

## Installation SYNAX200

Application Manual

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SYNAX200

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- the installation and commisioning of the SYNAX-AS-R

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# 1 General information about the installation

## 1.1 General information

The installation software and the documentation for the "SYNAX200-AS-R" system can be installed from the CD. This CD contains documentation and software listed in this table.

File type	Description	Type code	Part number
Documentation	System Configurator	DOK-CONTRL-SYS*SER*V21-AW01-EN-P	293 097
Documentation	Function Interface	DOK-CONTRL-FUN*INT*V06-AW01-EN-P	290 470
Documentation	System Configurator for Interbus	DOK-CONTRL-IBS*CMD****-AW01-EN-P	292 716
Documentation	System Configurator for DeviceNet	DOK-CONTRL-SYCON****DN-AW01-EN-P	292 714
Documentation	System Configurator for Profibus	DOK-CONTRL-SYCON****DP-AW01-EN-P	292 712
Documentation	OPC Server	DOK-CONTRL-OPC*SERVER*-FK01-EN-P	288 880
Documentation	WinPCL + SYNAX	DOK-SYNAX*-WINPLC03VRS-AW01-EN-P	292 522
Software	WinPCL	SWD-WINPCL-PO*-03VRS-MS-FILE*	291 492
Software	SYCON	SWD-SYCON*-INB-01VRS-MS-FILE*	291 496
Software	CMD	IBCMD*-INB-01VRS-MS-FILE*	291 497

Fig. 1-1: Contents of the "SYNAX200 + ISP" CD

## 1.2 Prerequisites

To install the PLC programming software "WinPCL" for the "SYNAX200-AS-R" system (control component 'MTS-R') the specified PC must serve the following prerequisites.

### Hardware

- 300 MHz Pentium III or comparable processor.
- At least 128MB RAM; depending on the PLC program volume it makes sense to expand the memory.
- Screen resolution at least 640\*480.
- At least 100MB memory cell for the WinPCL installation should be available on the hard disk.
- A free serial interface (RS232, RS422 or RS485) must be available to connect online to the control.

### Software and settings

- Operating system Windows NT4.0 with at least SP5.
- Internet Explorer 4.01
- The color palette should be set to at least 16 colors.
- At the installation system files are copied and entries are made in the system registry. To make this possible during installation, it is necessary that "Administrator rights" are entered for the user in "Start menu → Programs → Administrative Tools (Common) → User manager".

## 1.3 Target directories

During installation, files are copied to directory

- Windows NT system directory (e.g.: "**C:\WINNT\System32**"). The installation directory of Windows can be queried in the prompt with 'echo %windir%'.)
- directory for shared files (e.g.: "**C:\Program files\Common files\IndShared**"). This directory is on installation drive of WinNT in 'Programs\Common files'.)
- and to the installation directory that can be selected during installation (e.g.: "**C:\Program files\Indramat\WinPCL**").

Necessary drivers and actual system files for the application are stored in the Windows NT system directory. In subdirectory "IndShared" of folder "Common files" all files are stored that are not dependent on the version. The remaining files belonging to the application are stored in the installation directory.

## 2 Installation

### 2.1 Installation of WinPCL

After inserting the CD-ROM the "I-View" browser starts automatically. With this browser you can view the contents of the CD like a web browser. If the start screen does not appear on the PC you can open file "Program\IView32\IView32.exe" with the Explorer and the start screen is also opened.

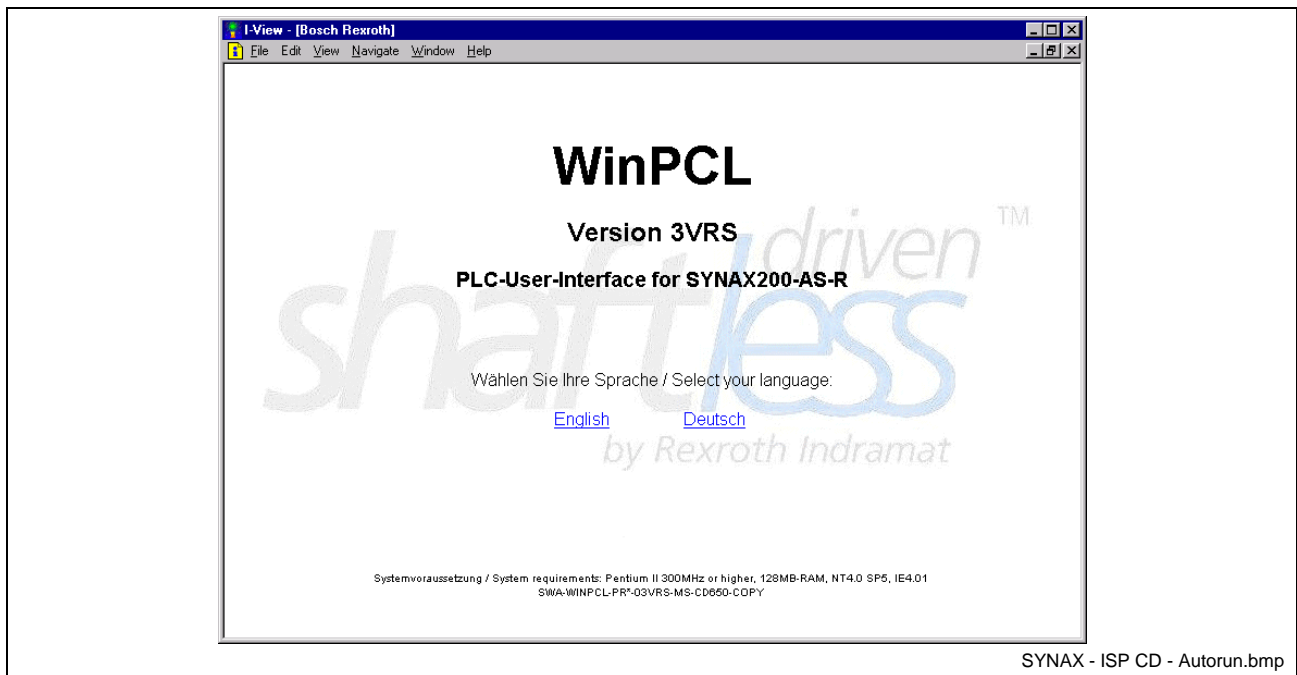


Fig. 2-1: Start screen

After you have selected the language, you get information about the enclosed documentations on the CD. The documentation is stored in windows help format and PDF document. For the PDF document an Acrobat Reader is necessary that can be installed in the actual version.

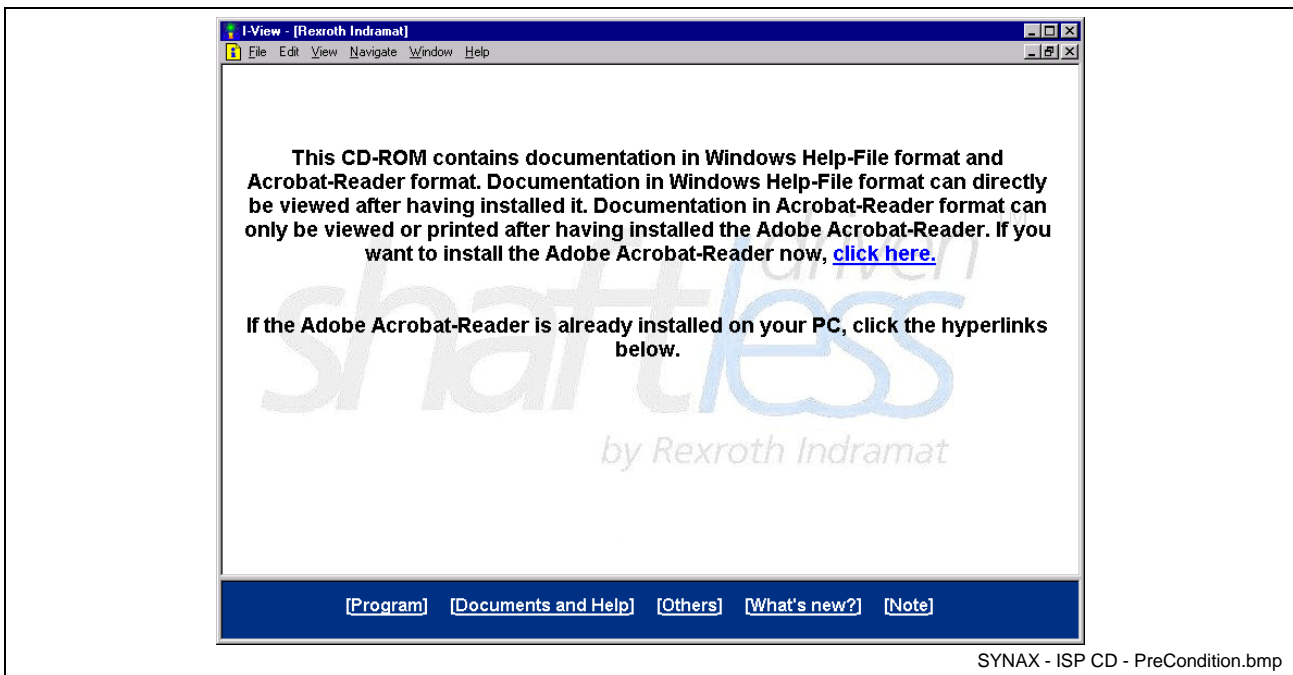


Fig. 2-2: Prerequisites for using the documentation

All programs that are available for installation can be displayed as an overview with the help of the link "Program" in the footer.

