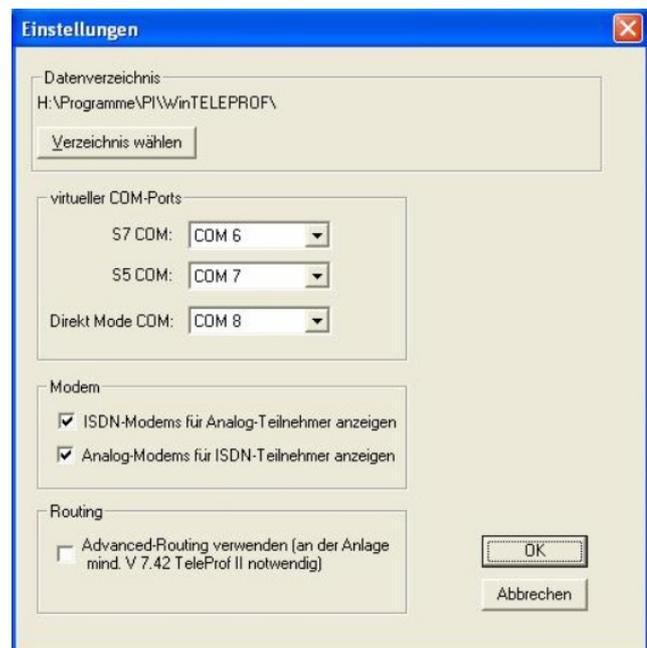
S5 COM:

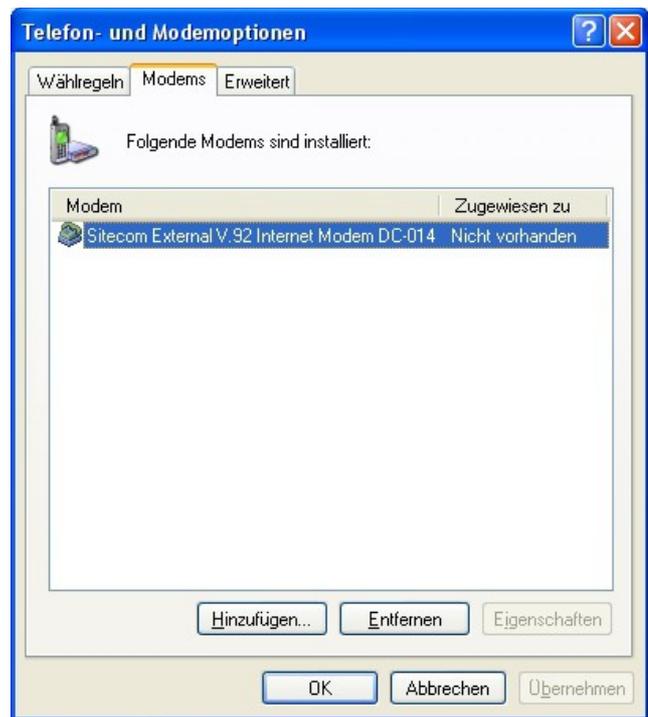
Via this COM Port you can access the S5 which is connected to your PLC-TELE

Direct Mode COM:

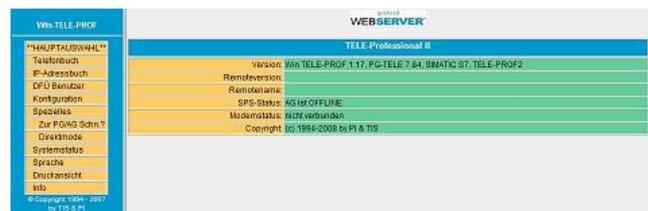
This COM Port is for serial extension, which means that no protocol-insepection will taken place. Consequently you can connect to any desired serial device.

2. Configure your modem under Start => Settings => System configuration => Phone and Modemoptions

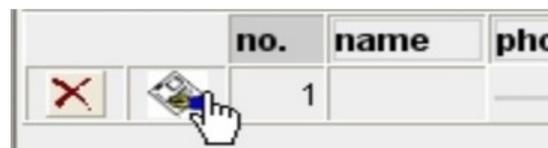




3. When you have configured your modem click „Phone book“



4. By clicking the symbol next to the entry number you can edit the corresponding entry respectively create a new entry. By clicking the cross the corresponding entry will be deleted.



5. Create a new entry in which you have defined the number of your Tele-Professional II and then click on the Floppy-Disc-Symbol to store the entry.

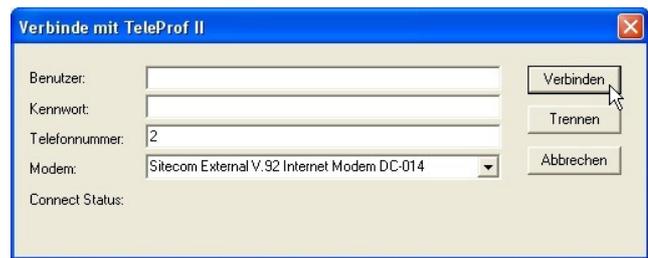


6. Click on the phone-number and enter the login data you have configured in the menu item „Access Codes“.



Check if you have chosen the correct modem and click „Connect“ to trigger a phone-call.

You will be able with the buttons „EXPORT“ and „IMPORT“ to export the telephone-book and import it in a Tele-Prof-II device. This device must have a minimum firmware-stand of V7.54. For an export you have to click with the right mouse button on the button „EXPORT“ and select „save as“. Now the phone-book-file would be saved on your specified folder. The import is reversed, you click with the mouse on the button „IMPORT“ and select the phone-book-file and after clicking on the OK-button the phone-book was imported.



7. If the connection establishment was successful, the mainscreen will appear again. If you have configured a PIN for the local PLC in your Tele-Professional-II under „Access Codes“ then click „RemoteSPS-Login“ und geben den PIN ein.



8. If this Message appears, you have logged in to your PLC successfully.



9.5.1 Operation with UMTS/GPRS/Internet/OpenVPN

9.5.1.1 Requirements

Operating-system: minimum OS 0.37

Firmware: minimum 7.34

9.5.1.2 Supported Cards

Option 3G CDMA Model: GTmax EMEA



It is recommended to run the card with an external antenna. As network operator we have tested T-Mobile and found large flexibility and consultation. T-Mobile currently offers tariffs for „web'n'walk“ with a monthly data volume till 5 GB. Please note that even this amount can be exceeded. Take care, from then it will be really expensive (1,- Euro per MByte).

9.5.1.3 Installation

Before you insert the card configuration data has to be entered in the device:

UMTS-Modem:	Ja
Netzart:	nur UMTS
min. UMTS-Pegel:	6
UMTS-PIN:	999999
Nr. SMS-Center:	
APN:	ca.t-mobile
Hersteller:	
Modell:	
Version:	
IMEI,Seriennummer:	
Änderungen übernehmen:	
Daten neu laden:	

- UMTS-Modem

Put it on Yes if you use a UMTS/GPRS-PCMCIA modem.

- kind of net (only UMTS, only GPRS, 1.GPRS/2.UMTS, 1.UMTS/2.GPRS)

Please inform yourself which net is available in your region from your provider before implementing. In case of doubt use 1.UMTS/2.GPRS. But therefore we will offer diagnosis possibilities in future.

- Pin

It is important, that the Pin-Number is entered correctly. Otherwise it may happen that the SIM-Card will be blocked. Unblocking it is only possible with the PUK. This method is currently not supported by TELE-PROF-II which means you ought to put the SIM-Card in a handy or a notebook and unlock it.

- No. of SMS-Center

This entry can normally be empty. If you provide the card in foreign countries please inform yourself about the corresponding numbers from your provider. This number is only necessary for SMS-operation anyway.

- APN

APN ist he so called Service-Point-Name over which you establish your internet connection at your provider. Following names are currently known:

for T-Mobile:

- internet.t-mobile

With this APN you only will get assigned a private IP-Address and will not be reachable in the internet.

- ca.t-mobile

With this APN T-Mobile will assign a public IP-Adresse to the card. Therewith you can use the DynDNS-Option.



You have to activate this APN from T-Mobile. (According to the last state the activation is free of charge and very quick).

9.5.1.4 Internetsettings

In the network menu you can find the subitem internet.

Here you can change the settings which are necessary for an internet-connection.

There are following connection-types: manual or permanent

Absolutely important:



When connecting to the internet you should activate the firewall. Never use your public IP-Address for a direct communication. This you can do in an emergency case e.g. first configuration via internet. Always use a VPN-Channel (see below) to communicate with your PLC or other devices, which are connected to a TCP/IP-network.

Through operation via internet there can be additional costs. Ask your provider for a suitable tariff.

Manual:

When choosing this connection-type the other settings of this dialog are not relevant. This means that the user must start the internet connection via phone-book manually.

Therefore create the corresponding entry in the phone-book and don't forget the cross in the column „Inet“, so the TELE-PROF-II knows that this is a connection to the internet. After the connection is established depending to the settings DynDNS will be executed. If the connection is closed (e.g. Modem hang up) the connection will stay closed.

Permanent:

Select a Provider from the phone-book.

Even here you have to note that the cross in column „Inet“ is set. The internet connection will be tried to remain. That means if the device will be turned on the TELE-PROF-II will automatically turn on the internet-connection. Even if you cut off the connection the TELE-PROF-II will turn it on again. However we will implement different alternatives.

9.5.1.5 Using DynDNS

We presuppose that the provider has given us a public IP-Adresse.

Now the question is: How can the TELE-PROF-II after dialing-up to the internet be reached?

For this problem there is a solution in the internet. The service provider DynDNS (DynDNS = Dynamic DomainName Server) (<http://www.dyndns.org>) offers a service. Therefore you have to register at DynDNS. Details you can find on the homepage of DynDNS. Up to 5 dynamic IP-Addresses are free. If you need some more you can order a corresponding number of names from DynDNS against payment.

Roughly it works like following:

You register your desired hostname at DynDNS e.g. mysystem.dynalias.com. For your access you will get a username and password. These you have to enter in the setting DynDNS config and set „use DynDNS“ to yes. At the next internet dial-up the TELE-PROF-II will register the IP-Address which is assigned to it under mysystem.dynalias.com.

Instantly you have access to the machine via the address mysystem.dynalias.com. However you are working with the firewall (see below) and the access via modem (except for OpenVPN) is blocked the ping or something like that won't work. For testing you can unblock the ping service via modem. Now you should get an answer at „ping mysystem.dynalias.com“. Deactivate ping via

modem again (internet connection must not be closed) and you will get no answer. Now you know that your device is reachable via internet.

From now on you can create a connection to the device via OpenVPN and maintain your machine. Even OpenVPN uses the entry `mysystem.dynalias.com`.

What to do if no public IP-Address is present?

Please read the chapter OpenVPN first, at the end of the text you will find a solution.

9.5.1.6 OpenVPN

9.5.1.6.1 Function

In the TELE-PROF-II we have implemented the popular under Opensource published OpenVPN. Detailed information you can find under <http://www.openvpn.net>.

Here the function of OpenVPN is described, how it is implemented in TELE-PROF-II.

Basically there are two operating modes of OpenVPN: server or client.

Normally the device on machine-side (PLC-TELE) is configured as server. With OpenVPN we provide a new network-interface in TELE-PROF-II. This interface will quasi be connected to the OpenVPN-interface of the partner-device with a virtual line. This line will be realized with software. Thereby all protocols for this interface are exchanged via an own UDP-Channel. You can say it is a phone-call per UDP between both devices. Obviously the connection is crypted. The keys are stored in TELE-PROF-II.

9.5.1.6.2 OpenVPN server-mode

In server-mode you give the IP-Address which the network-interface of the OpenVPN server will obtain. This will be committed in IP pool.

In our sample the Server will get the Address 10.111.111.1 and 10.111.111.2. OpenVPN will reserve these addresses automatically, because later a PPP-Connection will be realized across them.

In IP pool netmask you can define from which IP-Range the clients, which connect to your TeleProf via OpenVPN, will get an IP-Address for their network-interface.

When choosing the addresses note that you select an address-range which is not used by the Ethernet-Interface of the Prof II or by a modem (analogue or ISDN).

The virtual tunnel-addresses are (almost) any desired, they must be private addresses. They even should come from another block than the real addresses, so the routing will be easier – real and virtual networks are easy to differentiate.

Private Address: Normal public IP-Addresses are worldwide unique. Only like this a packet can find its correct destination. In contrast to this the private IP-Addresses are only valid in local networks, they will not be routed into the public internet. That's why many networks can use the same private addresses. For this purpose several IP-ranges are reserved: 10.x.x.x and 192.168.z.z as well as 172.16.y.y to 172.31.y.y.

The communication basically is over UDP: merely you give the Port over which you want to communicate. The Ports 9999 and 9998 should not be used as they are used by the TELE-PROF-II. As default 1194 will be set. If you are using a firewall make sure this Port is free (in this case UDP 1194). If you want to communicate with the TELE-PROF-II from a PC over an OpenVPN-connection make sure that these settings are configured in the firewall of your PC, too.

In server-mode you give the IP-Address which the network-interface of the OpenVPN server will

obtain. This will be committed in IP pool.

In our sample the Server will get the Address 10.111.111.1 and 10.111.111.2. OpenVPN will reserve these addresses automatically, because later a PPP-Connection will be realized across them.

In IP pool netmask you can define from which IP-Range the clients, which connect to your TeleProf via OpenVPN, will get an IP-Address for their network-interface.

Each user get 4 IP-Address:

- Address of the network
- Address of the server
- Address of the client (Endpoint for users)
- Broadcastaddress of the Network

A IP-Pool-Netmask about 10.111.111.0 the IP-Adressen awarded like this: - Server (TeleProf II) 10.111.111.0 – 10.111.111.3

- User 1 (Client) 10.111.111.4 – 10.111.111.7
- User 2 (Client) 10.111.111.8 – 10.111.111.11
- User 3 (Client) 10.111.111.12 – 10.111.111.15

and so on.