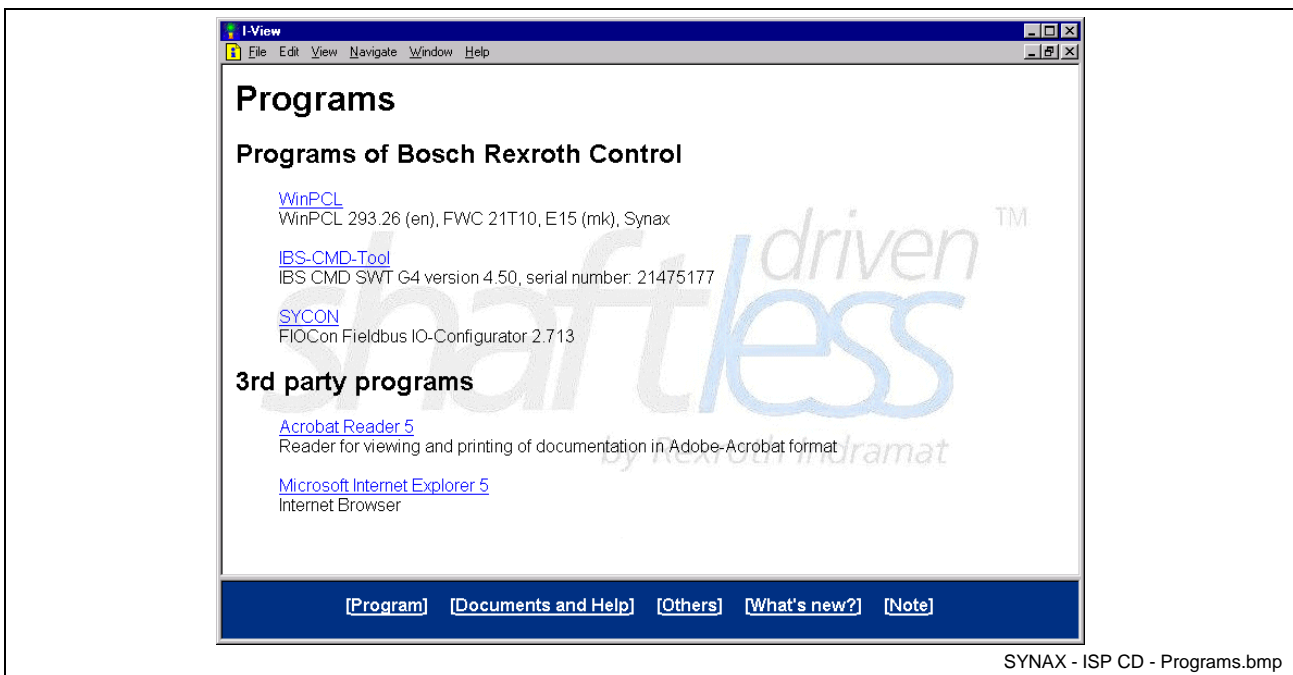


Fig. 2-3: Program overview on this CD

With the selection of link "WinPCL" the installation files for WinPCL become unpacked.

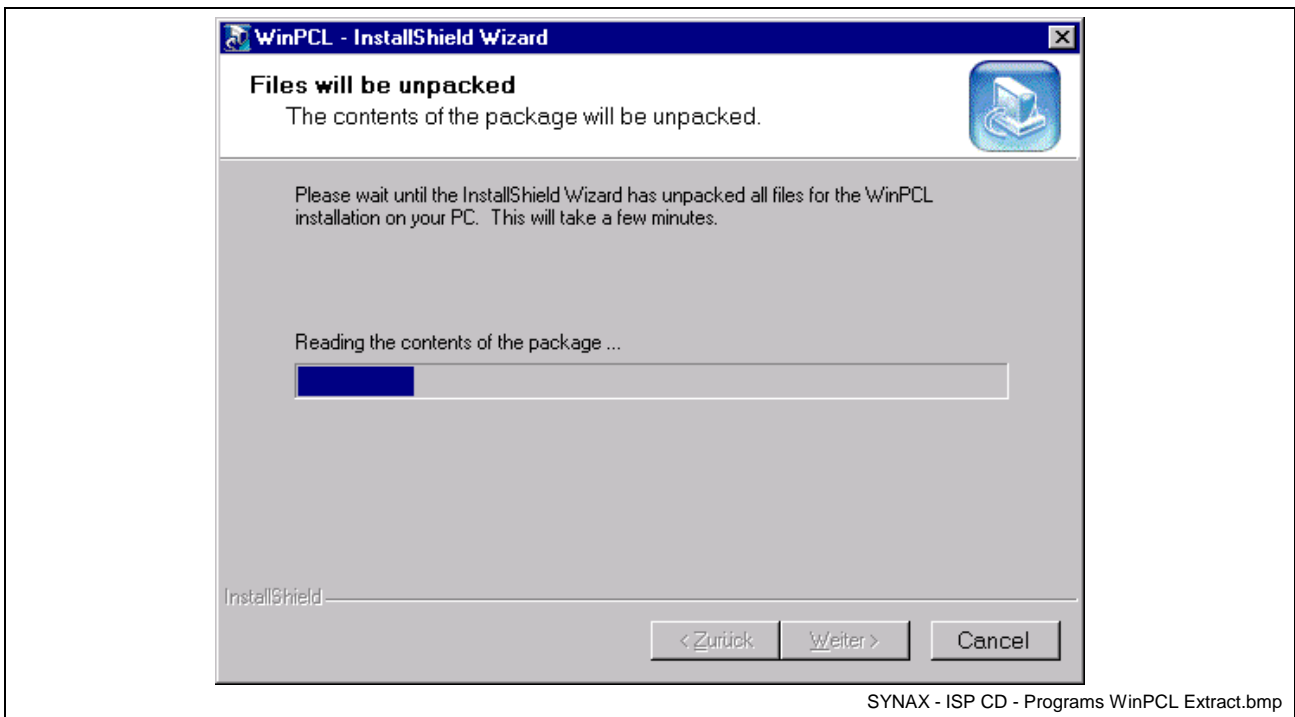


Fig. 2-4: Unpack the installation files - WinPCL

It is also possible to start the installation of the WinPCL programming system with file "Program\WinPCL\Setup.exe" in the Windows Explorer.

If file "SETUP.EXE" is opened then the installation files are unpacked and the setup dialog for selecting the language is displayed. After confirming the language selection dialog the installation is prepared and started.

The first dialog informs you about the installed program and the language of the installation.

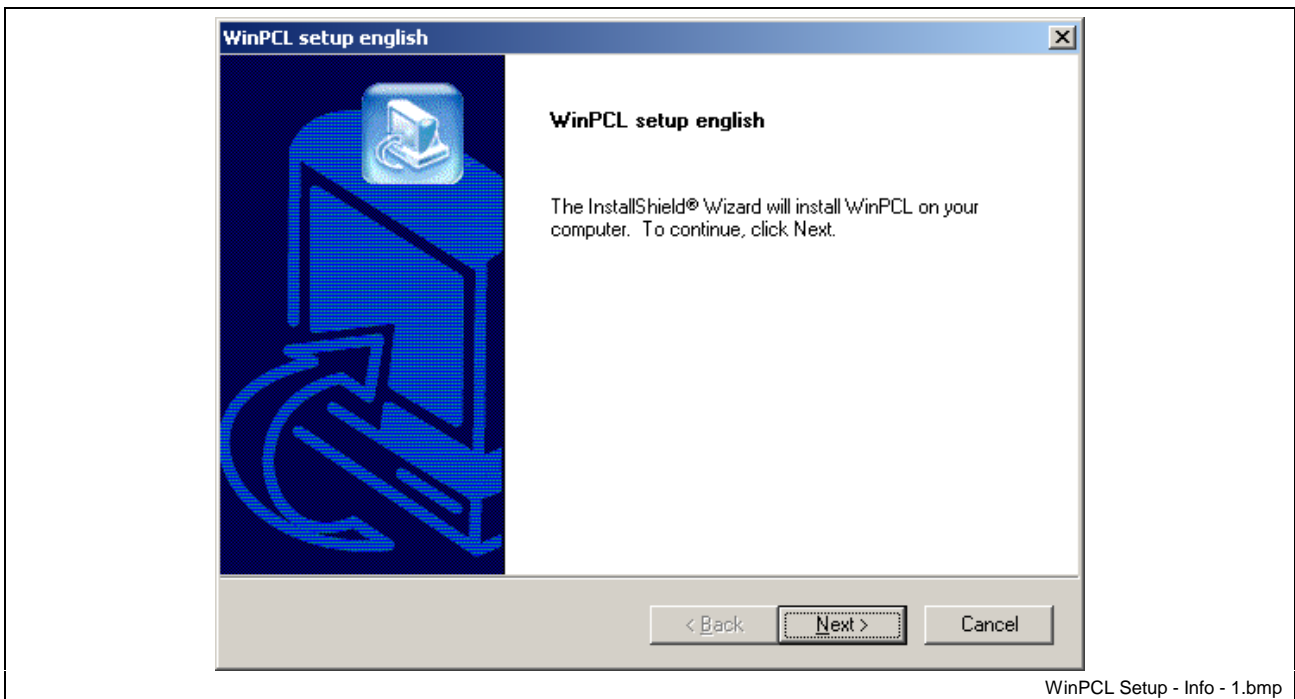
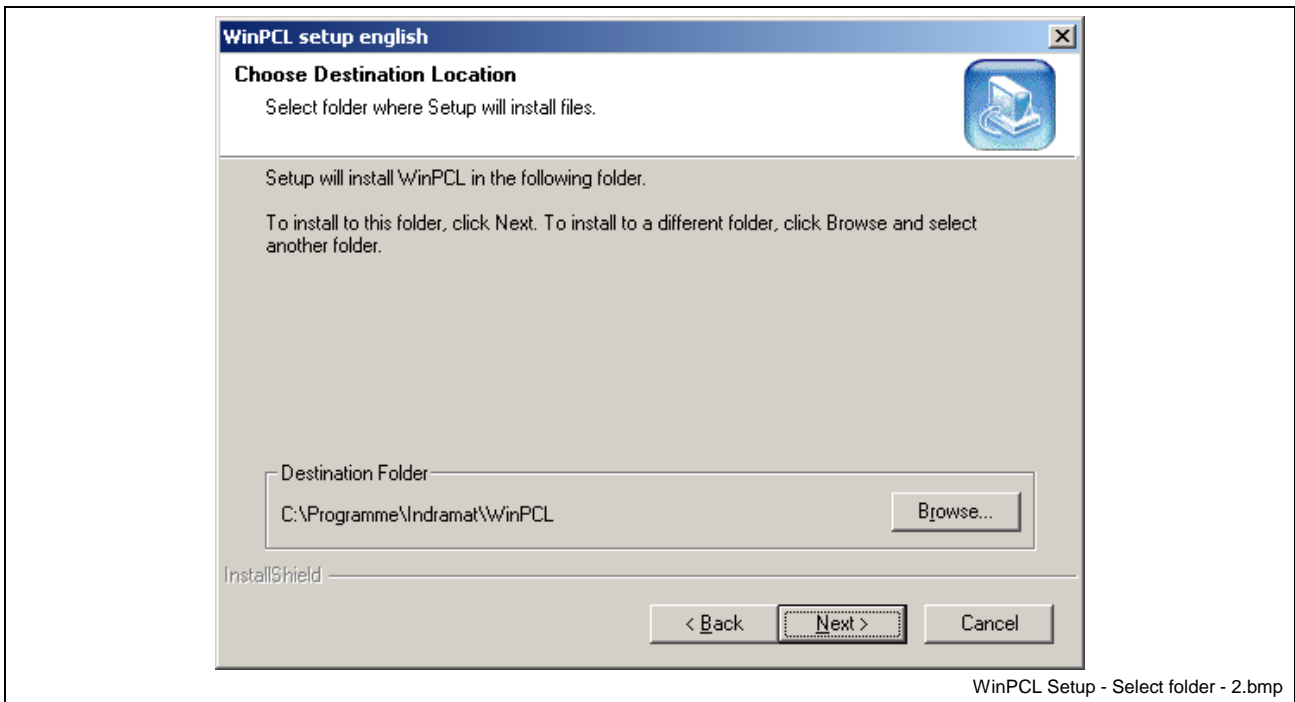