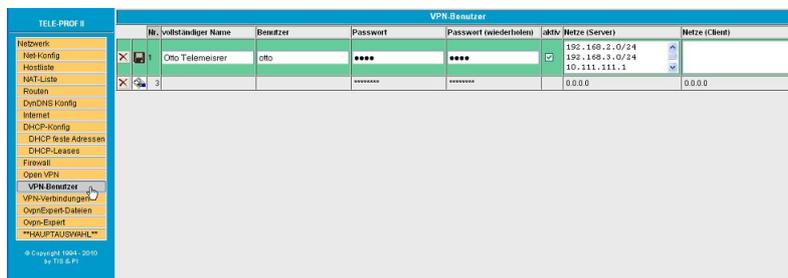
Award a individual virtual IP-address for each user is in preparation. When choosing the addresses note that you select an address-range which is not used by the Ethernet-Interface of the Prof II or by a modem (analogue or ISDN).

The virtual tunnel-addresses are (almost) any desired, they must be private addresses. They even should come from another block than the real addresses, so the routing will be easier – real and virtual networks are easy to differentiate. Private Address: Normal public IP-Addresses are worldwide unique. Only like this a packet can find its correct destination. In contrast to this the private IP-Addresses are only valid in local networks, they will not be routet into the public internet. That's why many networks can use the same private addresses. For this purpose several IP-ranges are reserved: 10.x.x.x and 192.168.z.z as well as 172.16.y.y to 172.31.y.y.

9.5.1.6.3 Access authorization

Who is allowed to build an OpenVPN-Connection? How can the Access be controlled? Attention: Principally everyone who has got the certificate and the IP-Address of the TELE-PROF-II can build a VPN-connection and access the device. This is comparable with when you have connected the device to the telephone-line but not given a password for the authentication.

9.5.1.6.3.1 Protecting the device of unauthorized access



TELE-PROF II		VPN Benutzer						
	Nr.	Vollständiger Name	Benutzer	Passwort	Passwort (wiederholen)	aktiv	Netze (Server)	Netze (Client)
Netzwerk								
Netz Konfig								
Hostliste								
WALListe	1	Otto Telemeister	otto	****	****	<input checked="" type="checkbox"/>	192.168.2.0/24 192.168.3.0/24 10.111.111.1	
Router	2			*****	*****		0.0.0.0	0.0.0.0
DynDNS Konfig								
Internet								
DHCP-Konfig								
DHCP-feste Adressen								
DHCP-Leases								
Firewall								
OpenVPN								
VPN Benutzer								
VPN-Verbindungen								
OpenVPN-Datens								
Open-Base								
HAUPTAUSWAHL								

Enter the participants which are allowed to connect via OpenVPN under VPN-User.



Principally everyone who has got the certificate and the IP-Address of the TELE-PROF-II can build a VPN-connection and access the device. This is comparable with when you have connected the device to the telephone-line but not given a password for the authentication.

9.5.1.6.3.2 Creating a user

Each user required the full name, username self and password.

ATTENTION: If you set „allow routing to ethernet-network“ to „yes“ all users automatically get access to the networks which are connected to the TeleProf! But not each user should get access to the whole network? Set „allow routing ethernet-network“ to „no“. Now switch to the column „Net (Server)“ (= server operation) and „Net (Client)“ (= client operation). In „Net (Server)“ enter the IP-address and networks the user should get access. For each column a network or IP-address has to be indicated. The input can include up to 50 messages.

The input of a network is short spell. e.g. 192.168.0.0/24

The first part is the network, after the /-slash the netmask. Here the number of bits of the networkmask are given.

e.g. 255.255.255.0 binary result: 1111 1111.1111 1111.1111 1111.0000 0000 = 24 (x Bit 1)

255.255.0.0 binary result: 1111 1111.1111 1111.0000 0000.0000 0000 = 16 (x Bit 1)

etc.

The server side (PLC-Tele) is now configured. We presuppose that the PLC-Tele is connected to the internet e.g. via UMTS and reachable under „teleprof.dynalias.org“.

9.5.1.6.4 Client (PG-Side)

Create an entry under „VPN connections“ which points to the address „teleprof.dynalias.org“.

Protocol: UDP, Port: 1194 Users have to be created under VPN-User.

Now make sure that the PG-Tele has an internet connection.

This can either be done by dialing-in to a provider via modem (create a phone-book entry with the corresponding number and mark by clicking „Inet“).

Or by entering the address of your router as Standardgateway and DNS in the network settings. In this case the connection will be established via Ethernet TCP/IP and your router. Here you have to look out for the firewall settings. The Port UDP 1194 must be opened.

If the internet connection is established just click the corresponding entry in of the VPN-connection and the connection should establish.

9.5.1.6.5 After establishing VPN-Verbindung

If the VPN-connection is successfully established a route with all the IP-Addresses which are reachable via Ethernet-interface of the server (PLC-Tele) will be created for the client.

Example:

PLC IP-Address: 192.168.1.99

PLC-Tele-Ethernet-IP-Address: 192.168.1.54 Mask 255.255.255.0, (Routermode on)

OpenVPN-Pool: 10.111.111.0 Mask 255.255.255.0

PG-Tele: Ethernet-IP-Address: 192.168.0.54 (Routermode on)

PC: 192.168.0.1 (Standardgateway 192.168.0.54)

If the VPN-connection is established you can for example reach or even program the PLC with „ping 192.168.1.99“.

9.5.1.6.6 Client PC-Side

For connection with a PC you need:

1. An Open-VPN-installation on your PC
2. The corresponding configuration file and the appropriate certificate for the TELE-PROF-II

3. The IP-Address of the TELE-PROF-II-device in the Internet. This can be a fix or a DynDNS registered address.

If you use our OpenVPN-Install-Tool the file TProf2config.ovpn will be installed in /program files/OpenVPN/Config.

Enter the following parameters in this file for:

remote (= IP-Address of dest. device: e.g. fix: xxx.yyy.nnn.xxx.) or a DynDNS registered Domain e.g. test.dyndns.org.

port (like configured in TELE-PROF-II, Default = 1194)



Note that your firewall has to allow the UDP-Connection for this Port

Statement from the Config-file:

```
#####  
# client-side OpenVPN 2.0 config file  
# for connecting to TeleProf II  
#  
# On Windows, you might want to rename this  
# file so it has a .ovpn extension  
#####  
# hier die Remote IP-Adresse für TELE-PROF-II eingeben  
# here set the remote ip address of TELE-PROF-II  
# e.g. remote tprof2.dynalias.org  
# replace xxxx with the ip-address  
remote tprof2.dynalias.com  
  
# here enter port for OPenVPN  
# here set port of TELE-PROF-II, standard is 1194  
# if you change it, you have to change it on both sides  
port 1194
```

You can create this file for every of your machines and rename the file after the name of the corresponding machine.

9.5.1.6.7 Connection establishment by using the OpenVPN GUI

After installation the OVPN-GUI Symbol should appear in the task list. Move the cursor over the icon choose the corresponding config-file and press „Connect“. The rest should happen automatically. If there is only one config-file, so directly click connect.

If there is any problem please look at the Log-File. There you can find information about what didn't work.

OpenVPN installs the so called TAP-network adapter in windows. That is a virtual network adapter. This adapter will receive an IP-Address from the IP-Pool, which was configured in the TELE-PROF-II-OpenVPN-Server.

If the „Routermode“ is activated in the TELE-PROF-II-device the corresponding route to the Ethernet-IP-network of the TELE-PROF-II will be set for you automatically.

Example:

IP-Pool: 10.111.111.0

IP-Pool-Mask: 255.255.255.0

Ethernet-IP of the TELE-PROF-II: 192.168.100.1
Ethernet-IP-Mask: 255.255.255.0
IP-Adresse of your PC: 192.168.1.1
Assigned address of your TAP-Adapter: 10.111.111.16

After the connection is established all IP-Packets which are sent to the networks 10.111.111.0 and 192.168.100.0 will be routed over the IP-Address 10.111.111.16 of your TAP-Adapter. After disconnecting this route will be removed automatically.

9.5.1.6.8 Operation of WinTELEPROF via VPN

Please proceed like this:

1. Start VPN-connection
2. create an entry in the IP-address-book with the IP-address of the IP-Pool of the Destination-TELE-PROF-II (e.g. 10.111.111.1) or the Ethernet IP-address of the Destination-TELE-PROF-II (e.g. 192.168.100.1) and connect

9.5.1.6.9 Configuration of the remote device

1. Start VPN-connection
2. Start WEB-Browser with the first IP-Address of the IP-Pool of the Destination-TELE-PROF-II (e.g. 10.111.111.1) or with the Ethernet IP-Address of the Destination-TELE-PROF-II (e.g. 192.168.100.1).

9.5.1.7 What to do if no public IP-Address is present?

Some UMTS/GPRS-Providers do not assign a public IP-Address to the UMTS-Cards. In this case DynDNS can not be used. However for this problem there is a solution.

You can register your modem under <http://www.mdex.de/>. Details you can find on the homepage of Mdex.

From Mdex you will get an OpenVPN-Access, too.

If you don't want to perform routing on the TELE-PROF-II on the machine-side you can also connect to the IP-Addresses which are given by Mdex. (In this case you can decline OpenVPN on TELE-PROF-II) But if you want a safe connection you should use VPN here, too.

If you want to perform routing, OpenVPN has to be active in the TELE-PROF-II on-site.

Furthermore you will have to configure another TAP-adapter. You can find the tool which is necessary therefore in the OVPN-directory. After connecting to Mdex, start another OVPN-connection to the TELE-PROF-II over the IP-Address given by Mdex.

Tip for Installation

1. Configure the TeleProf and run in the local network
2. Install OpenVPN on your PC and enter the local IP-Address of your TELE-PROF-II as remote-address
3. Start connection. If this configuration works you can configure via internet.

9.5.2 Tele-Prof-II and GSM as Telephone line

The Tele-Prof-II also can be called via GSM any time. Therefore you have to notice the following points:

- PSI-GSM/GPRS-Modem/RS232 by Phoenix
- SIMM-Card (3.3V) with activated CSD-(Circuit Switched Data)-service.

It is not an M2M-connection and will not be billed by volume (Mega-Byte). Normally it is a regular SIM-Card with an extra phone-number for modem-communication and one for FAX-communication.

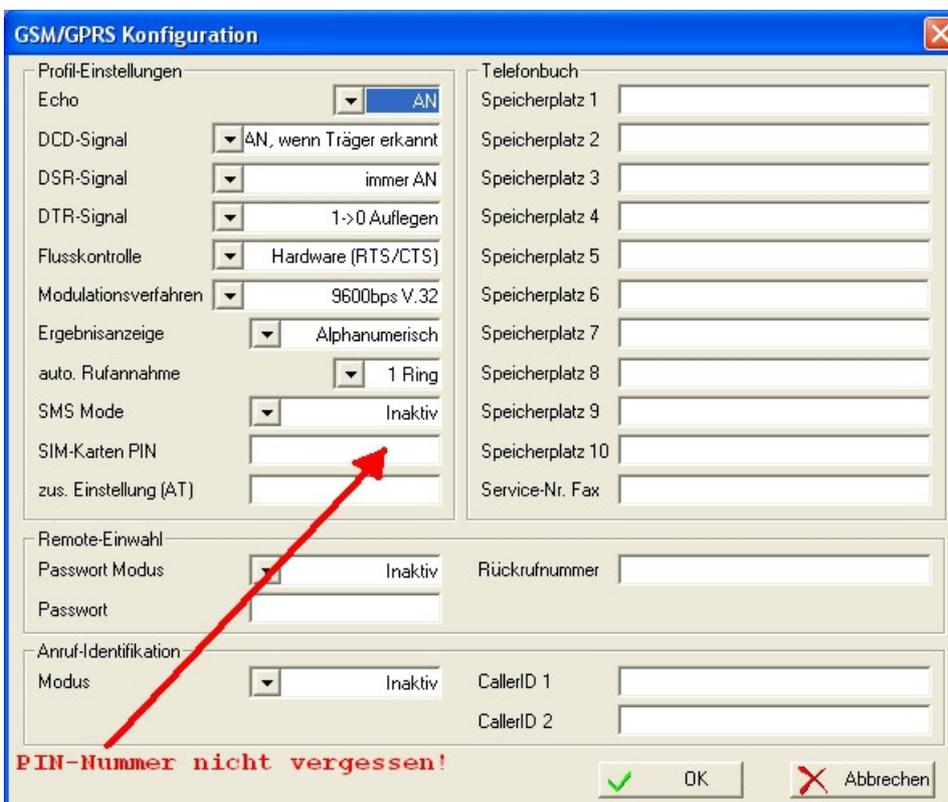
The GSM-Modem has following parameters. Thereto Phoenix supplies an extra parameter-software called "PSI-MODEM-CONF". The parameters for the serial interface should be set like following:

Other serial parameters concerning the baud-rate are possible any time, but the best experiences have been found with 57K6.

The Baudrate 115200 has sometimes not been recognized correctly by the modem.



The modem-settings itself:



The Phoenix-Modem will be connected to the PLC-V24-connector of the Tele-Prof-II with a null-modem-cable. This is the same cable which is used for the connection with a PC.

At devices which are used for the S5-remote maintenance the S5-controller can not be connected as usual anymore. In this case the S5-controller has to be connected to PG-TTY-connector. The connection cable for this can be ordered with the order number 9359-90.

When the modem supplied with power it has to be parametered in the Tele-Prof-II which can be doen best over the Web Browser.

Configuration in TP-II:



The GSM-Modem has to be connected with the PLC-V24-connector via null-modem-cable before changing the settings!

When the settings are stored in the Tele-Prof-II all accesses to the modem will be transferred to the external modem.