Fig. 2-5: Information about installation

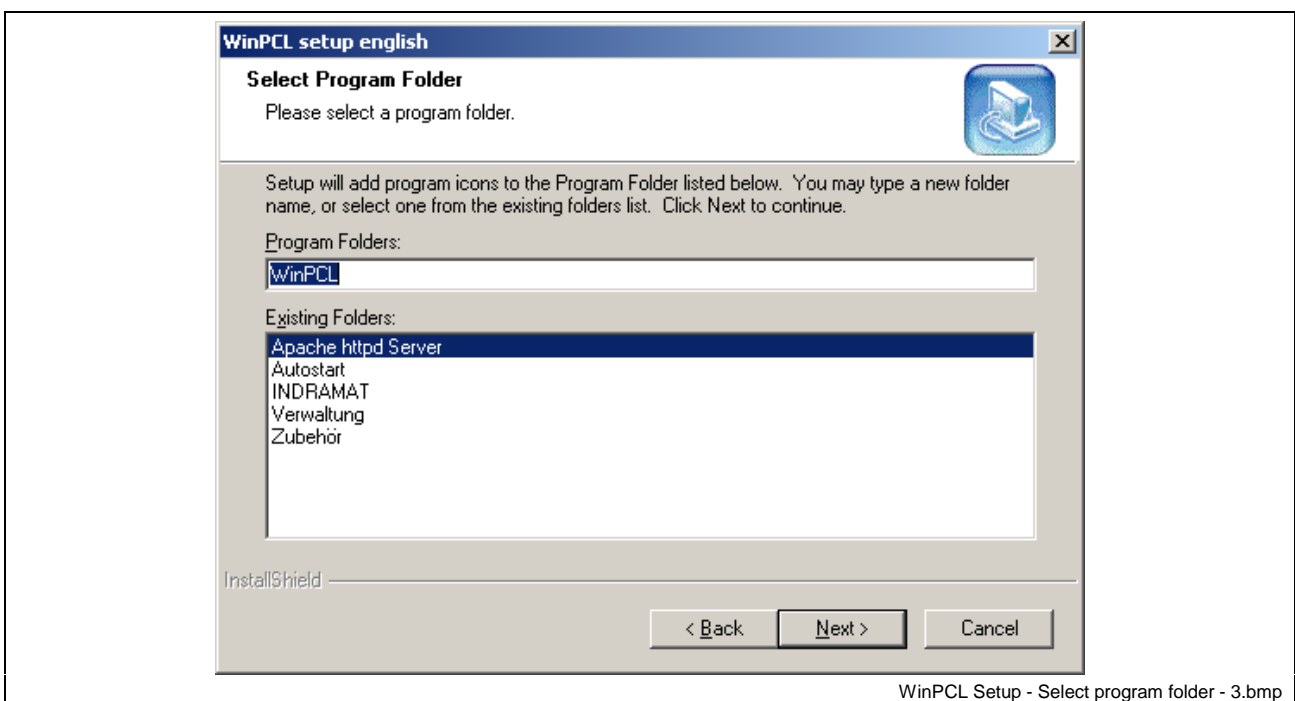
In the second dialog you can select the target directory. In this directory the needed directory structure of the application is created.



WinPCL Setup - Select folder - 2.bmp

Fig. 2-6: Selection of the installation directory

The following dialog allows the selection of the folder in the "Start menu". This program folder will be visible for all users that are registered on this PC.



WinPCL Setup - Select program folder - 3.bmp

Fig. 2-7: Selection of the program folder

In the last dialog the components can be selected that are necessary to work with "WinPCL" before copying the files.

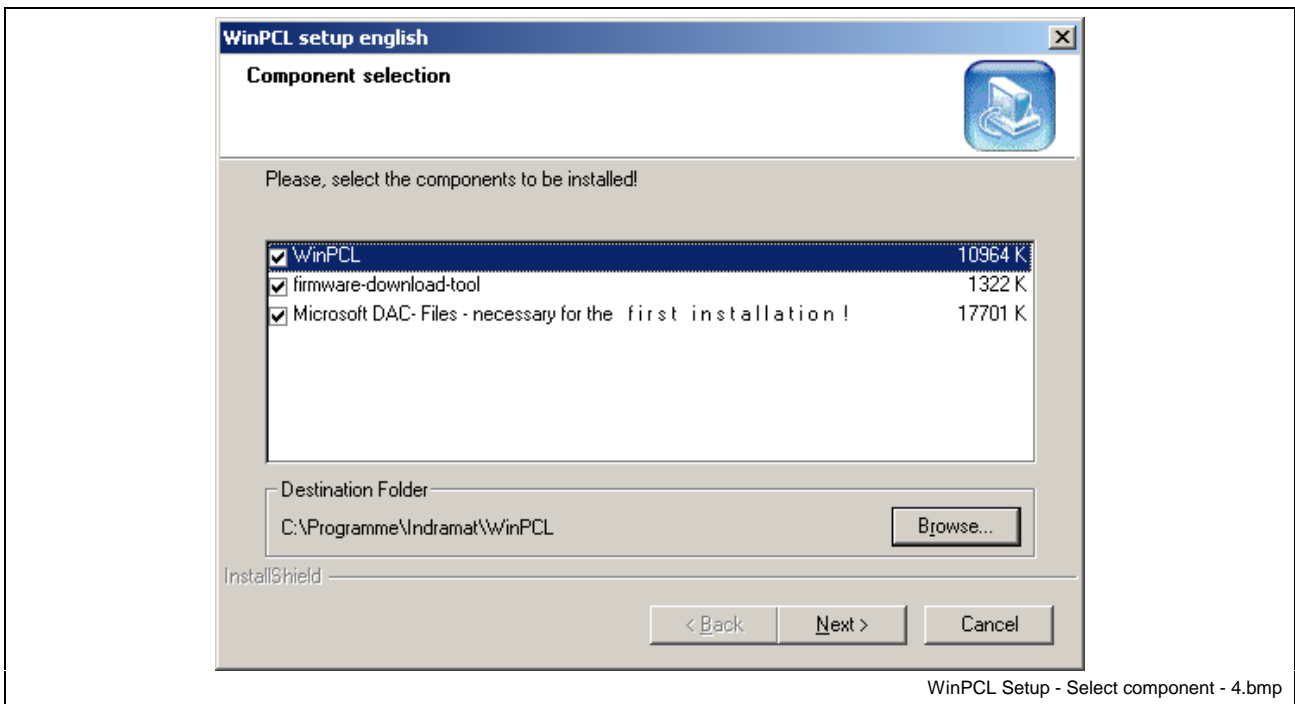


Fig. 2-8: Selection of the components to be installed

After all files are copied and available for the operating system the system must be "Rebooted". Then the components are registered that are necessary for working with the "WinPCL" programming system.

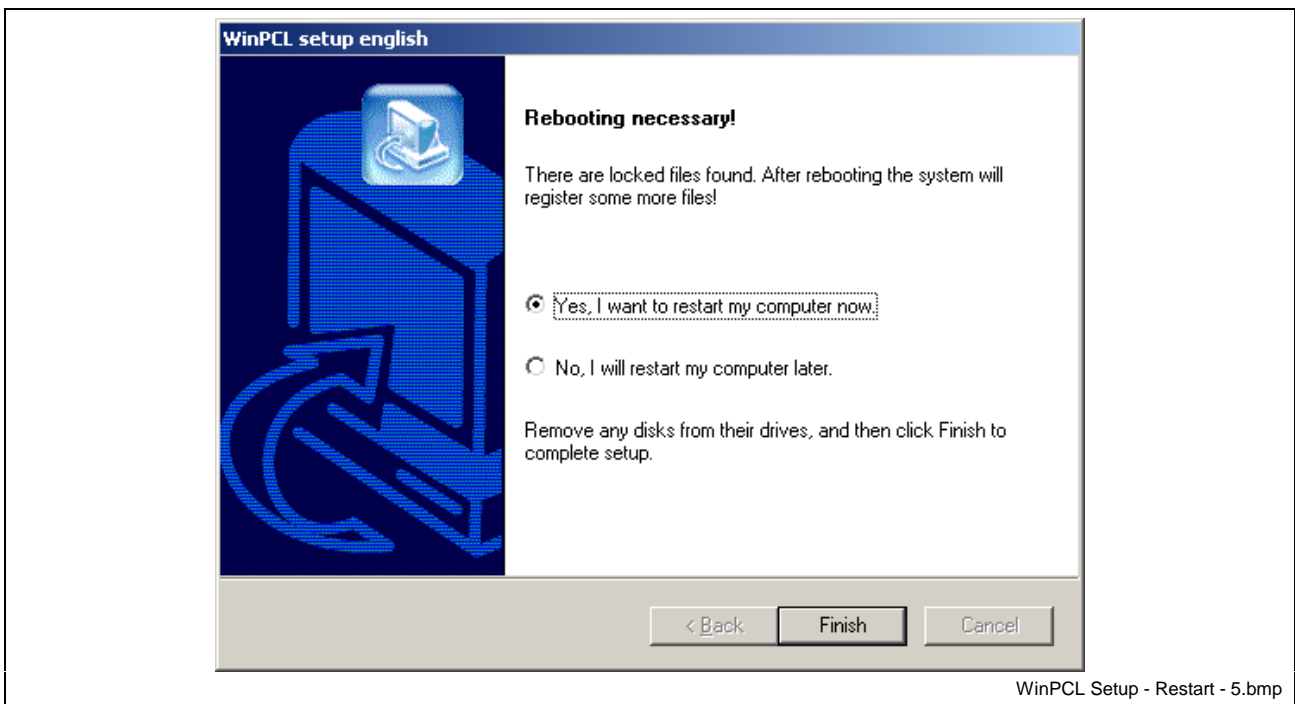


Fig. 2-9: Rebooting the system

## 2.2 Program overview

The installation adds the following links in the selected program group:

- FWA-Download
- KillTask
- Syscon
- Usermanager
- WinPCL
- WinPCL-DockedNav
- WinPCL-Testdesktop

A description of the programs "KillTask", "WinPCL", "WinPCL-DockedNav" and "WinPCL-Testdesktop" can be found on the following pages. The programs "Usermanager", "Syscon" and "FWA-Download" are described in detail in section 3 "User manager", 4 "System configuration - SYNAX200" and 5 "Firmware".