If the modem is not connected the device will stop with error messages. In this case mostly only a switch-off can help. Then connect the modem and restart the device. Then the external modem has to be deactivated and the new configuration has to be stored.

ATTENTION:

In the calling device (PG-TELE) for this the entry „no MNP” must be activated via Web Browser.



A connection with a TELE-PROF-I or Tele-Link as PG-TELE is not possible in this case. A connection-establishment from this GSM-Device to a TELE-PROF-I or Tele-Link is also not possible; Tele-Prof-II is possible, but at the first connection-establishment you have to call twice so the device can switch to no MNP mode.

9.6 PLC-Coupling

9.6.1 Coupling of several plcs via the telephone line

With the function SPS-TELE, texts, modes, data modules etc. that have already been stored in the plc can be transmitted from the plc to another plc or they can be fetched from the plc if needed.

9.6.2 Set up a communication word between the plc and the TELE-Network device

With each option that demands a common communication flag word between plc and TELE-Network device, the flag word is set up according to the following scheme and is read by the TELE-Network device every 5 seconds:

Example: FW10 (can be divided into FB10 and FB11)

FW 10 => MB 10 (Command byte) + FB 11 (Numer of the entry in the subscriber list)

Reference card for the command byte

01h: Start dialling process

After the connect with the called station, a 10h is written back in this register.

Hang up the modem

This command is only possible if the connected TELE-LINK is the caller or if

02h: there is no connection by phone at all. The TELE-LINK then disconnects the existing connection. If the command has been executed, a 30h will appear in the status register. In case of an error, a 50h will appear.

Hang up the modem in any case.

03h: This instruction is executed in any case immediately and directly. A 30h will appear in the same register.

Return messages of the TELE-network device in the command byte

10h: Modem connection with TELE-LINK (plc-TELE or PG-TELE) existing

20h: The number of the desired subscriber entry is invalid

30h: Modem connection does not exist anymore, e.g. after hanging up or after the partner has hung up

40h: A Connect is not possible (probably because line is busy)

50h: The command to hang up (02h) could not be executed

60h: Modem connection with ASCII subscriber exists

9.6.3 Setup of the SPS-TELE flag

Example: FW12 (can be divided into FB12 and FB13)

FW 12 => FB 12 (direction of sending) + FB 13 (transmission status)

Direction of sending

01h: The command to send is triggered

The entries in the communication DM are treated as a command to send.

The defined sector is transmitted to the partner.

Sender = sender of the command (source)

receiver = partner (target)

02h: The command to fetch is triggered

The entries in the communication DM are treated as a command to fetch

The defined sector is transmitted from the partner to the sender of the command

Sender = sender of the command (Target)

receiver = partner (source)

Transmission status

01h: command ready without mistakes

02h: command executed, but you have to check for TIMEOUT, the command should be completely executed after 45 seconds

03h: source module does not exist or is too short

04h: target module does not exist or is too short

05h: mistake; the command has to be repeated

06h: configuration DB does not exist

- 07h parameter fault
- 08h the partner device is not a SPS-TELE

9.6.4 Setup of the communication data module at the SPS-TELE

9.6.4.1 S7



If you use the plc-option with an siemens s7-plc, you have to look before programming the Communication-DB for even dataword-adresses. So this Communication-DB looks like this:

Adresse	Name	Typ	Anfangswert
0.0		STRUCT	
+0.0	source_datatyp	CHAR	' D '
+1.0	source_datatyp1	CHAR	' B '
+2.0	source_DB_Nr	INT	10
+4.0	source_beginning_DW_Nr	INT	0
+6.0	source_number_of_words	INT	2
+8.0	destination_datatyp	CHAR	' D '
+9.0	destination_datatyp1	CHAR	' B '
+10.0	destination_DB_Nr	INT	10
+12.0	destination_beginning_DW_Nr	INT	0
+14.0	destination_number_of_words	INT	2
+16.0	temp_array	ARRAY[1..512]	
*2.0		INT	
=1040.0		END_STRUCT	

Please note, that you proofe the edited DB in your plc, because, there are often failures, if you use in your Step 7 Software for editing your DB, the declaration window or the data window!

9.6.5 Send data with the SPS-TELE

In order to send data to or fetch data from another plc, you first have to define a communication flag word, a communication data module, and the PLC-TELE-flag in the TELE-LINK. The communication flag word and the PLC-TELE-flag always have to be input as an even number (0, 2, 4, 6, ..., 254).

In order to start the transmission and to call the subscriber 4, the plc now gives the following command to the communication flag word (f. ex. FW 10): 0104h.

The remaining data and the actual communication are executed according to the scheme defined in the DB.

For a connection to a Tele-Prof-I or Tele-Link the menu item "PROF I" in the telephone book must be selectet.

Please note, that you have selected the pg-mux-mode for pg-mux

9.7 RouterMode

Example:

You want to communicate with another PC from your PC via a Tele-Prof-II-connection. Therefore it is important that the IP-Address-families differ from each other! That means if you have the address-family 192.168.1.xxx in the office the same family should not exist on-site.

A communication in RouterMode is not possible if the same family exists on both sides!

If possible the IP-Addressfamily of the Analogue- and ISDN-IP-Address should not be changed. An assimilation of the addresses could cause communication problems which partially only occur sporadically.

The Router-Mode has to be active on both sides!

Office	Machine-Side
PC-IP-Address: 192.168.1.11	PC-IP-Address: 192.168.2.10
PC-Subnetmask: 255.255.255.0	PC-Subnetmask: 255.255.255.0
Standardgateway: 192.168.1.54	Standardgateway: 192.168.2.12

since Firmware V6.74 with Operatingssystem (OS) V0.11 no
Standardgateway has to be entered!
This function is works automatically!

9.7.1 Tele-Prof-II Configuration Office-Side:

Configuration Office-Side -	
Device type:	PG-Tele
Device name:	Office-Side
router mode:	Yes
IP-Addresses Machine-Side -	
Ethernet-IP:	192.168.1.54
use netmask for ethernet:	No
ethernet Netmask:	255.255.255.0
ISDN IP-Address:	172.16.0.128
analog IP-Addr.:	172.16.0.129

9.7.2 Tele-Prof-Configuration Machine-Side:

Configuration Office-Side -	
Device type:	AG-S7 300/400
Device name:	SPS-Seite
router mode:	Yes
IP-Addresses PLC-Side -	
Ethernet-IP:	192.168.2.12
use netmask for ethernet:	No
ethernet Netmask:	255.255.255.0
ISDN IP-Address:	172.16.0.130
analog IP-Adr.:	172.16.0.131

If you use a configuration like described the communication from LAN to LAN should work properly after connection establishment.

If you want to use the Tele-Prof-II as Router some basic knowledge about IP-Addresses, Subnetmask and Gateway is required. Therefore a short description in the following.

9.7.3 IP-Address

A typical IP-Address in decimal notation looks like following: 149.174.211.6 - four numbers divided by dots. The dots have the task to communicate with superior and inferior networks. Just like a country-identification-number, local-network-identification-number, participant-telephone-number and sometimes an extension belongs to a phone-number in the worldwide telephone network there is an area code - the network number, and an extension - the host number, in the internet as well.

The first part of an IP-Address is the network number and the second part is the host number. The border between network and host number is defined by a classification scheme for network types. The following table makes this scheme a little clear. In the columns for the IP-Address and the typical example the network number (area code part) is marked fat. The rest of the IP-Address is the host number of a PC within this network.

Class-B-Network	xxx.xxx.xxx.xxx	151.170 .102.15
Class-C-Network	xxx.xxx.xxx.xxx	192.23.155 .113
Networktype	Scheme	Typical-IP-Address
Class-A-Network	xxx.xxx.xxx.xxx	103 .234.123.87

The highest hierarchy-level are the so called Class-A-Networks. Only the first number of an IP-Address is the network number, the rest of the numbers are host numbers within this network. Possible network numbers for such a network are numbers between 1 and 126, which means that worldwide only 126 Class-A-Networks can exist. So an IP-Address belongs to a Class-A-Network when its first number is between 1 and 126. The American military network for instance is a Class-A-Network. Within one Class-A-Network the corresponding network provider can freely assign the second, third and fourth number of each IP-Address. As each of the three numbers can have the value between 0 to 255 a Class-A-Network-provider can assign up to 16,7 million IP-Addresses to hosts within his network.

The second highest hierarchy-level are the Class-B-Networks. The network number of such networks stretches over the first two numbers of the IP-Address. The first number of the IP-Address of a Class-B-Network can have a value between 128 and 191. The second number can have values between 0 and 255. Thereby about 16.000 of such networks are possible. As the numbers three and four also can have values between 0 and 255 a Class-B-Network can have up to ca. 65.000 hosts. First of all Class-B-Networks are assigned to huge firms, universities and online-services.

The lowest hierarchy-level are the Class-C-Networks. The first number of an IP-Address can have the values between 192 and 223. The numbers two and three belong to the network number, too and can have the values between 0 and 255. More than two million of such networks are addressable. First of all these networks are assigned to smaller firms with a direct internet connection and smaller Internet-Providers. As there is only one number left which can have the value between 0 and 255, a Class-C-Network can only have up to 255 hosts. One number of it is reserved, so there are only 254 possible hosts left.

9.7.4 Netzmask (Subnetmask)

The netmask (or Subnetmask) is a bit mask, which separates the IP-Address in a network- and a

host part.

A netmask is as long as the IP-Address (32 Bit in IP-Version 4 and 128 Bit in IP-Version 6) on which it is used. Every bit of the netmask relates to exactly one bit of the IP-Address. Every bit of the netmask which is set to 1 marks the corresponding bit of the IP-Address as network part, which addresses the particular subnet. The bits set to 0 mark the host part, with which each computer in this subnet is addressed.

The notation of a netmask is mainly not in binary but (like the IP-Addresses) in the dotted decimal notation. With the foundation of CIDR the netmask was only a decimal number which specified the used network part.

Examples (the first three entries correspond the origin network-classes A to C):

Netzmask (binary)	Netzmask (decimal)	Netzmask (CIDR)
11111111.00000000.00000000.00000000	255.0.0.0	/8
11111111.11111111.00000000.00000000	255.255.0.0	/16
11111111.11111111.11111111.00000000	255.255.255.0	/24
11111111.11111111.11111111.11000000	255.255.255.192	/26

9.7.5 Standard Gateway

If an IP-Address is tried to reach, which is not in the own network in the first place the PC doesn't know where to find the address. Therefore a Standard Gateway can be defined (the Standard Gateway can be defined in the network settings). If such a Standard Gateway is configured the PC looks for remote-IP-Addresses via this device.

9.7.6 PPP-connect for the router function

In the menu item Configuration - acces code - modem-user you can define user for the modem-connection. The item has 4 parameters:

- complete name - this is the name for the data set
- user name - this is the name for the user
- password - password for the user
- direction - direction for the account

Please check, that the password is written down correctly. Please check uper- and lower case. Possible values for the direction:

- DialIn - This data is only for the acces for a standard tele-service
- DialOut - The configured data is only for the login to the router.
- DialIn/Out - data for login to the router and acces for tele-service

In the menu item configuration - acces code - dialing protect you can activate this acces code for the modem connection.



If you have defined a modem user with the direction DialIn/Out, the dialing protect will be activated automatically. A acces to this device is only with PC (with modem-connection and password) or with TELE-PROFessional with firmware greater than 6.31 possible. With the keypad, you can switch off this dialing protection.

9.7.7 Connection to a dialing protected TELE-PROFessional-II

- 1.) Edit modem user in the device
- 2.) Select in edit subscriber for the telephone number the correct data set name.
- 3.) Begin to dial to this entry with select subscriber, after connect, you can work.

9.7.8 Edit of the modem user with keypad and display

- goto the menu item configuration ? acces code ? modem user
- select with ? and ? the data set, you want to edit. Select it with the ENTER-key
- now select the field (complete name, user name, password, direction) , you want to edit, delete or store.
- now, press ENTER and you are in the edit-mode
- with ESC your input will be stored
- after, you are ready for editing, you can store the data with the menu item save.
- you can edit every time a new user.

EConnecting with LAN (ONLY for PG-TELE)

IN the menu item IP addressbook you can edit your clients with the correct ip address. The ip address can be seperated with the “.” Or you write the DNS-name down.

With the menu item “connect IP address” you select the client you want to connect. Press ENTER to build the connection. After, you got the connect, the Connect-LED goes on. With the menu item hang up you can cut the connection.

9.7.9 How to define hostname, DNS and gateway

In the menu item *configuration - net-config*, you can define the hostname for the TELE-PROFessional-II. You can also define up to 3 DNS-server addresses. These server will be needed, when you use instead of ip-addresses names and this names ar not written doen in the own hostlist.

Example for the host list:

PG-TELE 192.168.1.51

So, you write down in the IP-address book instead of the ip-address the name PG-TELE. So, the device looks in its own list or in the defined DNS-server list, which ip-address is the correct for PG-TELE and begin to dial.

So, is you use the DNS-Server, you can edit central in your company a list with all ip-adresses and the name and every client can read and work with it. If you have no a change, you only have to change this list and not every client in your network area. And, es foreign person don't know, what to to with this names.

For this feature, you need the OS 0.10 in your TELE-PROFessional-II.

Standard Gateway

This is the IP-address in the network system, where the device can send to TCP/IP-packages, itself can't send it, because the ip-address is not in this system.

So, the gateway is a interface, that can send the data to other not in this system placed clients.

Example: Operation with a router

Tele-Prof-II (from PC) - (Ethernet) - Router - Internet with VPN - Router - Tele-Prof-II (To PLC)

So, the IP-address of the router is defined inside the TELE-PROFessional-II as the gateway address.

This entry can be written down like the normal ip-addresses or with a dns-name for example

Router1.

Host list

This list is the list, where you write down a dns-name and the correct ip-address. So, you want to connect to the dns-name PG-TELE, this device looks at first in its own host list, and then, if there is no correct entry, it looks at the defined DNS-server. So, this host list is a own private DNS.

Hos tlist

This list contains the address resolution for the implementation of the host name (IP partner) in plain text in the "point-listed" IP address.

So, you want to connect to the dns-name PG-TELE, this device looks at first in its own host list, and then, if there is no correct entry, it looks at the defined DNS-server. So, this host list is a own private DNS.

9.8 Send failure signals

9.8.1 FAX

With the special option FAX-TELE, texts, modes, data modules that have already been stored in the plc can be transmitted to a fax if needed.

9.8.1.1 Set-up of a communication word between plc and TELE-Network device

With each option that demands a common communication flag word between plc and TELE-Network device, the flag word is set up according to the following scheme and is read by the TELE-Network device every 5 seconds:

Example: FW10 (can be divided into FB10 and FB11)

FW 10 => FB 10 (command byte) + FB 11 (Number of the entry in the subscriber list)

Reference card for the command byte

- 01h: Start dialling process
After the connect with the called station, a 10h is written back in this register.
Hang up the modem
This command is only possible if the connected TELE-LINK is the caller or if
- 02h: there is no connection by phone at all. The TELE-LINK then disconnects the existing connection. If the command has been executed, a 30h will appear in the status register. In case of an error, a 50h will appear.
Hang up the modem in any case.
- 03h: This instruction is executed in any case immediately and directly. A 30h will appear in the same register.

Return messages of the TELE-network device in the command byte

- 10h: Everything OK, fax sent
- 20h: The number of the desired subscriber entry is invalid
- 30h: A data module is too small
- 40h: KA Connect is not possible (probably because line is busy)
- 50h: Error occurred when fax was transmitted

9.8.1.2 Set up of a communication data module at the FAX-TELE

DW 0 - the station-ID of the plc-fax is input as KC e.g. +49 1122331121
 DW 9:



Input only valid ASCII-signs, otherwise blanks up to DW 9!

- DW10: Source data module 1
- DW11: start data word in this DB
- DW12: number of data words in this DB
- DW13: source data module 2
- DW14: start data word in this DB
- DW15: number of data words in this DB
- DW16: etc. ...

The end of the list is recognised if the number 0 (zero) is input in the source data module.

Example: The characters in DB 5 up from DW 4 100 words and in DB 10 up from DW 0 200 words should be sent:

Set-up of the module:

DW 0 - DW 9: = KC'+4996199999 ' (Wie man eben will)

- DW10: 5
- DW11: 4
- DW12: 100
- DW13: 10
- DW14: 0
- DW15: 200
- DW16: 0 (= end is recognised)

For S7

adress	name	type	value
0.0		STRUCT	
+0.0	ID of sender	ARRAY[1..20]	
*1.0		CHAR	'+4','99','61','99','99','9'
+20.0	Source_DB_1	INT	5
+22.0	Source_Start_DW_1	INT	4
+24.0	Source_Count_of_Words1	INT	200
+26.0	Source_DB_2	INT	10
+28.0	Source_Start_DW_2	INT	0
+30.0	Source_Count_of_Words2	INT	400
+32.0	End_ID	INT	0
=34.0	name	END_STRUCT	

9.8.1.3 Sending a fax with the FAX-TELE-function

If you want to send a fax, you have to define a communication flag word and a communication data module in the TELE-LINK. The communication flag word always has to be an even number in the range of 0, 2, ... 254.

In order to start the transmission and to call the subscriber 4, the plc now gives the following command to the communication flag word (f. ex. FW 10): 0104h.

The remaining data and the actual communication are executed according to the scheme defined in the DB.

Please note, that you have selected the pg-mux-mode for pg-mux

9.8.2 SMS

9.8.2.1 Messages of the plc sending to a pager



*** Attention ***

Switch PAGER-operation only to „YES“ when you have set and proofed all parameters.

With the PAGER-option you can send from the plc, in the plc defined data, the actual build of flags and DB to a pager. This option is possible in all TELE-Network-Devices with Software Version 4.00 or bigger with S5/S7-Firmware.

You have to look for the specialities of the different pagers. Following pager are supported with this option:

- SMS to Handy
- Cityruf (alphanumeric)
- Scall
- Skyper
- Quix (alphanumeric)
- ANP Belgacom (numeric and alphanumeric)

For your further information it exists for the sms kommunication different protocolls to the sms data server. In this option are following protocolls implemented: TAP and UCP. The TAP is for D1 and E-Plus. UCP is for D2. Befor you give the TELE-Network-device the command to start this operation, you have to select in the COM-DB the right pager type. In the subscriber database of the TELE-device you have to enter the telefonnummer of the data server of the pager.

Numbers for Germany

pager type	Number	protocol	maximum length of the sending data in characters
D1 SMS	01712521002	TAP	160
D2 SMS	01722278025	UCP	160
E-Plus SMS	01771167	TAP	160
Cityruf Nummer	01691	special	80
Scall Nummer	01696nnnnnnn (*)	special	15 numerisch
Quix (aphanumerik)	016591	special	80

Quix (Numerik)	016592	special	15
Skyper	01692nnnnnnn	special	80
(aphanumerik)	(*)		
ANP Belgacom	0452500001	special	120 / alpha
Proximus	0475161622	UCP	160

(*) n = number of the pager

Please remark, that you have to edit the telefon number of the SCALL and SKYPER complete in the subscriber database of the TELE-device. For the other pagers you have to edit the telefon number in the PAGER-COM-DB.



Please note, if you have problems with sending some sms, proefe at first the telefon number of the central dialing number of your provider. It is possible, that this number has been changed. Please contact your dealer of this device, or the technical hotline of this device.

9.8.2.2 Setup of the communication word between plc and TELE-Network

With each option that demands a common communication flag word between the plc and the TELE-Network device, the flag word is set up according to the following scheme and is read by the TELE-Network device every 5 seconds. For Pager and ASCII- and SPS-TELE this is the same word.. Bitte Please refer to the coding.

Example: FW10 (can be divided into FB10 and FB11)

FW 10 => FB 10 (command byte) +FB 11 (Number of the entry in the subscriber list)

Reference card for the command byte

01h: Start dialling process to the pager

Return messages of the TELE-network device in the command byte

20h: The number of the desired subscriber entry is invalid or the subscriber is empty

30h: a DB is too small, or doesn't exist, or has wrong parameters e.g. the wrong pager number

40h: Connect is not possible (probably because line is busy)

50h: The command to hang up 02h could not be executed

60h: Modem connection with ASCII-subscriber does exist.

70h: A failure is ocured by sending the sms-message

80h: Sms-message is sended correctly

90h: Command doesn't exist, or is not supported with this option

9.8.2.3 Setup of the communication data module for S5 for PAGER

The minimum length of the PAGER-COM-DB is 142 words (DW 0 to DW141)

DW 0: Coding of the pager types: Format KF

D1 or E-Plus SMS with TAP 0

D2 SMS with UCP 1

Cityruf alphanumeric 2

Scall numeric 3

Quix alphanumeric	4
Quix numeric	5
Skyper alphanumeric	6
ANP Belgacom	7
Proximus	8

This table of coding the pager types is growing for the future for the different pager types for foreign countries

DW 1 - Number for the first pager in KC with an 'E' at the end. There are only maximum 19 characters possible. For example 0171992282E.
 DW10: Is the first character an 'E', so is the following number not guilty.
 A special opportunity for SMS pager is, that you can with one call send the message to more than on sms-pager. This is only for SMS-Pager, for the other one there is no possibility. If you use the Skyper or Scall where you have edit the pager number in the subscriber database, there is no look for the pager number in this DB.



*** Attention: This entry must exist in every case! ***

DW11 - Number of the second SMS-PAGER (only when 1 or 0 in DW0)
 DW20:
 DW21 - Number of the third SMS-PAGER (only when 1 or 0 in DW0)
 DW30:
 DW31 - Number of the fourth SMS-PAGER (only when 1 or 0 in DW0)
 DW40:
 DW41 - Number of the fifth SMS-PAGER (only when 1 or 0 in DW0)
 DW50:
 DW51 - not used
 DW59:

Text of the message. Only maximum 160 characters.

Pay attention, that when you use pager with numeric data.

For e. g. Scall, Quix and so on. This numeric data is only from

DW60 - 20h to 7Fh ascii code available. All the other data is unguilty. The
 DW141: end of the data is a 00h in this DB. You have to look for the different maximum data characters for the different pagers. In this case, your message is sent not correctly. Maximal data characters are 160 characters.

9.8.2.4 Setup of the communication data module for Pager-TELE for SIMATIC S7300/400

S7

Address	Name	Typ	value
0.0		STRUCT	
+0.0	Pagertyp	INT	0
+2.0	PagerNr1	ARRAY[1..20]	'E'
*1.0		CHAR	

+22.0	PagerNr2	ARRAY[1.. ' E ' 20]	
*1.0		CHAR	
+42.0	PagerNr3	ARRAY[1.. ' E ' 20]	
*1.0		CHAR	
+62.0	PagerNr4	ARRAY[1.. ' E ' 20]	
*1.0		CHAR	
+82.0	PagerNr5	ARRAY[1.. ' E ' 20]	
*1.0		CHAR	
+102.0	not used	ARRAY[1.. 16]	
*1.0		CHAR	
+118.0	Text	INT	' This is a test from text pager '
+280.0	TextEnd	INT	0
=282.0		END_STR	
		UCT	

Pay attention, that you finish the message text at the end with a 0. The type string is used for the text, because is so easier to edit. TELE-LINK / PROF need for the end detection a 00h.

Please note, that you have selected the pg-mux-mode for pg-mux PG-MUX-Mode (Only for PLC-TELE and S5)

9.8.2.5 Sending a message to a PAGER

After you have correctly defined the PAGER-COM-DB in the plc, now you can give the TELE-Network-device the commnd for dial. For this you write into the communication flag word the 01h for dialing. The TELE-Network-device gives the plc after sending the message the status back. The status for sending ok or sending with mistake.

9.9 Serial Extension (Direct-Mode)

You can select this mode in order to realise a data transmission that does not correspond to a communication protocol specific for controls as for example the AS511-protocol of Siemens-plcs. After the TELE-Network devices have built up a connection, the direct / transparent mode can be turned on. There is now a direct coupling between the PG-socket of the PG-TELE and the PG-socket of the PLC-TELE: This means that data that enters the PG-TELE is released unchecked at the PLC-TELE. In this way, you can transfer files from one PC to another, configure a connected OP, or simply transfer and execute the protocol of another control which is not supported by the TELE-Network devices.



The direct mode can only be activated from the PG-TELE! Moreover, it is an unprotected transmitting medium without special checking. Because of that it is a plain modem route with modem security (correction of errors according to modem standards). We cannot take any guarantee for run time errors.

9.9.1 Source-Com

With this menu item, the device is configured for the so-called transparent mode. The TELE-Network device is adjusted to parameters that are specifically made for transmission:

- PG or PLC (-socket) connection (input) from the dialling TELE-LINK
- Baud rate 300, 1200, 1800, 2400, 4800, 9600, 19200, 38400 Bd.
- Number of data bits 5 to 8 bits
- Parity N (none), E (even) and O (odd)
- Number of stop bits 1, 1.5 and 2 bits

9.9.2 Dest.-Com

In this menu item, the device is configured for the so-called transparent mode. The TELE-Network device is adjusted to parameters that are specifically made for transmission:

- PG or PLC (-socket) connection (input) from the TELE-LINK that is called
- Baud rate 300, 1200, 1800, 2400, 4800, 9600, 19200, 38400 Bd.
- Number of data bits 5 to 8 bits
- Parity N (none), E (even) und O (odd)
- Number of stop bits 1, 1.5 und 2 bits

9.9.3 Direct Mode ON

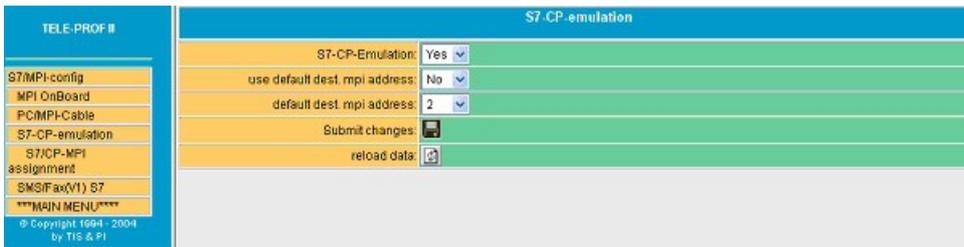
If there is a connection between PG-TELE and PLC-TELE, the direct mode can be turned on with this menu item. This mode is valid until the transmission is disconnected by using the LEFT key.

9.9.4 Direct Mode ON with HW

If there is a connection between PG-TELE and PLC-TELE, the direct mode can be turned on with this menu item. This mode is valid until the transmission is disconnected by using the cursor-left key. With this mode, there is a hand shaken connection between the plc-tele and the device, you want to communicate. Here is the DTR and DSR line used.

9.10 S7-CP-mode emulation

Since version V7.00 is the Tele-Prof-II able to simulate the communication to the S7-plc above a CP341-1. The configuration is able in the integrated web-browser menu. The menu name is S7/MPI-Konfig.



Switch the S7-CP-Emulation to “yes”. If you want to reach always one CP, switch the “use default dest. mpi address” to “yes” and define the default dest. mpi address. So all communication accesses for e.g. from WinCC will be send to this defined plc, whether which rack- or slot-number you have configured.

Would you communicate to many different plcs on this mpi-bus you have to switch “use default dest. mpi address” to “no”.

So, you will be able to communicate up to 20 to the mpi/profibus connected plcs per TCP/IP for e.g. with WinCC. The access will be realised with the ethernet-ip-address or a dial-up-connection and the rack- respective slot-number.