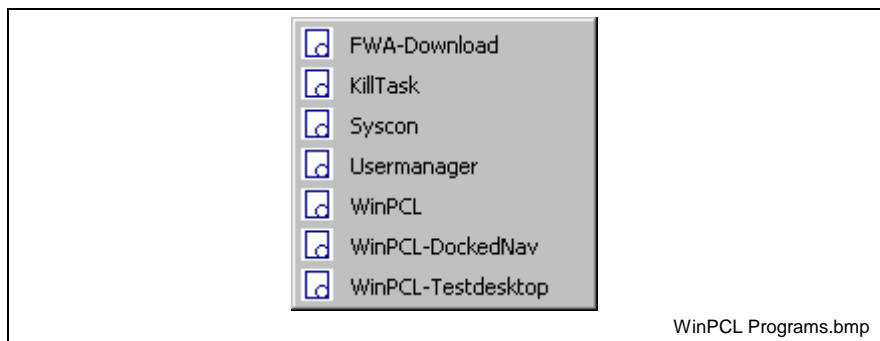


Fig. 2-10: Installed programs

**Note:** Due to a control system must be defined for programming with WinPCL the programs must be called up for the first time in the following sequence.

- User manager (Usermanager)
- System configurator (Syscon)
- Load firmware (FWA download)

After that WinPCL can be started.

### Program KillTask

Program KillTask can be used for terminating the communication process (function interface) and the applied applications (WinPCL). If the program (process) KillTask is started all applied programs (processes) at the function interface are reported a scheduling event. Thereupon they log off and terminate their application.

### Program WinPCL, WinPCL-TestDesktop and WinPCL-DockedNav

"WinPCL..." programs are the programming systems for the PLC programming of Indramat. The user can select the desired program for programming. The difference is the visual display of the MDI windows (MDI: Multiple-Document Interface) in the programming environment.

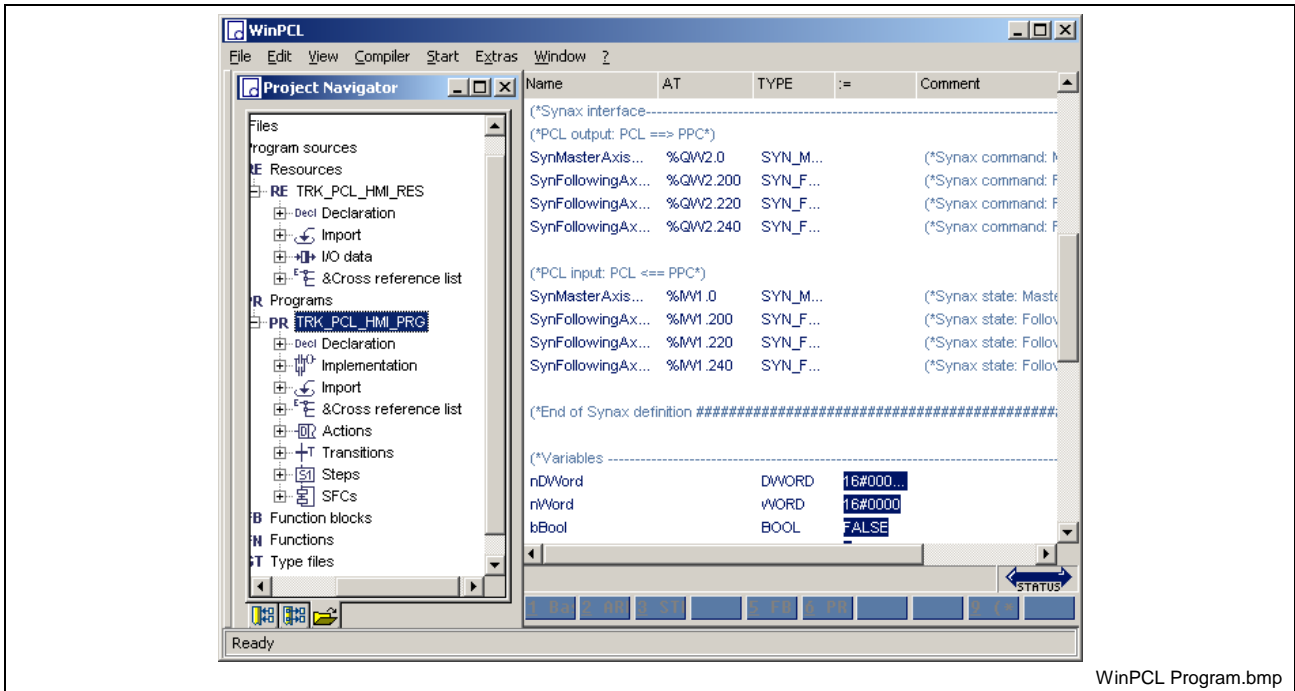


Fig. 2-11: Program "WinPCL"

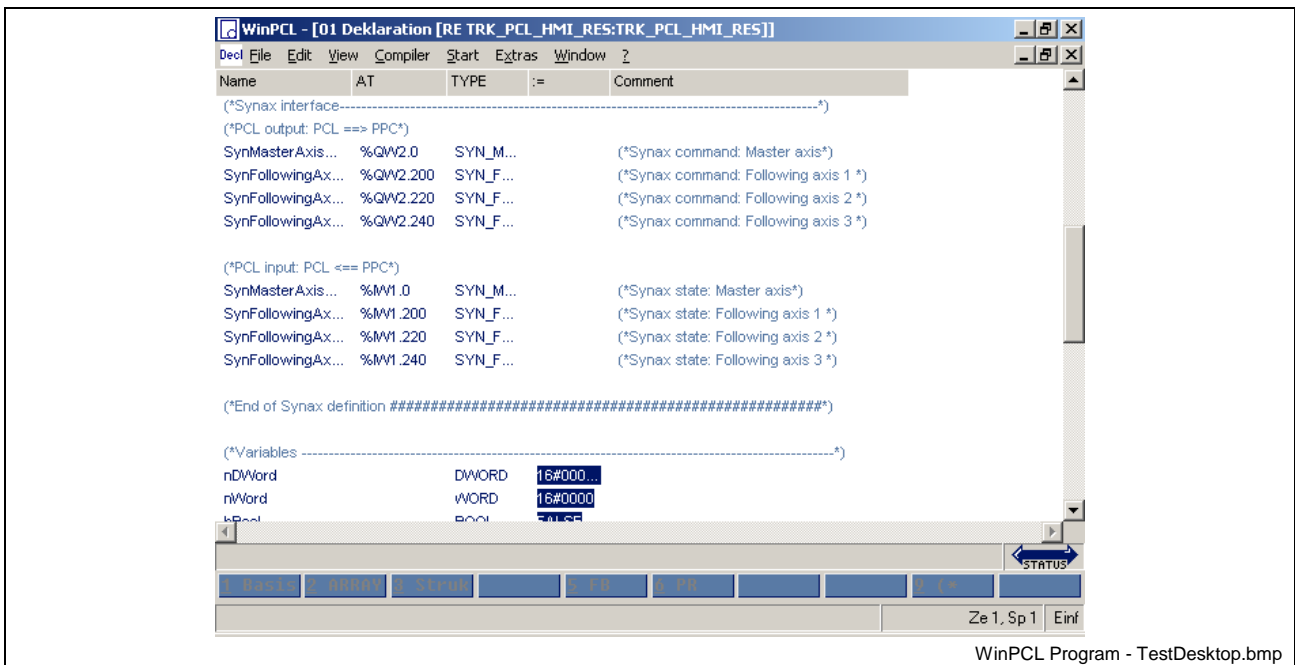


Fig. 2-12: Program "WinPCL-TestDesktop"

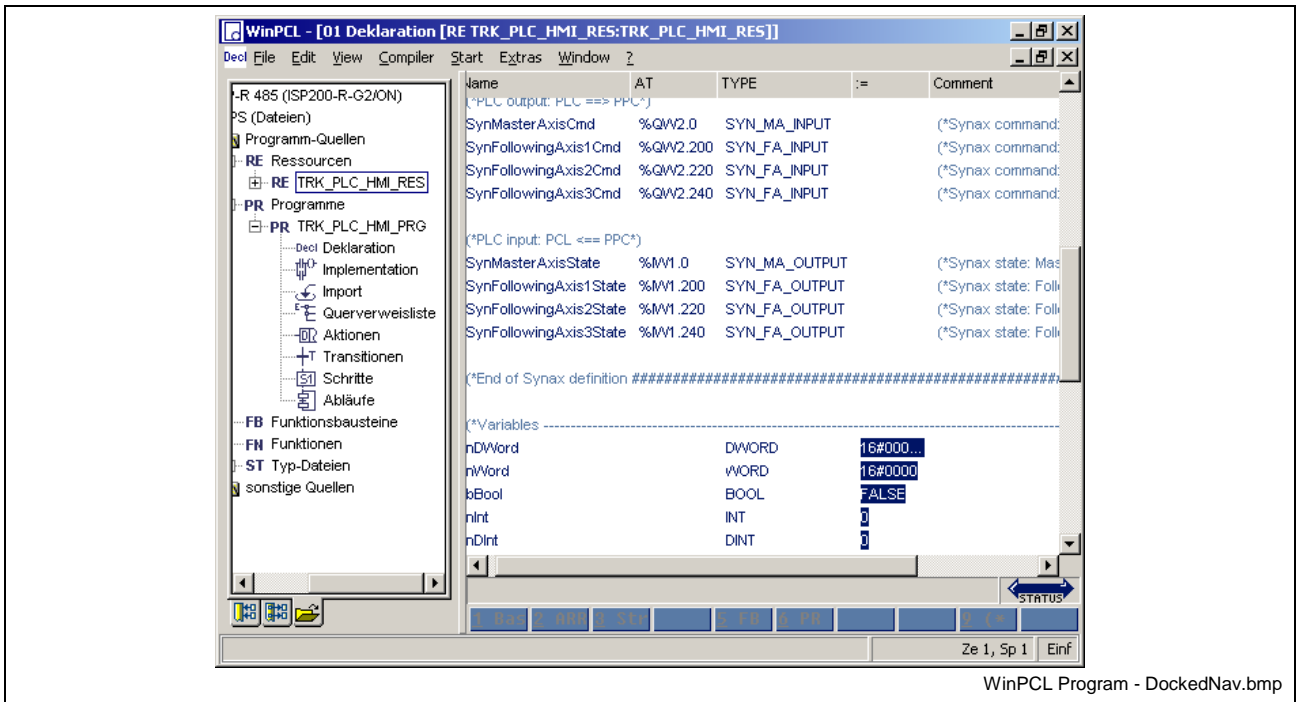


Fig. 2-13: Program "WinPCL-DockedNav"

## 3 User manager

### 3.1 General information

The user manager assigns rights for user of the WinPCL programming system on the PC. It ensures that only persons with the respective rights have access to protected functions (or parts of program). The user must log on at the user manager to execute a protected function. It must be input name and password to log on. The name is used for the identification of the user, the password serves for authenticity. After successful log on the user manager decides on the basis of the user rights if the selected function may be executed or not.

### 3.2 Installation and configuration

After the user manager has been started all entered user and groups are displayed. Additional new users and groups can be created or changed. Changing configurations in the user manager is only possible if the user logs on with a valid name and password. If the user manager was started for the first time the user can log on with the name "Supervisor" and the password "123". To ensure that not every user gets full access to the programming system with the name "Supervisor" the password should be changed and a new user should be entered with the necessary rights.

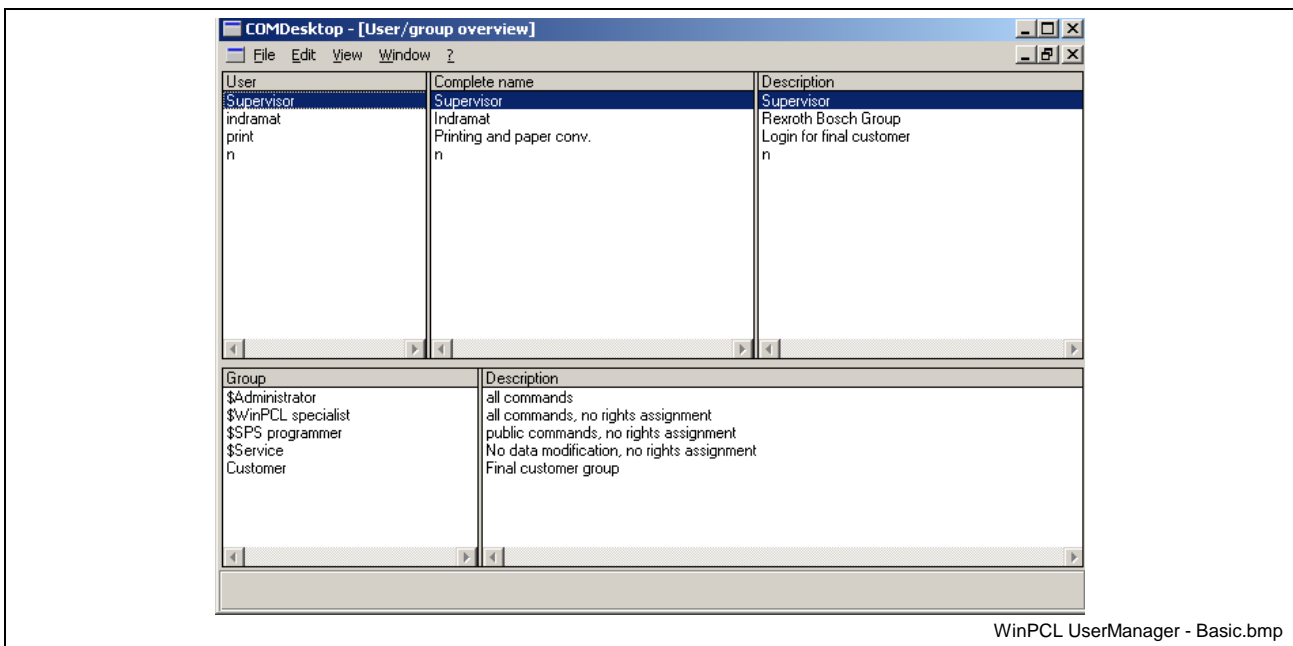


Fig. 3-1: User manager

#### Menu

**Enter new user:** With button "F2 – New user" a new user is entered to the user manager.

**Enter new group:** With button "F3 – New group" a new group is entered to the user manager.

All actions described in the following refer to the user or group selected in the list with the cursor.

- Edit user or group:** The property of a group or a user can be changed with "Edit" (button "F4").
- Copy user or group:** With button "F5 - Copy" the configurations (rights and options) for the user or the group are copied. The user or group name and the properties must be re-entered.
- Clear user or group:** Button "F6 - Delete" clears the selected user or group.
- Assign rights for user or group:** With button "F7 – Permissions" the rights of the user or group can be changed.
- Assign options for user or group:** With button "F8 – Options" the options of the user or the group can be changed.
- Terminate user manager:** The user manager can be terminated with the button "F9 - Exit" or with menu "File - Exit".

### Description of dialogs

With button 'F2' the dialog to input a new user is called up. The first step is to enter the general user data (shown in "Fig. 3-2: Input a new user").

The screenshot shows a dialog box titled "Edit user" with the following fields and options:

- Login name: indramat
- Complete name: Indramat
- Description: Rexroth Bosch Group
- Code: (empty)
- Password: \*
- Confirm passw.: \*
- Password expir.: 30 Days
- Session expir.: 15 Minutes
- Password does not expire
- User not activated
- Buttons: Perm., Group, OK, Cancel

WinPCL UserManager - New User.bmp

Fig. 3-2: Input a new user

If the dialog "Edit user" was terminated with "OK" the user can be selected and with button "Edit" (button 'F4' in the main menu) and activating button "Permissions" in the user dialog or with button "F7 – Permissions" in the main menu the rights for this user can be selected.

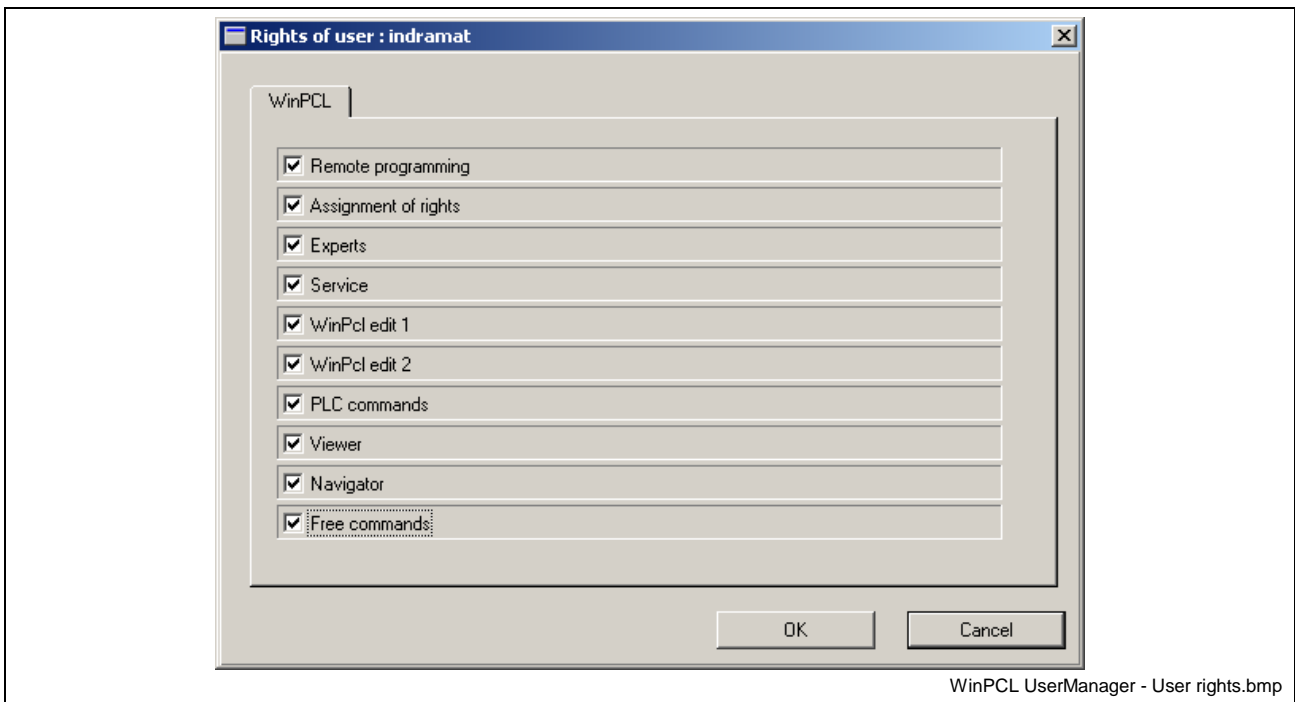


Fig. 3-3: Assign user rights

If the button "Group" in the user dialog is activated the membership of the user to a group can be determined. The rights of a group can be displayed with the selection of the group and button "F7 - Permissions" in the main menu of the user manager.