For the data exchange between the S7 plc and pc above TCP/IP with CP343-1 or CP443-1 the user has to make the same definition for e.g. for WinCC or other applications with ip-address of the CP and rack- and slot-number.

The Tele-Prof-II is connected to the mpi- or profibus and is so not able to communicate with rack- or slot-number. There fore, for this is in the Tele-Prof-II a S7-CP-MPI assignment table implemented. So with this table is a plc reachable with her mpi-address. So you refer to a particular rack- or slot-number the mpi-address.

For example:

If in your mpibus are 4 plcs with the addresses 2, 3, 4 and 5 and you will communicate with WinCC above TCP/IP to this plcs, you have to configure following:

no.	name	MPI addr	Rack	Slot	active
1	S7-PLC MPI=2	2	0	2	x
2	S7-PLC MPI=3	3	0	3	x
3	S7-PLC MPI=4	4	0	4	x
4	S7-PLC MPI=5	5	0	5	x
5		0	0	0	

So, you have to configure in WinCC the addresses, for e.g. plc with mpi-address 5:
IP-address: 192.168.1.54, rack-number: 0, slot-number: 5

10 Special Functions

10.1 RECALL mode

In order to optimise or save phone charges, for example for longer and often international calls, you can receive recalls from the TELE-Network device of your interlocutor. After the firm or the technician there has reported a disturbance of the installation, you call there with the TELE-Network device and cause a return call. In this way, the phone costs are at the customer’s expense. Please make the modifications described in the following chapters in order to be able to work with the return call mode.

10.1.1 PLC-TELE

On the PLC-TELE, you have to config following:

Count of Rings: minimum 1 or bigger

Dial Mode: Tone or Pulse

Extension: Yes or No

Outline Code: 0,1,2,3,4,5,6,7,8,9,!,",",/,>,#,X,W,*

Recall Mode: YES

10.1.2 PG-TELE

In the PG-TELE, you have to configure following:

Count of Rings: minimum 1 or bigger

Recall Number: Own telefon number of this tele-network-device, if you want a Recall from other areas, only with precall number

In your Edit Subscriber, you you have configured the telefon number, you want the recall, you just have to select the baudrate beginning with the Rxxx. So for example the R144, this means, you want a recall with 144000 baud.

As soon as the Baud rate with the "R" has been activated, a new input field will be shown after the input of the phone number (RC-PNr.) This return call - prefix number stands for the international code of the PG-TELE (for Germany, the international code is 0049). If the return call is a national one, just confirm with ENTER (field remains empty). If you have input a RC-PNr., you must not delete the ZERO of the prefix of the return call number. This happens automatically when the TELE-Network device dials. This means that the return call number always remains completely in the entry.

10.1.3 Use recall-mode

In order to start the return call, select (after having made the aforementioned adjustments) the respective subscriber in the menu item "subscriber dialling". As usual, you start the dialling with ENTER and in this way you also start the return call.

The TELE-Network devices communicate with each other, exchange the return call numbers, hang up immediately and then the PLC-TELE calls back the other TELE-Network device within a minute. If there is no return call, please check whether the adjustments in the TELE-Network device (PG-TELE and PLC-TELE) are correct and whether the device that calls back had got a line.

10.2 Operation of several plcs at one TELE-Network device

If you want to attend several automation devices that are not networked, there are two possibilities to connect them to a TELE-Network device.

10.2.1 Operation with Siemens MUX-757

Connect the PLC's in a star-shaped way with a MUX-757 of Siemens and connect the latter to a PLC-TELE. In this way, you can programme up to maximally 8 plc controls via one telephone connection. Turn the TELE-Network device to the operation mode "KOR/MUX"

10.2.2 Operation with intelligent Bus-terminal IBX

With the intelligent Bus-system IBX-terminal up to 30 plcs can be contacted. At the individual IBX-terminals, set the PG-number of the respective control via the DIP switch that is located at top. The terminals are connected with each other in a bus-shaped way via a 4wire RS485-line. Please note:

Use a 2 x 2 x 0,25 cable, single shielded. The shield has to be connected both ways.

With your S5-software you contact with both variants the desired AG as usual via the PG-BUS (Bus/path calling). Switch the TELE-Network device to the operation mode "KOR/MUX"

10.3 Operation of several plcs via the H1-Bus

It is no problem to attend a complete H1-network.

With an additional software option, it is possible to configure the PLC-TELE in such a way that a "local AG" can be connected at the PLC-socket of the PLC-TELE and that a CP can be connected at the PG-socket. After the connection set-up, the programmer decides at the PG-TELE whether he/she wants to programme at the PLC or at the CP. With the Bus-calling of his/her S5-software, he/she can reach and programme all the SIMATIC-S5-PLCs that are connected to the H1-Bus.

With the menu item "Special items" and the submenu item "To the PG/PLC-interface", it is decided at the PG-TELE whether the communication at the PLC-TELE is via the PLC-socket or the PG-socket.

Possible adjustments:

- Connect PG-socket with PLC-socket normal setting
- Connect PG-socket with PG-socket 2nd plc or switch to CP-connection

10.4 Operation of several plcs via the L1-Bus

It is no problem to attend a complete L1-network.

With an additional software option, it is possible to configure the PLC-TELE in such a way that a "local PLC" can be connected at the PLC-socket of the PLC-TELE and that a CP can be connected at the PG-socket. After the connection set-up, the programmer decides at the PG-TELE whether he/she wants to programme at the PLC or at the CP. With the Bus-calling of his/her S5-software, he/she can reach and programme all the SIMATIC-S5-PLCs that are connected to the L1-Bus.

With the menu item "Special items" and the submenu item "To the PG/PLC-interface", it is decided at the PG-TELE whether the communication at the PLC-TELE is via the PLC-socket or the PG-socket.

Possible adjustments:

- Connect PG-socket with PLC-socket normal setting
- Connect PG-socket with PG-socket 2nd plc or switch to CP-connection

10.5 Operation of several plcs via the L2-Bus

It is no problem to attend a complete L2-network.

With an additional software option, it is possible to configure the PLC-TELE in such a way that a "local PLC" can be connected at the PLC-socket of the PLC-TELE and that a CP143 or a CP1430 (H1) can be connected at the PG-socket. After the connection set-up, the programmer decides at the PG-TELE whether he/she wants to programme at the PLC or at the CP. With the Bus-calling of his/her S5-software, he/she can reach and programme all the SIMATIC-S5-PLCs that are connected

to the L2-Bus.

With the menu item "Special items" and the submenu item "To the PG/PLC-interface", it is decided at the PG-TELE whether the communication at the PLC-TELE is via the PLC-socket or the PG-socket.

Possible adjustments:

- Connect PG-socket with PLC-socket normal setting
- Connect PG-socket with PG-socket 2nd plc or switch to CP-connection

10.6 Send data from the plc to a modem subscriber

The plc can exchange data with a so-called ASCII-subscriber via data modules. The ASCII-subscriber is a normal modem. Only V.42-BIS connections are allowed.

The caller might be either the ASCII-subscriber or the plc or it can be started via the TELE-LINK.

10.6.1 Setup of the communication word between plc and TELE-Network

With each option that demands a common communication flag word between the plc and the TELE-Network device, the flag word is set up according to the following scheme and is read by the TELE-Network device every 5 seconds:

Example: FW10 (can be divided into FB10 and FB11)

FW 10 => FB 10 (command byte) + FB 11 (Number of the entry in the subscriber list)

Reference card for the command byte

01h: Start dialling process

After the connect with the opposite position, a 10h is written back in this register. When calling a ASCII-TELE-LINK, you receive a 60h at the latest 20 seconds after both modems have built up a connection. Another possibility is that the called ASCII-subscriber already has a line that he wants to send to the plc before those 20 seconds are over. If the plc wants to send immediately, you have to call with 04h.

02h: Hang up the modem

This command is only possible if the connected TELE-LINK is the caller or if there is no connection by phone at all. The TELE-LINK then disconnects the existing connection. If the command has been executed, a 30h will appear in the commando register. In case of an error, a 50h will be appear.

03h: Hang up the modem in any case.

This instruction is in any case immediately and directly executed. It gives in the same register a 30h back.

04h: An ASCII-subscriber is called.

If there is a connect afterwards, then a 60h is sent to the plc for the connect with the ASCII-subscriber. Advantage: The plc can set down the ASCII-commands immediately after the connect.



If there is a TELE-LINK (PLC or PG) at the other end, those cannot communicate with each other. Only use this if you are sure that the subscriber definitely is a ASCII-subscriber. Otherwise, use 01h.

Return messages of the TELE-network device in the command byte

10h: Modem connection with TELE-LINK (PLC-TELE or PG-TELE) exists

20h: The number of the desired subscriber entry is invalid

30h: Modem connection does not exist anymore, e.g. after hanging up or if the partner has hung up

40h: Connect is not possible (probably because line is busy)

50h: The command to hang up could not be executed

60h: Modem connection with ASCII-subscriber does not exist.

10.6.2 Setup of the ASCII-TELE-flag

Example: FW 12 (can be divided into FB 12 and FB 13)

FW 12 => FB 12 (direction of sending) + FB 13 (transmission status)

Direction of sending

0100H

in the flag word (absolutely 00 in the LOW-byte also with PLC-TELE in order to delete the status; otherwise, the TELE-LINK does not accept the command) ? send the data module that was described in the communication DB. The number of the bytes that have to be sent can be found in the communication DB.

0200H

The plc is ready to receive data. This means that the received lines are only written in the plc if this command is there. Only one line including CR is written. After that, TELE inputs into the command flag 0AH which means - 020AH. This means for the plc that data has been received.

After this data has been processed, 0200H can be input again. If there are still lines in the TELE, these are sent to the plc. The following is then in the target

The following is then in the target

DW: Number of the received bytes in KF-format

DW: from here in KC the signs

Transmission status

01h: command is ready without mistakes

02h: command is being executed, but you have to check for TIMEOUT, the command should be executed after 45 seconds

03h: source module does not exist or is too short

04h: target module does not exist or is too short

05h: mistake; the command has to be repeated

06h: configuration DM does not exist

07h: parameter fault

08h: the partner device is not an ASCII-subscriber

10.6.3 Setup of the communication data module at the ASCII-TELE

DW0: KC = data type of the source (at the moment, only DB possible)

'DB' data module

'IB' input byte

DW1: KF = source DB number

DW2: KF = initial address of the source sector = StartDWNr

DW3: KF = number of words

DW4: KC = Data type of the target (at the moment only DB possible)

'DB' data module

'IB' input byte

DW5: KF = target-DB number

DW6: KF = initial address of the target sector = StartDWNr

DW7: KF = number of words

10.6.4 8.6.4 Send data with the ASCII-option

The following criteria have to be fulfilled:

(the ASCII-subscriber is called "AS" in the following)

- The AS does not send 0AH as 1st sign to the plc
- All transmissions from the AS have to be finished with CR = 13dez
- TELE-Network device saves maximally 3200 signs from the ASCII-subscriber in the cache (also several lines)
- One line can be maximally 510 bytes long (including CR)

A communication flag word as well as a communication data module have to be arranged here (compare to PLC-TELE). The source area is the area that is sent to the AS. The AS on the other hand sends to the target area. It has to be noted that the target area marks the number of the received bytes in the first word. (note: bytes!) The TELE-LINK does not write the number of the received bytes in the configuration DB but in the 1st word of the target area. When sending from the plc to the AS, the number of the bytes that are to be send (not WORDS as with the PLC-TELE) is taken over from the configuration DM. For the status report the same values as with the PLC-TELE are valid.

If you want to send data from the plc to an ASCII-subscriber or if you want to fetch data, you have to define a communication flag word, a communication data module and the ASCII-TELE-flag in the TELE-LINK. The communication flag word and the ASCII-TELE-flag always have to be an even number (0, 2, 4, 6, ..., 254).

In order to start the transmission and to call the subscriber 4, the plc now gives the following command to the communication flag word (f. ex. FW 10): 0104h.

The remaining data and the actual communication are executed according to the scheme defined in the DM.

Please note, that you have selected the pg-mux-mode for pg-mux (Only for PLC-TELE and S5)

10.7 Communication with a mailbox (modem)

With this option now you can communicate with the tele-network-device from your pg/pc above the telefon line into a mailbox (esp. the modem). You only have to configure your terminal programm in your pg/pc with following parameters:

Baud rate 19200 Baud, 8 data-bit, 1 stop-bit, no parity

Handshakes like following:

TELE-PROFessional-II: RTS/CTS on V24-Connector

At next, you select the subscriber you want to dial, but now you need this baudrate like M144 or M96 and so on. After the connect you can work with your pc and your terminal programm, like the modem is build in in your pc.

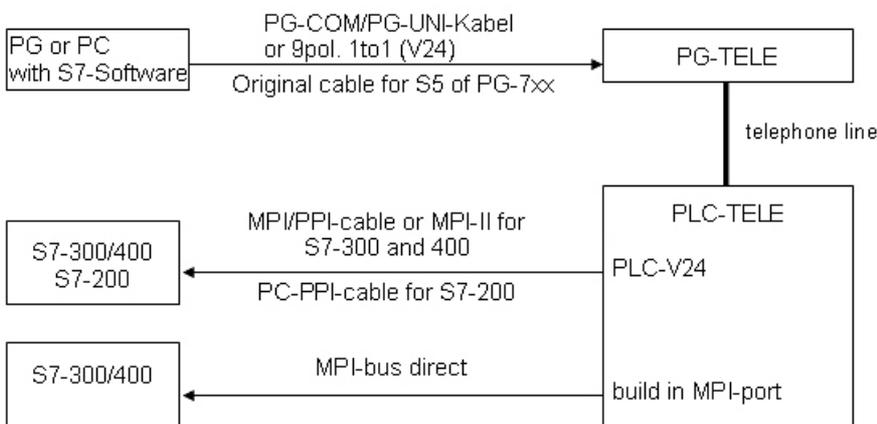
10.8 Communication with an S7-PLC

This device, which is on the plc side, must be configured in the menu item Konfiguration Device Type as PLC-S7 300/400. If you use the S7-200, you just have to change the device type as PLC-S7 200 9K6 or PLC-S7 200 19K2. For the PG-TELE you don't have to change anything, because the PG-TELE recognices the plc type, wether its S5 or S7. These schematic is for MPI and also for Profibus-communication. You only have to note, that you will use the correct interface cable for the used baudrates.



you are using a S7-200 PLC, you should activate in the PG-TELE in the menu-item Speciall the "S7-200 ON" item. After connecting the both modems together, you should do this. Now you can work with the programmingtool MicroWin. It is better for the communication, you configure your device driver PPI-Cable with the modemconnection. With this feature, you get longer timeouts. For the modem device you can use the Bausch Induline IL 14K4 with the normal standard parameters. The pc is connected to the PG-TELE PG-V24-port with a straight cable 1to1 pin.