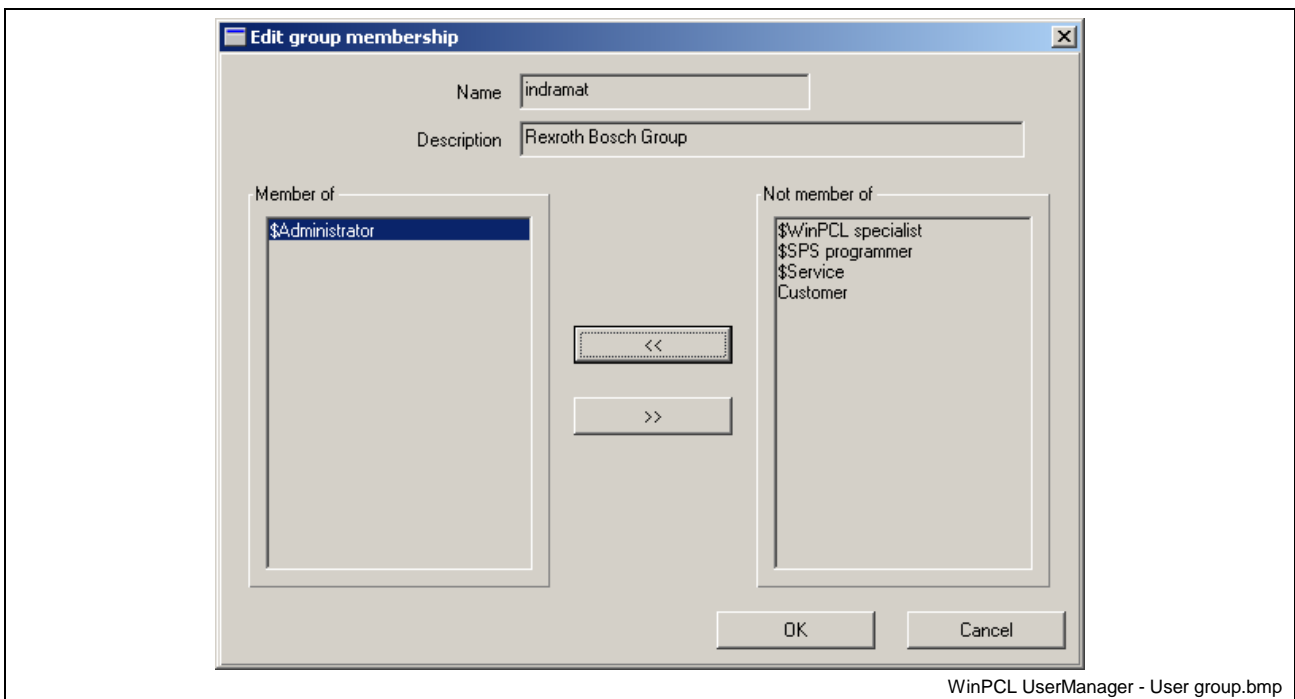


Fig. 3-4: Assign user to a group

A new "Group" can be created with button "F3" of the main menu. The first step is to enter general group data (as shown in figure "Fig. 3-5: Assign new group"). It is also possible to pass the rights of the new group to an user .

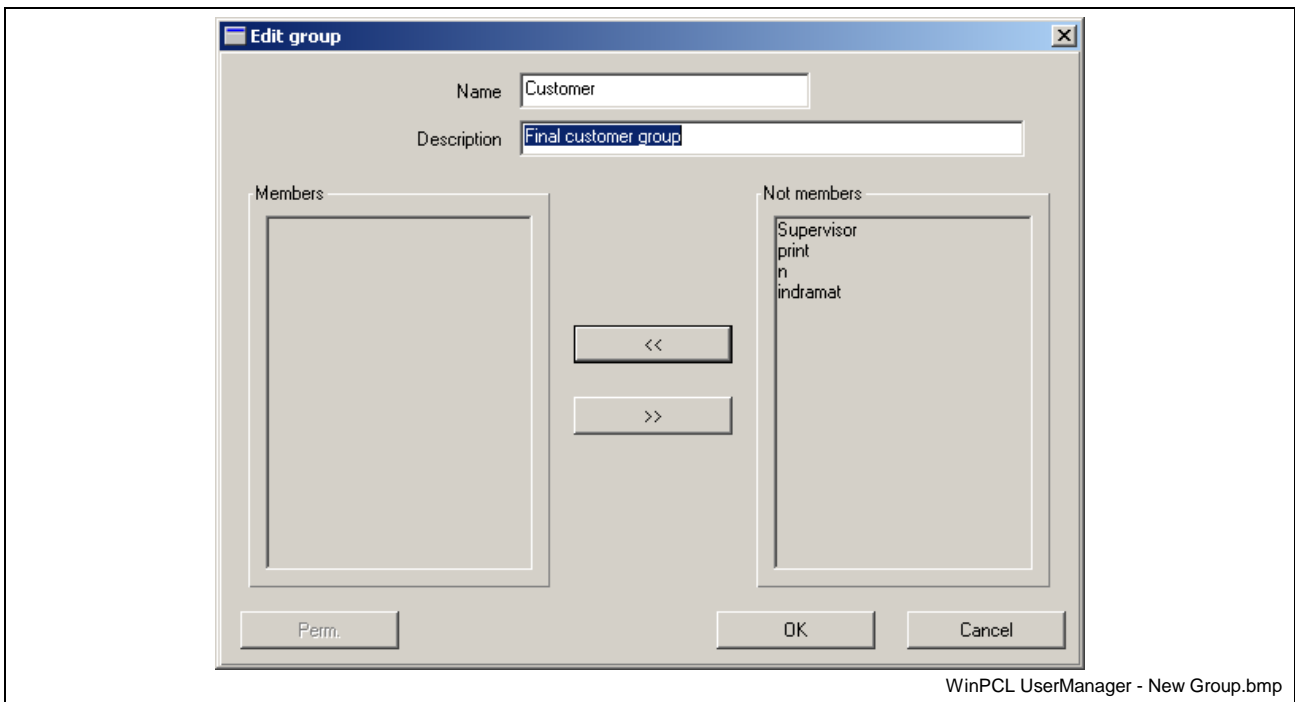


Fig. 3-5: Assign new group

If the group is selected in the main menu, the rights for the group can be assigned with "Edit" (button F4) and activating "Permissions" in dialog "Edit group" or button "F7" ("Permissions") in the main menu.

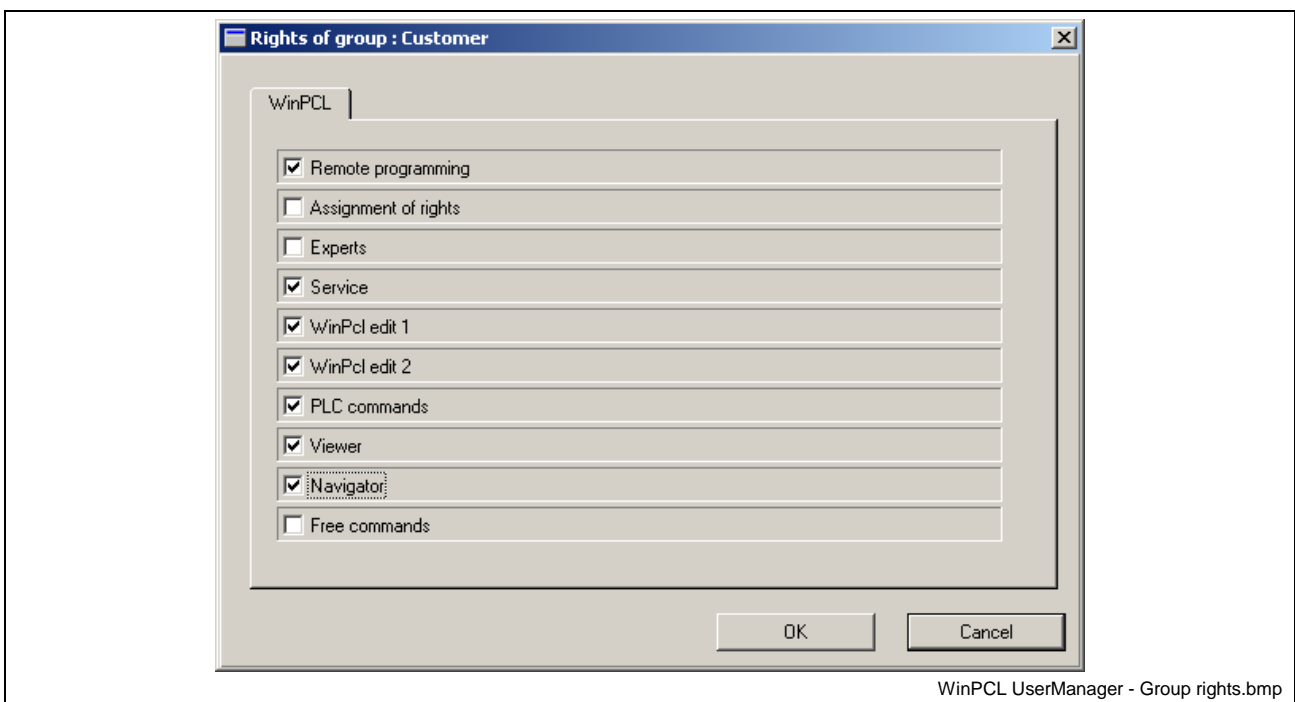


Fig. 3-6: Assign rights for the group

Depending on the installed application the number of rights to assign is different. The rights are assigned to the application, that means if several applications were installed each application has its own property side with the respective rights.

## 4 System configuration - SYNAX200

### 4.1 General information

The configuration of a control system is divided into five steps.

The first step is to select the type of control. This section describes the system "ISP200" and "SYNAX200" that can be selected. The attached designation "-R" or "-P" ("-R" → Reco; "-P" → PC) specifies the type of the control device. At the moment the system "SYNAX200" is only offered with the extension "-R".

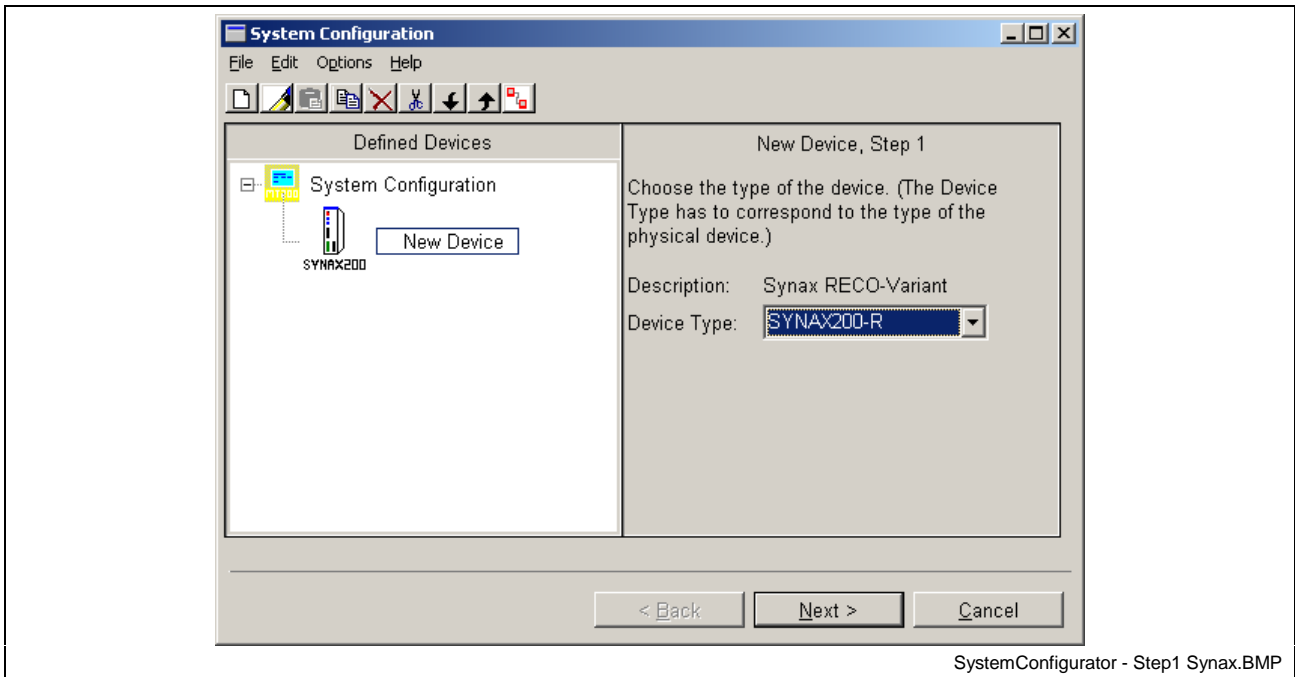


Fig. 4-1: Selection of the "device type"

The second step is to select the device address. The device addresses '00' to '63' (a maximum of 64 devices) can be assigned in the system configurator. The assignment of the addresses depends on the used interface. The description how to assign the addresses can be found in section 4.2 "Device type SYNAX200-R" and 4.3 "Device type ISP200-R-G2".