Connection scheme::



The baudrate of the serial communication is able up to 115200 baud. You should only recognize that cables like PG-COM/PG-UNI are not able to drive this baudrate. For a communication with TTY there is only maximum 38400 baud possible. If you connect direct RS232, then you can drive the 115200 baud. If you use Siemens Step7-software, you should use the tool "MPI-Speed" for to drive this higher baudrates.



A connection in the office to the build in MPI-port is in the moment not possible. You should use the driver „PC-Adapter“ with the serial baudrate of 19200 up to 115200 baud.

10.9 Communication with external handy or modem

The TELE-PROFessional-II can be driven instead of analogue or digital telephon system with an external modem, terminal box or with a handy.

After, you have connected the handy/modem to the device, you should not configurate only the baud rate of the serial communication, you must activate this in the TELE-PROFessional-II, too.

So, you must activate this in the menu item configuration ? telephone ? ext. modem. Then, restart the device, so this option will be active.

10.9.1 Connecting a handy to a „PG-TELE“

The handy or the modem is connected to the port PLC-V24 with the same cable you use for connecting to a PC. Therefore, this port has the same pinning like a pc, you don't need a special adapter for connecting it. So, with the same cable connected to a PC, you are able to test the communication or the configuration.

The with this test detected parameter should be configured in the menu item configuration ? telephone ? ext.modem baud.

10.9.2 Connecting a handy to a „PLC-TELE S5“

The handy or the modem is connected to the port PLC-V24 with the same cable you use for connecting to a PC. Therefore, this port has the same pinning like a pc, you don't need a special adapter for connecting it. So, with the same cable connected to a PC, you are able to test the communication or the configuration.

The with this test detected parameter should be configured in the menu item configuration ? telephone ? ext.modem baud.

The S5-plc is connected with a 15pin cable male ? male to the PG-TTY-port of the TELE-PROFessional-II. This cable is not a 15pin 1to1-cable, it has a special pinning, name and article number. The name is "CP-KABEL" and the article number is 9359-90.

After, you got a telephone connect to this device, you don't have to care, that the plc is not connect to the plc-port, this makes the device itself.

10.9.3 Connecting a handy to a „PLC-TELE S7-300/400“

The handy or the modem is connected to the port PLC-V24 with the same cable you use for connecting to a PC. Therefore, this port has the same pinning like a pc, you don't need a special adapter for connecting it. So, with the same cable connected to a PC, you are able to test the communication or the configuration.

The with this test detected parameter should be configured in the menu item configuration ? telephone ? ext.modem baud.

The S7-plc is connected here to the build in mpi-port. Only so is the communication to the plc and a handy communication possible.

10.10 Firewall

The TELE-PROFessionell II includes an integrated Firewall, to prevent unwanted access from outside. This is configurable under configuration => Firewall.

Over the Web-Server (network => firewall) you will be able to define further options:

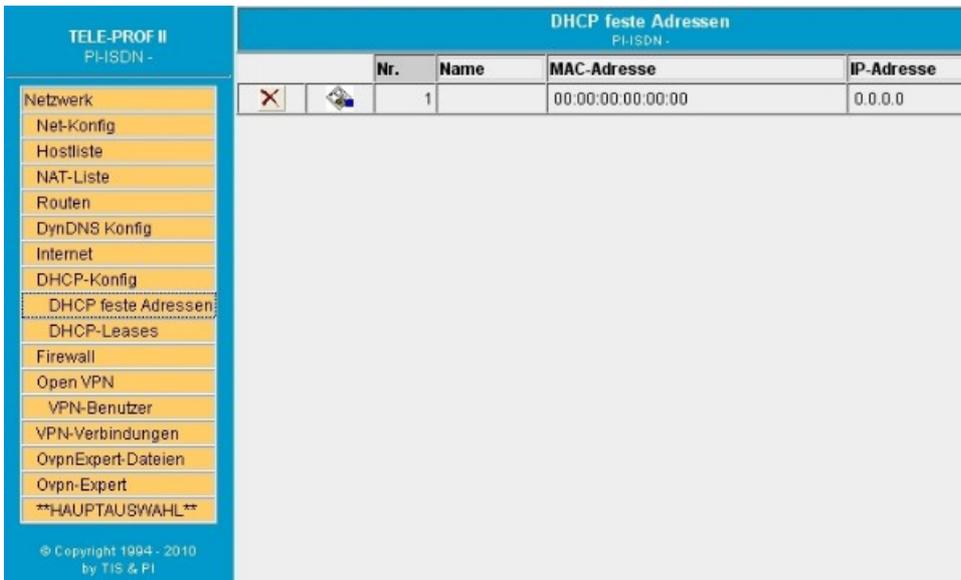
firewall	
PH-SDNST -	
firewall y/n:	No <input type="button" value="v"/>
WEB config (tcp 80,8080) with ethernet:	erlauben <input type="button" value="v"/>
WEB config (tcp 80,8080) with modem:	erlauben <input type="button" value="v"/>
firmware service (tcp 9998) with Ethernet:	erlauben <input type="button" value="v"/>
firmware service (tcp 9998) with modem:	erlauben <input type="button" value="v"/>
plc remote service (tcp,udp 9999) with ethernet:	erlauben <input type="button" value="v"/>
plc remote service (tcp,udp 9999) with modem:	erlauben <input type="button" value="v"/>
ping with ethernet:	erlauben <input type="button" value="v"/>
ping with modem:	erlauben <input type="button" value="v"/>
VPN with Ethernet:	erlauben <input type="button" value="v"/>
VPN with modem:	erlauben <input type="button" value="v"/>
CP emulation with Ethernet:	erlauben <input type="button" value="v"/>
CP emulation with modem:	erlauben <input type="button" value="v"/>
Submit changes:	<input type="button" value="save"/>
reload data:	<input type="button" value="refresh"/>

10.11 DHCP-Server

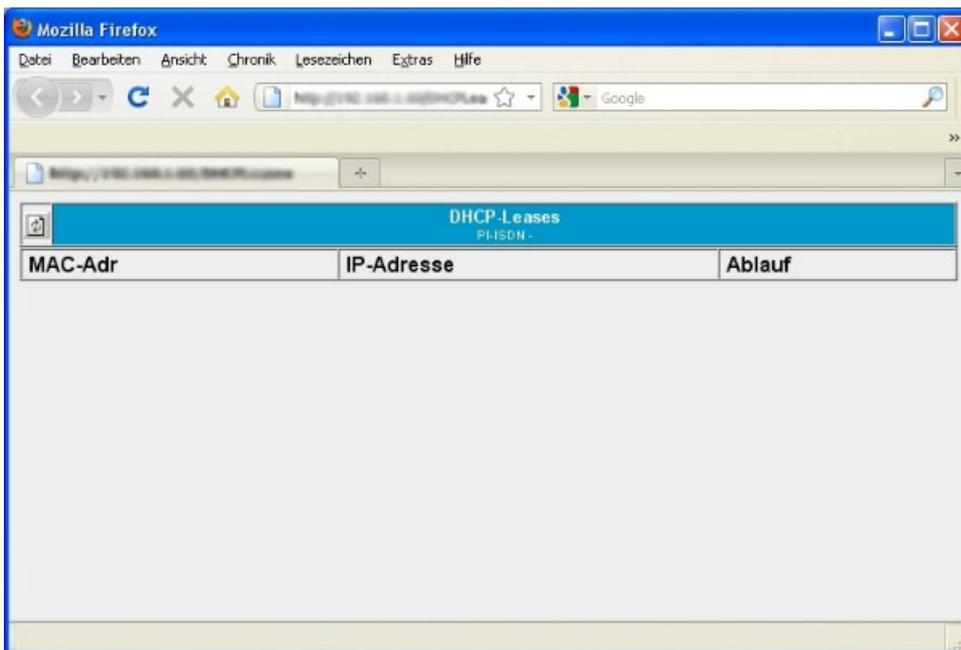
The TELE-PROFessional II has an included DHCP-server for the ethernet-interface. You can find the options in the menu-item "network".

TELE-PROF II	
PH-SDNST -	
Netzwerk	DHCP Server: Nein <input type="button" value="v"/>
Net-Konfig	Start-IP-Adr: 192.168.1.120
Hostliste	End-IP-Adr: 192.168.1.130
NAT-Liste	Subnet-Mask: 255.255.255.0
Routen	1. DNS: 0.0.0.0
DynDNS Konfig	2. DNS: 0.0.0.0
Internet	3. DNS: 0.0.0.0
DHCP-Konfig	Router-IP: 0.0.0.0
DHCP feste Adressen	Domain:
DHCP-Leases	Änderungen übernehmen: <input type="button" value="save"/>
Firewall	Daten neu laden: <input type="button" value="refresh"/>
Open VPN	
VPN-Benutzer	
VPN-Verbindungen	
OvpnExpert-Dateien	
Ovpn-Expert	
HAUPTAUSWAHL	
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You will be able to define parameters like Start-IP-address and End-IP-address, the Subnet-Mask and also entries for DNS.



In this menu you will be able to define assignments of ip-address to special MAC-addresses.



In this menu (status-menu) you can see every assigned entry and the specific lease-time of this entry.

10.12 HMI-Module

With the HMI-report module you can send PLC-event-dependent SMS (Pager-Messages) to practically as many recipients as you want without any programming effort. The system classifies the messages to the corresponding recipient automatically and sends the message via correct provider.



By sending SMS additional costs can come up. Please inform yourself at your provider.

That the HMI-Module can work correctly you must set a few basical settings.

Following points have to be setted up:

- o Pagerprovider
- o Pagerrecipients
- o PLC-Connections
- o PLC-Variables
- o Normierungen (optional)
- o Reports
- o Activate base setting HMI-Option

Even the HMI-Module is secured by the Access protection via WEB-Browser. The necessary rights are given by the corresponding points.

10.12.1 Entering the pager provider

Access rights Level
 Write Superuser
 Read / View U2

		pager provider					
		no.	name	phone no.	protocol	baud rate	user
<input checked="" type="checkbox"/>		1	TD-1SMS	001712521001	SMS-TAP	ISDN	
<input checked="" type="checkbox"/>		2	D2 SMS	001722278025	SMS-UCP	ISDN	
<input checked="" type="checkbox"/>		3			SMS-TAP	ISDN	

Enter a statement under name which is expressive for you. The phone-number and the protocol-type you can find out from your provider. In the column Baudrate you can choose the connection of your choice (ISDN or Analog). The entry user is for purpose of sending e-mail or for SMS-Provider, which offer an Internet- or PPP-access.

Here a few important Providers:

Provider	Number	Protocol
T-D1	0171/2521001	TAP
D2 Vodaphone	0172/2278025	UCP
E-Plus SMS	0177-1167	TAP

10.12.2 Entering the Pagerrecipients

Access rights Level
 Write Superuser
 Read / View U2

In the next step enter the recipients of the short messages. Usually these are handy-numbers of the recipients.

		page receiver Plus(SMS)												
	no.	name	phone no.	provider	G0	G1	G2	G3	G4	G5	G6	G7	G8	G9
X	1	Mr Maier	017100298002	TD-SMS	x									
X	2	Mr Mustermann	0172 111 222 333	D2-SMS			x		x	x				
X	3													

- The name is freely selectable again. Phone number is the handy number of the recipient.
- In the column provider you can assign a provider to the recipient
- The columns G0 – G9 stand for report groups. There are total 10 report groups. Each recipient can belong to several report groups. Below you can assign several report groups for each group similar like here. So you can spread one message to the relevant recipients without any problem.

How do the messages come from the PLC to the handy ?

For the PLC-access connections are required. For the SIMATIC S7 currently the connections are supported via MPI or TCP/IP. These connections should be projected in the following dialog.

10.12.3 Projecting the PLC-Connections

Access rights Level
 Write Superuser
 Read / View U2

		Connections Plus(SMS)																
	no.	name	Connect	MPIIP-address	active	Cycle (sec.)	Delay (sec.)	address SMS-status	G0	G1	G2	G3	G4	G5	G6	G7	G8	G9
X	1	PLC 2	S7-MPI OnBoard	2	x		1	6D MW 200	x									
X	2	Station mit CP	S7-TCP/IP	192.168.0.80	x		1	6D MW 180	x									
X	3		S7-MPI OnBoard				0	0										

- The column “Name” is provided for an own notation.
- „Connect“ is the connection type to the PLC (here MPI or TCP/IP).
- In the column “active” you can define whether to communicate with the PLC or not
- „Cycle“ defines the time periode after which the next communication to the PLC should start.
- “Address SMS-status“ is for the feedback of the state of the HMI-Module. If you want to control communication state and the SMS-shipment of the PLC, enter the address of one “word”, e.g. data block or flag. TeleProf II will then write the maximum number of polling attempts for queued messages to the low byte in every communication cycle. If the number 254 is exceeded so the number 254 is set every time. If the number of polling attempts is > 0, so the drop of a message has failed. Like this the PLC can control the SMS-shipment. Now it should be controlled whether TeleProf II is communicating with the PLC. This can happen very easily. Overwrite the Counterbyte of your PLC regularly with 0xFF. After the defined cycle time there should be another value then 0xFF. But rate this time generously, because the cycle can shift if there is a communicationproblem with other controllers. The high byte is reserved for later extensions. Currently it is overwritten with “0”. Examble: If you use FW 200, then FB201 is the counter and FB200 is set to 0.

10.12.4 Projecting the Variables

Access rights Level

Write Superuser

Read / View U2

Enter the desired variables, which should be shown or processed.

		variables PASSEKST				
		no.	name	Connection	address	data type
X		1	E 4.0	Station mit CP	E 4.0	Boolean
X		2	MW30	SPS 2	MW 30	unsigned int
X		3				Boolean

In the following table you can find the usage of each column

Column Usage

Name Own notation

Connection Assignment of a variable to a PLC connection

Adresse The underlying address in the PLC after following rules:

Data range		Data type			
Input	Output	Flag	Data block		
E 1.0, I 1.0	A 1.0, Q 1.0	M 10.1	DB1.DBX 1.0	Bit (Boolean)	
EB 1, IB 1	AB 4, QB 4	MB 20	DB2.DBB 20	BYTE	
EW 4, IW 4	AW 6, QW 6	MW 100	DB4.DBW 0	WORD	
ED 4, ID 4	AD 6, QD 6	MD 100	DB4.DBD 10	DWORD	

Daten range		Data type
Timer	Counter	
T1	-----	Timer
-----	Z1, C1	Zähler

Data type Choice of the data type for the correct conversion:
 Boolean (Bit) unsigned int (Word without sign)
 signed int (Word with sign)
 DWORD (Double Word without Sign)
 signed DWORD (Double Word with Sign)
 real (Floating-point-number)

10.12.5 The normings

For the correct processing and displaying of the variable maybe a conversion is necessary. This conversion can happen with normings. You can define the necessary conversions here and later you can assign them to a message. As normings usually happens frequently it is meaningful to manage them centrally.

Access rights Level

Write Superuser
 Read / View Superuser

no.	name	norming	unit relate	plc value 1	HMI value 1	plc value 2	HMI value 2
1	On/Off	text		0:0 N 1:0 F F	0.00	0.00	0.00
2	Window state	text		0:opened 1:closed	0.00	0.00	0.00
3	Degree C°	linear		*C	0.00	-256.00	2048.00
4	3 steps	text		0:step0 1:step1 2:step2	0.00	0.00	0.00
5		linear			0.00	0.00	0.00

The meaning of each column „norming“:

Column Usage

Name Own notation

Norming Currently there are two supported norming types, either “linear” or “text”
 “linear“ means the value from the PLC has to be converted. In this case the fields “plc value 1”, “HMI value 1”, “plc value 2”, “HMI value 2” are “texts”, which means that they want to assign stateful texts to the PLC-values. This can for example be the state of a multistage actuation.

unit /state At the norming „linear“ the text for sthe scale unit will stand here. (e.g. °C, %, pieces, ...)

At the norming „text“ the states are listed here with the following syntax:
 <comparison><value>:<text>

For each state a new line has to be entered.

<comparison> is optional. If <comparison> is not entered the values will be compared to equality.

Example for actuation:

0:OFF

1:step1

2:step2

For comparisons the following states can be defined aswell.

A temerature should be observed. A text should be printed out whether the value is within limit or exceeded the limit. The value is within limit as long as it is between 20 and 30. This looks like following:

>=20: normal

<=30: normal

<20: too low

>30: too high

>60: far too high

As number enter the values which result from the conversion of the fields “plc value 1”, “HMI value 1”, “plc value 2”, “HMI value 2”.

Conversion For displaying the conversion of the numeric PLC-value a physical value an assignment of the PLC-value and the HMI-value is necessary.

The displayed value is calculated like:

$$w = m * x + t;$$

$w = \text{the displayed value}$
 $m = (\text{HMI-value2} - \text{HMI-value1}) / (\text{PLC-value2} - \text{PLC-value1})$
 $t = (\text{HMI-value1} - m * \text{PLC-value1})$
 $x = \text{the current PLC-value}$

see an example with the PLC-value 0 – 2048 correspond -256 to +256 in the display

PLC-value1 PLC-value, which corresponds the HMI-value1. (0)

HMI-value 1 HMI-value, which corresponds the PLC-value1. (-256)

PLC-value 2 PLC-value, which corresponds the HMI-value2. (2048)

HMI-value 2 HMI-value, which corresponds the PLC-value2. (256)

10.12.6 Configure messages

Access rights Level

Write Superuser

Read / View U2

The actual messages are configured separately. The relation between variable, norming and report groups can be defined there, whereof the actual message will result from.

The order of the messages is resolved by input. In later versions it can also be changed.

config messages																	
no.	text	variable	active	Delay (sec.)	if	limit	norming	G0	G1	G2	G3	G4	G5	G6	G7	G8	G9
1	UPS power supply	E 4.0	x	10	==	0.01	OutOf	x									
2	incoming air temperature	HW20	x	200	>=	40.00	Degrees C*	x			x	x		x			
3				0	**	0.01											

The meaning of each column „messages“:

Column Usage

Text Own notation

Variable Here you can assign a variable to the message. If no variable is assigned only the text will be displayed.

Active If the cross is set, the message is active and worked up. Without cross the variable will not be worked up.

Delay The time, after which the message is sent out when the limit is exceeded in seconds. So a measured value can be debounced.

If The requirement / comparative operation to realize a limit transgression or a report condition.

Possible comparisons:

==, >=, <=, <>, ** means no limit observation, only displaying

G0 – G9 The assignement to each report group. So the particular message is assigned to a group of recipients.

10.12.7 Basical HMI-Settings

Access rights Level
 Write Superuser
 Read / View U1



To activate a report processing basical settings have to be done. Before activating these settings the messages should be projected.

The meaning of each row:

Row	Usage
name of plant	This text will be sent to the recipient in the SMS-header, so that he can identify the sender
Sign with transmit time	With „yes“ the transmitting time will be inserted to the SMS-header, important: Set the time correctly.
Insert message time	With „yes“ the time at which the message occurred will be inserted into every message. Thereby the SMS will be longer but the moment at which the message occurred can be protocolled.
activate SMS server	Yes / No
max. number of Send attempt SMS:	number of repeat to send a SMS if this can not be delivered
SMS sender for UCP	At the UCP-Protokoll the phone-number of the sender has to be sent to the SMS-Server.
activate Email Service	Yes / No
max. number of Send attempt (EMail):	number of repeat to send a E-Mail if this can not be delivered

10.12.8 Special function: Dialing to a client

You need for a certain condition an alarm of an user and sure would like to go, that he has get the previously sent message, then you can "wake up" these users by calling.

Proceed as follows:

1.) Define a provider-entry with the number of the user who should be awakened:

- baudrate: max.analogue
- protocol: DIAL ONLY

2.) Define a client which uses this provider (phone number doesn't matter, it is not used).
 If there is a message for this recipient, then the number of the provider is called. The "max. number of Send attempt SMS" = Number of calls until the message is deleted.

10.12.9 SMS message buffer

Access rights Level
 Write Superuser
 Read / View U2

On the site sms message buffer you can see the queued messages which have not been sent yet. The column "tx trying" shows the number of tries to send the message. This is bigger than 0 when for instance the phone-line does not exist, is busy or the server-settings have not been set correctly. The highest number of tries will be reported to the PLC (see above).

SMS message buffer PbxSDNST				
time	page receiver	provider	text	tx trying
09.03.2005 16:43	Mr Maier.017188299382	TD-1 SMS	09.03.2005 16:43: UPS power supply: O F F	1
09.03.2005 16:43	Mr Maier.017188299382	TD-1 SMS	09.03.2005 16:31: Comm.-error:PLC 2(2)	1

By clicking the symbol every message in the list will be deleted. The messages will not be sent! For test purpose you can remove the phone-cable so you can test the functions of the machine without causing costs for sms-sending.

10.12.10 Show Messages

Access rights Level
 Only reading is possible U1

In the menu item show messages you can view the current state of the messages. The state of every projected message is shown there. Even those, which can not create messages.

Thereby a state of the machine can be watched without a PLC-programming software

The message window is refreshed every 3 seconds. When a field is marked red it means that the limit has been exceeded.

Show Messages PbxSDNST -	
UPS power supply	OFF
incoming air temperature	Comm.-error

10.13 Function of the TELE-SWITCH as MUX (compatible with Siemens-MUX 757)

All DIP switches are turned to the following adjustment corresponding to the slave number:

DIP 1 DIP 2 meaning

OFF OFF channel 1 to 8 corresponding to slave 1 to 8

ON	OFF	channel 1 to 8 corresponding to slave 9 to 16
OFF	ON	channel 1 to 8 corresponding to slave 17 to 24
ON	ON	channel 1 to 8 corresponding to slave 25 to 30

The remaining DIP switches are all turned OFF. For the calling, the usual PG-BUS-calling is used.

10.13.1 Function as TELE-SWITCH

DIP 3 has to be turned ON, DIP 1 and DIP 2 according to the above table. The TELE-Network device supports with this operation mode only the slave numbers 1 to 16.

The TELE-SWITCH can be operated at the PLC-or PG-socket of a TELE-Network device that is configured as PLC-TELE. In the PG-TELE, the following adjustments have to be made for calling a channel:

Menu item: TELE-SWITCH

1st line: TELE-SWITCH

2nd line: xx to ChaNr: yy xx = PG or PLC (UP/DOWN key)

yy = Channel 00 (fed-through mode finished)

yy = Channel 01 to 16 (call corresponding slave number)

After this input, the question "Switch? YES/NO" is displayed:

- YES Input is taken over, channel is called
- NO Input is dismissed, present condition remains

If there is a call, then it is reported whether the call or the transformation respectively were successful or not. After connection clear-down, the SWITCH is automatically deactivated.

10.14 Possibility of Programming of Siemens OPs

With the TELE-Network devices with a software version bigger than 4.41 it is possible to programm Siemens Ops. For this, you have to do following:

10.14.1 Programming with ProTool lite:

With this, you can programm the OP7/17 directly with ProTool lite. You have to connect the programming port of the OP with the PG-Port of the PLC-TELE. On the PG-TELE side, you connect your PC on the same way as you want to programm the plc. After connecting the two modems via telefon line, you restart your OP for beginning the transfer, after this, you change to the menu item Special on your PG-TELE and activate the ProTool 7/17. Now you can transfer your project to your OP. After programming your OP, you can end the ProTool-Option with pressing the ? - key. Now, your TELE-Network device is in the standard programming mode, for example for the S5 or the S7.

By this way, you can also programm the C7, too.

10.14.2 Programming with ProTool:

For programming the bigger Ops, like OP27 / 37, you can't use the software ProTool lite. For this

OPs you use ProTool. This OPs can be programmed only via MPI-Protocoll, because, the standart protocoll of programming is not modem like. For this, you must configure following:

- Connection of PLC-TELE with MPI/PPI-cable and MPI-Netz-Adapter to the OP
- Change devicetyp of PLC-TELE to PLC-S7 300/400
- The ProTool-Software must be installed in the simatic manager
- In your project or the OP must be activated the MPI-Interface for transfer

After connect of the telefon line, you restart the OP for the transfer mode. Now you start your transfer with your ProTool-Software via PC-Adapter and 19200 Baud. After the OP is programmed, you disconnect the telefon line and your OP is ready to work.

This Method works with S5 OPs, too. But you need for this way the simatic manager for Step 7. This is only way to programm OPs.

10.15 Controlling of the TELE-Network-Devices with TAPI-Interface

The Tele-Network-Devices can be controlled with the TAPI-Interface with MS Outlook for example. So you can dial or hang up, without using the keyboard of the tele-network-devices. So, if you have edited more telefon numbers, for example 135, so you don't have the time, to pull down until, you got your telefon entry number 135. So you can controll this with a comfortable software.

You need following configuration:

You connect your PC with the second COM-port with a so-called Nullmodemkabel (it's a cable not 1to1, you have twisted pairs) to the plc-V24-port of the tele-professional. After this, you install in your pc a standart modem for this com-port.

Please note following:

TAPI-controll to TELE-Professional:

Dial mode (ton/impulse), count of rings, busy identify you must configure it on the TeleProfessional.

(Tested with Outlook 2000)

1. Connection to AG-socket => Baudrate: 9600,8,N,1 without Handshake!
2. Choose standart analog modem (via WIN 9x, install NT first)
3. In the number (MS Outlook: contact!) the following function can be introduce via special characters:

! => Pin number is following, but it is only a numeric oin allowed, you can't transfer ASCII-characters with the TAPI-function

(=> Baudrate is following

(12 = 1200 Baud

(24 = 2400 Baud

(48 = 4800 Baud

(96 = 9600 Baud

(144 = 14.4 KB Baud the maximum of the modem)

=> callbackwith the RRV-number (max 9 figures)

Example:

Dial the number 00418762112 with PIN:45671, baudrate 4800 and call back from swiss to germany. The number via contac is:

00418762112!45671(48)0049

The placement of PIN, call back option or baudrate don't care, it is only important, that the telephone number is at first.

10.15.1 More commands for the TAPI-function

After, you get the connect via telephone line, you have more commands for the TAPI-function via the PLC-V24-interface. All commands begin with "AT[". You must define every command allow, you can't send 2 commands in one command line. Every command must be closed with a CR.

command	function
AT[A	Connects the PG-TELE to the PLC-port of a PLC-TELE
result	
OK	All is OK
ERROR	Nothing is OK, there must be a failure
You must login	Function can't be activated, the other device has a activated pin and there was no login, yet.

command	funktion
AT[B	Connects the PG-TELE to the PG-port of a PLC-TELE
result	
OK	All is OK
ERROR	Nothing is OK, there must be a failure
You must login	Function can be activated, the other device has a activated pin and there was no login, yet.