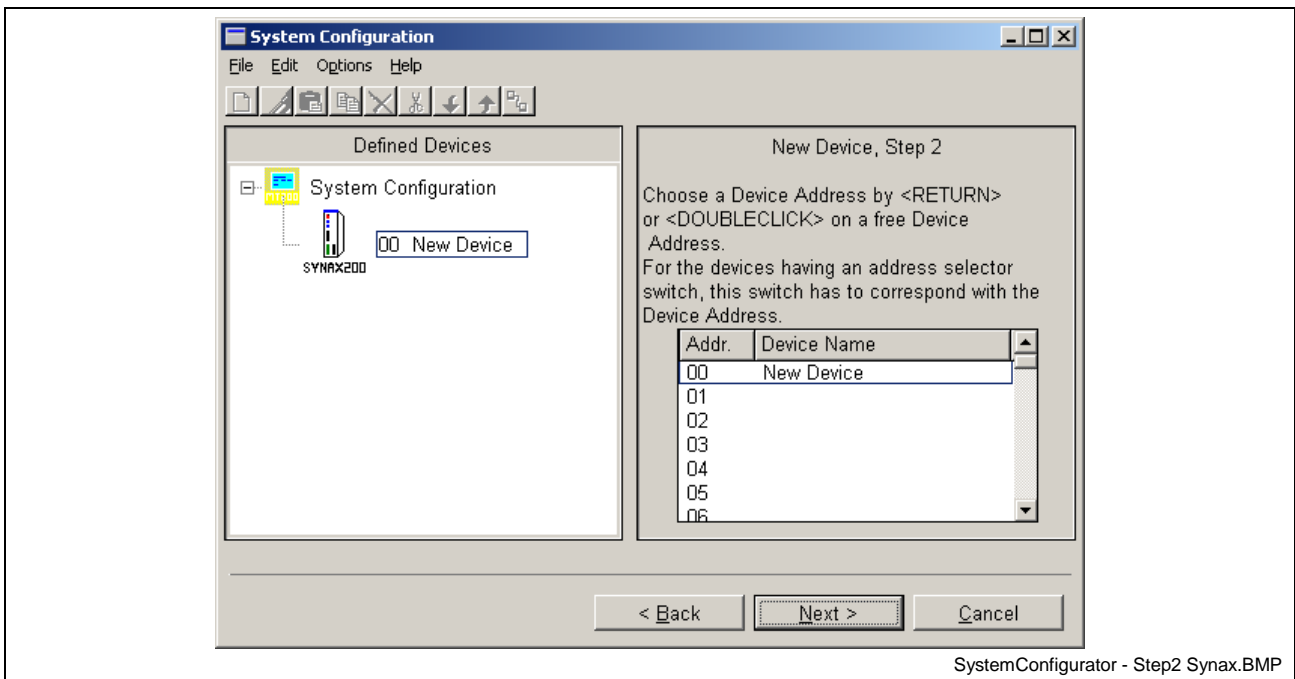


Fig. 4-2: Selection of the "device address"

The assignment of a device name and the device state is determined in step 3.

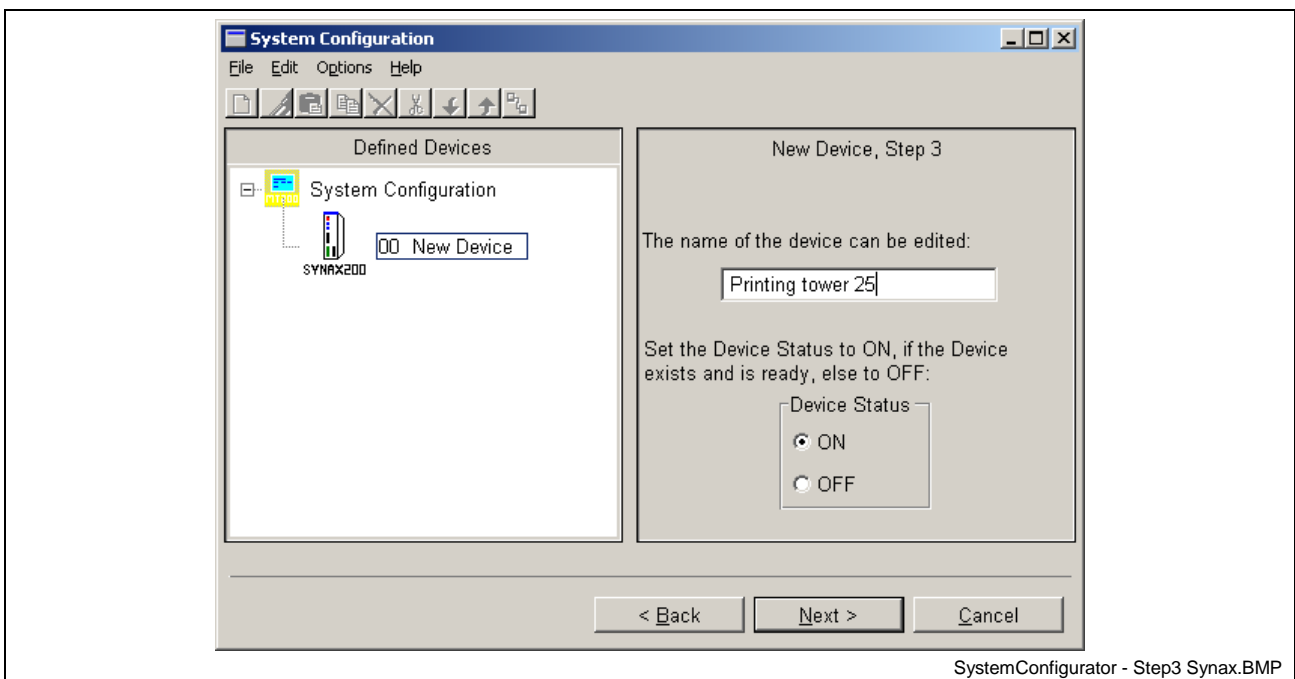


Fig. 4-3: Assignment of device name and device state

Afterwards (step 4) the selection of the component type is done. Because the "SYNAX200-R" and the "ISP200-R" system only have one version of component type, there's no selection necessary.

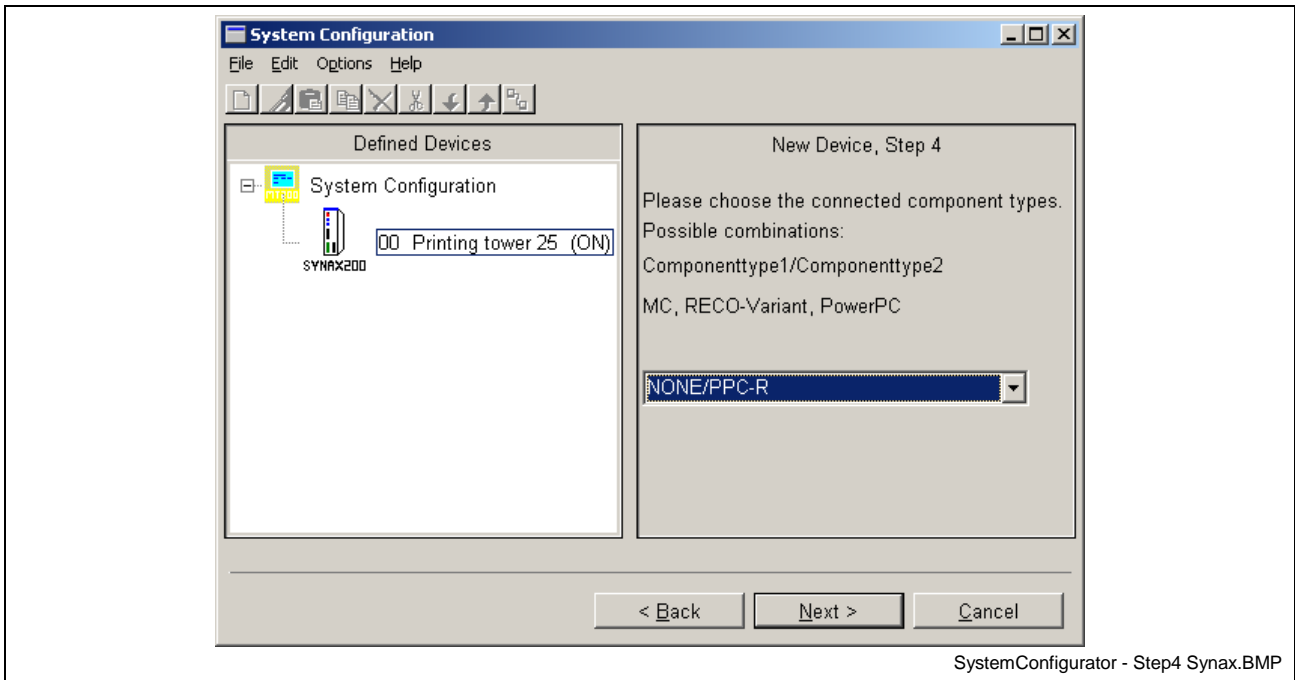


Fig. 4-4: Selection of "component type"

Before terminating, the configuration of the communication address is selected and set in step 5. There are dependencies on the control system and the selected interface (channel). The possible configurations are described in section 4.2 "Device type SYNAX200-R" and 4.3 "Device type ISP200-R-G2".