Nothing is OK, there must be a failure

command	function
AT[Dx	Tele-switch function over the PD-port of the other device. X is for the portnumber, you want to connect, possible values are 1 to 16.
result	
OK	All is OK
You must login	Function can be activated, the other device has a activated pin and there was no login, yet.

command	function
AT[E	Direct mode without handshakes is activated. It will be used the in the PG-TELE define parameter for source- and destination-com. After, you have activated this mode, the ending will be only reached, you change the status of the DSR-line (ALT-H for ZOC or TELIX). Or, you press any key on the TELE-PROFessional-II.
AT[F	see for AT[E, only with activated handshakes (RTS/CTS)
result	
OK	Direct mode is activ
ERROR	Function not OK, maybe, source com not correct defined.
Direct mode off	Direct mode is deactivated, somebody with the keypad, or DSL-line

You must login Function can be activated, the other device has a activated pin and there was no login, yet.

command function

AT[Gx Only for Siemens-TELE-Professional-II. Changes the plc-type, x stands for the plc type. Possible values. Attention: These switch need a few seconds time.

- x Meaning
- 0 SIMATIC-S5
- 1 Not for use
- 2 SIMATIC-S5-KOR/MUX/IBX
- 3 SIMATIC-S7 300/400
- 4 SIMATIC-S7 200 9K6
- 5 SIMATIC-S7 200 19K2
- 6 SIMATIC-S5 with F-Typ

result

OK All is OK

ERROR Nothing is OK, please check the parameter you used

You must login Function can be activated, the other device has a activated pin and there was no login, yet.

command funktion

AT[S delivers the current status of the device back

result

No carrier A phone connection doesn't exist at the moment.

Connect, PLC:online A phone connection exist. The PLC-device which is connected to the PLC-port is ONLINE

Connect, PLC:offline A phone connection exist. The PLC-device which is connected to the PLC-port is OFFLINE

Connect, PD:online A phone connection exist. The PLC-device which is connected to the PD-port is ONLINE

Connect, PD:offline A phone connection exist. The PLC-device which is connected to the PD-port is OFFLINE

11 Technical data

Supply voltage: 24V DC +/- 20%

Power consumption: 15 watt

Display: expressive LCD display
5 status LEDs

Handling/Configuration: integrated keypad
WEB-Browser

Interfaces: to the PLC:
PPI/MPI/Profibus interface: 9,6 KBd - 12 MBd

TTY/20mA current loop (AG-TELE aktiv, PLC passiv)
 RS232: 9,6 KBd - 115,2 KBd / fully assigned
 to the PD/PC:
 10/100BaseTX RJ45-ethernet jack
 TTY/20mA current loop (100 % mechanically and electr. compatible)
 RS232: 9,6 KBd - 115,2 KBd / with a 1on1-cable to the PC
 others:
 2xUSB, 2xPCMCIA (only for version -H)
 33K6 HIGH-SPEED, V.42/BIS MNP5 analogue modem
 ISDN (Euro ISDN + 1TR6)

Integrated modem:

Operating temperature: 0 - 55°C

Case: powder coated metal case with mounting flange and DIN-rail mounting

Dimensions: Flat 300 x 175 x 70 mm
 Hoch 67 x 280 x 170 mm

Scope of delivery:

Tele-Prof-II
 Power connector 3pins big

11.1 Assignment of the connection pins of the TAE-SOCKET (RJ11)

Pin no..	short form	name
1	G	Alarm Clock
2	B2	Output for phone
3	B	to telephone network
4	A	to telephone network
5	A2	Output for phone
6	E	ground

In the 4 pin version there are two outside pins.

11.2 Pin assignment TAE6

Pin no.	short form	name
1	A	to telephone network
2	B	to telephone network
3	G	Alarm Clock
4	E	ground
5	B2	Output for phone
6	A2	Output for phone

11.3 pin assignment ISDN

Pin no.	Short Form	name	direction
1	NC	Not connected	

2	NC	Not connected	
3	TX +	Send line +	Out
4	RX +	received line +	In
5	RX –	received line –	In
6	TX –	Send line –	Out
7	NC	Not connected	
8	NC	Not connected	

11.4 Pinning Ethernet

Pin no.	Short name	Notation	Direction
1	TX +	receive line +	Out
2	TX –	receive line –	Out
3	RX +	send line +	In
6	RX –	send line –	In

11.5 Pinning (USB) PC

Pin No.	Short form	Description	Direction (cable – view)
1	Vcc	Power supply (DC)	In
2	D –	Data line –	BiDi
3	D +	Data line +	BiDi
4	GND	Ground	In

Important:

Please do not lengthen this side, this side also supports the 5V/DC power supply (max. cable length are 5 meters)



A longer cable would decrease the quality of the signal on the bus and may cause several errors in the transmission!

11.6 Pin assignment of TTY / 20mA current loop for the PD socket

Pin no.	short	description	direction
1	Mext	external ground	Out
2	TTY IN –	receiving data –	In
3	+5V	power Supply +5V	Out
4	+24V	power Supply +24V	Out
5	GND	internal ground	Out
6	TTY OUT +	Send data +	Out
7	TTY OUT –	Send data –	Out
8	Mext	external ground	Out
9	TTY IN +	receiving data +	In

10	M24V	ground +24V	Out
11	I-Tx	20mA current source transmitter	Out
12	GND	internal ground	Out
13	I-Rx	20mA current source receiver	Out
14	+5V	power Supply +5V	Out
15	GND	internal ground	Out

11.7 Pin assignment for the RS232 PD socket

Pin no.	short	description	Richtung
1	DCD	receive line signal detected	In
2	TXD	send data	Out
3	RXD	receive data	In
4	DSR	transmission device ready	Out
5	GND	signal ground	
6	DTR	data device ready	In
7	CTS	ready to send	Out
8	RTS	request to send	In
9	RI	ring signal	In

This cable is designed to be connected directly on a PC. Optionally, the cable can be lengthened by a 1:1-cable up to 15 m.. The cable should have a good quality.

11.8 Pin assignment TTY / 20mA current loop for the AG plug

Pin number.	Short form	Designation	Direction
1	Mext	external mass	output
2	TTY OUT –	transmit data –	output
3	NC	not used	
4	NC	not used	
5	NC	not used	
6	TTY IN +	receive data +	input
7	mass (TTY IN –)	receive data –	input
8	Mext	external mass	output
9	20 mA for receiving (TTY OUT +)	transmit data +	output
10	NC	not used	
11	NC	not used	
12	NC	not used	
13	NC	not used	
14	NC	not used	
15	NC	not used	

Thus a connection to a TTY-compatible interface is available, by means of a 15-pin 1:1 cable.

11.9 Pin assignment RS232 for the AG-plug

Pin number	Short form	Designation	Direction
1	NC	not connected	
2	RXD	receive data	input
3	TXD	transmit data	output
4	DTR	data device is ready	input
5	GND	signal mass	
6	DSR	transmission means ready	output
7	RTS	request to send	input
8	CTS	ready to send	output
9	NC	not connected	

The cable is designed so that it can be directly connected to the PC. Optionally the end of the cable can be extended with a 1:1 extension cable up to 15m. A good quality of the extension cord must be respected.

11.10 Pin assignment MPI

Pin No.	Notation	Signalname	Direction (of cable)
1	NC	Not Connected	
2	NC	Not Connected	
3	Ltg_B	Data line B	Bi - Dir.
4	RTS-AS	Request to Send from the PLC	In
5	M5V	Ground of the 5V	In
6	5V Out	5V output	Out
7	NC	Not Connected	
8	Ltg_A	Data line A	Bi - Dir.
9	RTS-PG	Request to Send to the PLC	Out

Note:

The shield is placed to the SUB-D plugs

In order that the cable recognize the direct participants, RTS-AS and M5V must be placed.

Observe:

please do not lengthen this side of the cable, because on this side of the cable 24V DC or 5V/DC power supply also be carried.



For a prolongation, please supply the cable with external power and only the signals Ltg_A and Ltg_B 1:1 lengthen. Add the shield on both sides to the SUB-D plug optionally insert termination resistors (on the bus-END).

11.11 pin assignment power supply

Pin number	Short form	Designation	Direction
1	P24V	24V DC voltage	input

2 PE earthing input



3 M24V mass input

12 Miscellaneous

12.1 World-wide use of the TELE-PROFessional-II (modem connection)

Normally, TAE-socket and German cable can always be connected to the corresponding AB-line! In this way, there is a protection against the connection of other phones as well.

Country	Modem type	Cable
Abu Dhabi	USA	USA
Africa	USA	USA
Algeria	USA	USA
Argentina	USA	USA
Australia	USA	USA
Belgium	D	B
Brasilia	USA	USA
Chile	USA	USA
China	USA	USA with IDD-line *
Denmark	D	DK
Dominikan Republic	USA	USA
Great Britain	USA	USA
Finland	D	D with TAE-Dose **
France	D	F
Greece	D	D with TAE-socket **
Hong Kong	USA	USA
India	USA	USA
Indonesia	USA	USA
Ireland	USA	USA
Israel	USA	USA
Island	USA	USA
Italy	D/USA	USA
Japan	USA	USA
Jemen	USA	USA
Kanada	USA	USA
Kasachstan	USA	USA

Kenya	USA	USA
Columbia	USA	USA
Korea	USA	USA
Croatia	USA	USA
Latvia	USA	USA
Luxembourg	USA	USA
Malaysia	USA	USA
Marocco	USA	USA
Mexico	USA	USA
Moldova	USA	USA
New Zealand	USA	USA
Netherlands	D	NL
Norway	D	D with TAE-socket 2)
Austria	D	A
Peru	USA	USA
Philippines	USA	USA
Poland	USA	USA
Portugal	USA	USA
Puerto Rico	USA	USA
Romania	USA	USA
Russia	USA	USA
Sweden	S / D	S / D with TAE- socket 2)
Switzerland	D / CH	CH
Serbia	USA	USA
Singapore	USA	USA
Slovenia	USA	USA
Spain	D	USA
Sri Lanka	USA	USA
South Africa	USA	USA
Syria	USA	USA
Taiwan	D / USA	USA
Thailand	USA	USA
Czech Republic	USA	USA
Turkey	USA	USA
Hungary	D	D with TAE-socket
USA	USA	USA
Venezuela	USA	USA
United Arab Emirates	USA	USA

* The IDD-line is normally available in every big firm in China; otherwise, the communication is very bad, almost like a second parallel phone network.

** In Scandinavia, please note that calling with inband signalling is possible without problems with the German modem. However, with pulse dialling, the Scandinavian system differs from the German system:

dialling series

German (European) system: 1, 2, 3, 4, 5, 6, 7, 8, 9, 0

Scandinavian system: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9

For a call from Sweden to the following German number: 0049-11833

(information service of the Telekom) the following number

has to be input: 1150-22944.

Attention:

For a world-wide operation with the TELE-Network devices it is normally indispensable to use for each country in which the modem is used the modem corresponding to that country (e.g. for Great Britain a British modem, for Spain a Spanish modem and so on). Experience shows that this is not always possible. Then, the decision has to be made by the user himself/herself.

The above table that shows the usable modem types for several countries is put together according to practical experience. Therefore it is not guaranteed that the corresponding TELE-Network device has the admission for the operation in the country in question. Technically speaking, the US modem works in every country since it does not have the restrictions a German modem has (as for example bell voltage, bell frequency, charging pulse filter and so on).

12.2 PLC controllers

The TELE-Network device can be used with the following plc-controls:

Siemens:

S5-90 U

S5-95 U

S5-100 U

S5-115 U + F

S5-135 U

S5-155 U + H

S7-200

S7-300

S7-400

+ H1-Option (only for PLC-S5-TELE-devices)

+ L1-Option (only for PLC-S5-TELE-devices)

+ L2-Option (only for PLC-S5-TELE-devices)

+ FAX-Option

+ SPS-Option

+ ASCII-Option (only for PLC-S5-TELE-devices)

Bosch:

CL200

CL300

CL400

CL500

AEG: (on request)

A 120

A 250

Mitsubishi: (on request)

FX-Serie

A-Serie

ALLEN Bradley:

SLC 500 DF1-protocoll + DH485

Klöckner Moeller: (on request)

PS3 plc

PS4 plc (V24)

Selectron: (on request)

PMC 20

GE Fanuc (on request)

Pilz PSS3xxx

Telemecanique Premium TSX57 (on request)

It is important to note that for any of the listed types of PLC is required a special Tele-Network Device. Currently there is no possibility, except for Siemens S5 and S7, to realize two different types of PLCs in a PLC-TELE device.

13 Troubleshooting

Display remains dark

Voltage connected?

Voltage poled?

Modem does not dial

Telephone line connected?

Telephoneline in the correct connector?

Dialling method recognised correctly?

Parameters for dialling set correctly?

Is the phone installation released for data operation?

Is the modem connected to an ANALOGUE connector?

Return call does not work

Are the parameter values for the return call set according to the instructions?

PLC-TELE and PG-TELE correctly configured?

No connect by dialling

Uses your company a Call-By-Call-Provider?

So it is possible, that the line is be multiplexed, and so the carrier ton is be interrupted.

Baudrate correctly configured? For some countries it is better, not to dial with the maximum baudrate, it is better to select a baudrate less than 1 or 2 steps

Device doesn't lift up

Count of rings correctly configured?

A - and B -line correctly connected?

Telefon-lead coreectly connected?

Hardly ONLINE to the plc

TELE-Network device is earthed correctly?

Cable connection between AG-TELE and plc OK?

Is the device really an AG-TELE?

PG-MUX-Mode correctly configured?

No ONLINE to the plc

Cable connection between AG-TELE and plc OK?

Is the device really an AG-TELE?

Cable between plc and tele correct or damaged?