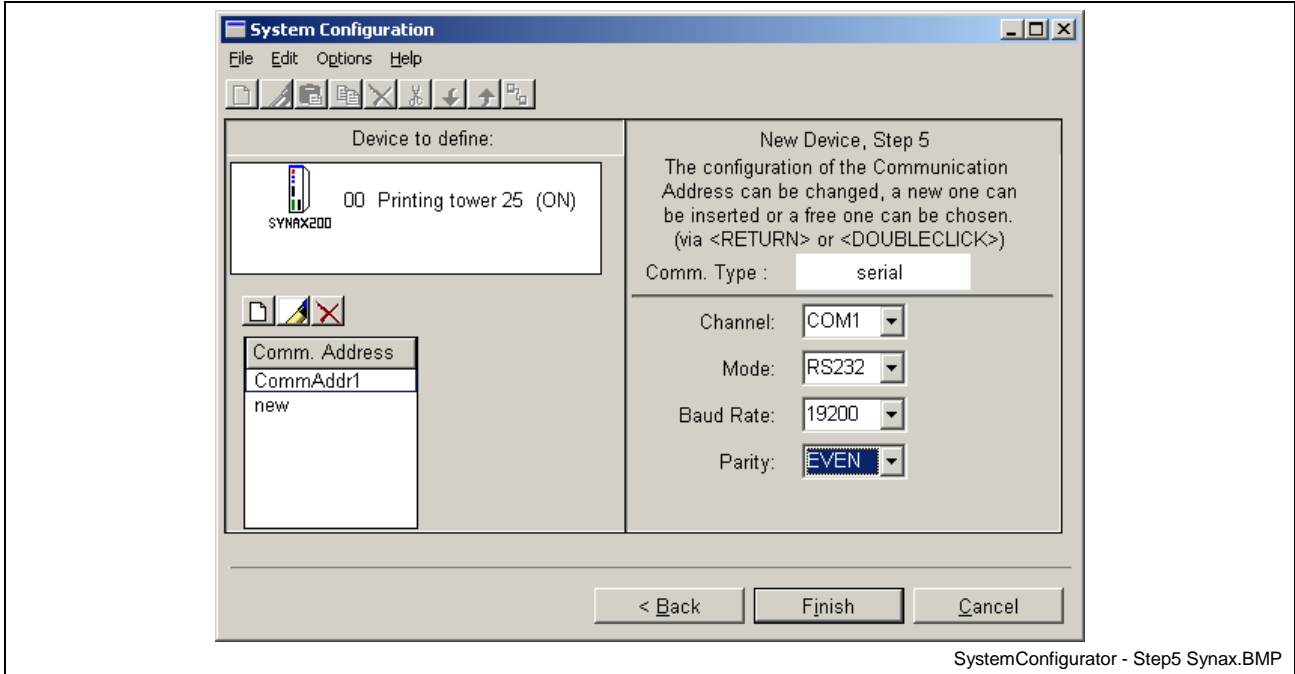


Fig. 4-5: Determine the physical communication

The configuration of devices and the handling of the system configurator is described in detail in the application description "System configurator V21" (DOK-CONTRL-SYS\*SER\*V21-AW01-EN-P).

---

**Note:** If the PPC is addressed with the same interface than the ISP or the PPC is entered into the system configurator, then it is not possible to access to control data of the PPC with the help of SynTop and the function interface (WinPCL or WinHMI).

---

## 4.2 Device type SYNAX200-R

Device type "SYNAX200-R" can be addressed with different communication channels (RS232/RS485/RS422, also with Ethernet in future). Because of many possibilities for the configuration settings the next pages describe the settings to make and the restrictions that exist depends on the properties of device type and system configurator.

Loading base parameters, the values listed in the table are set for the PPC parameters regarding the interface. The configuration at delivery of the PPC is the same as loading base parameters.

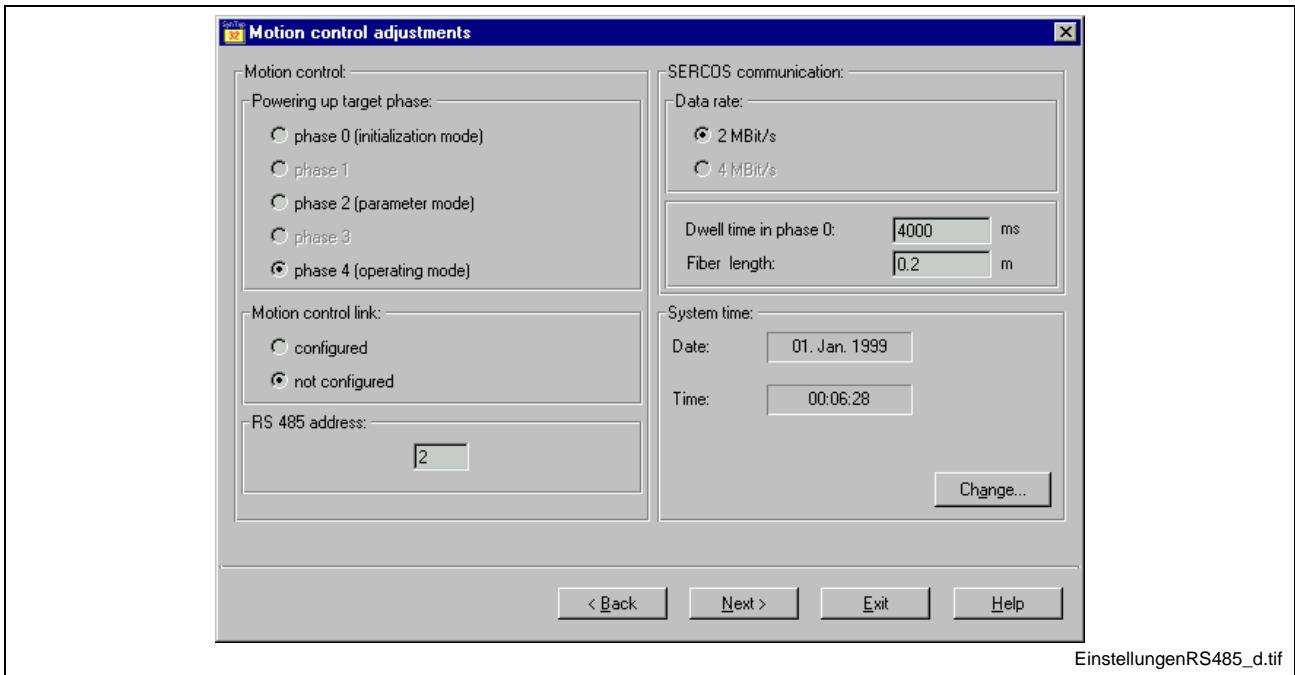
Setting	Value	PPC parameter
Device address	127	SynTop – PPC-address for RS485 bus (C-0-0142)
Interface	X10	Serial service interface - control word (C-0-0104)
Mode	RS232	Serial service interface - control word (C-0-0104)
Baudrate	19200	Serial service interface - control word (C-0-0104)

Fig. 4-6: PPC Basic settings

The settings listed in the table can be changed with the 'S1' button on the front side of the device for communication. The procedure about the configuration with the "S1" button is described in the functional description "SYNAX200 Decentralized System for the Synchronization of Machine Axes" (DOK-SYNAX\*-SY\*-08V\*1/2-FK01-EN-P).

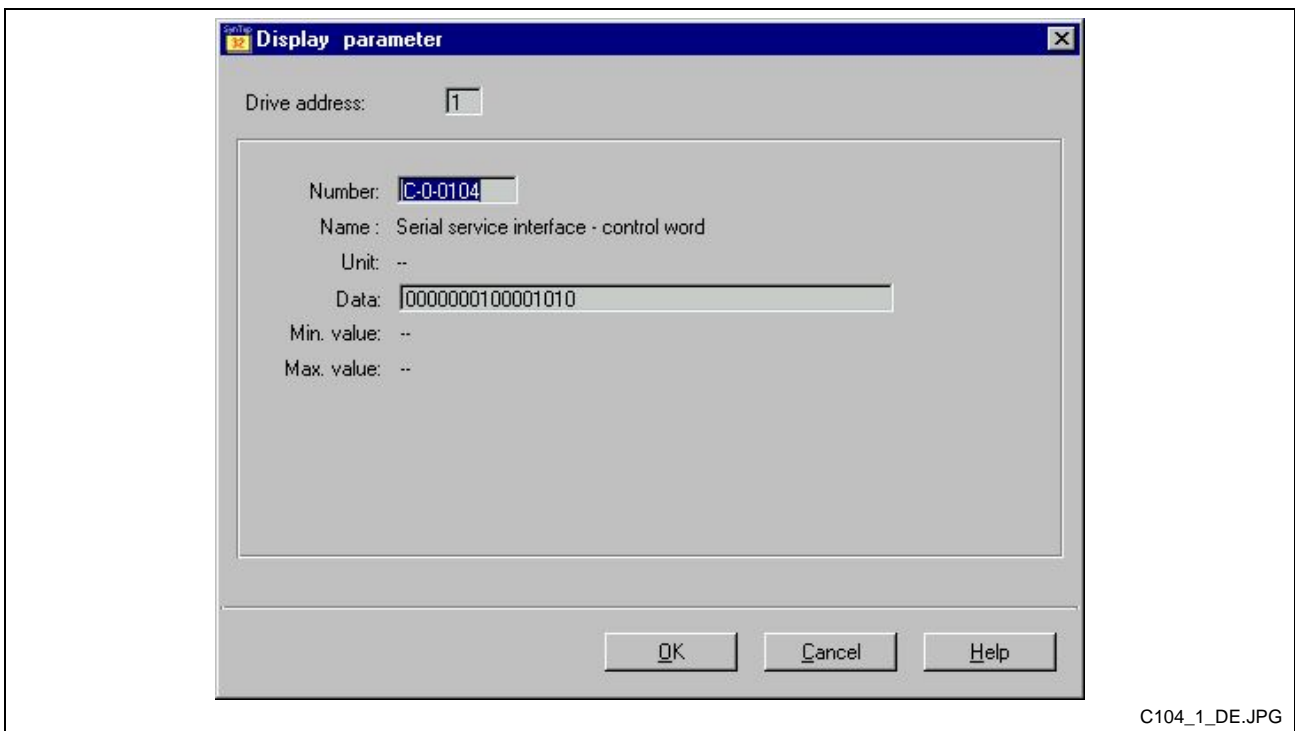
The description of the PPC parameters can be found in the parameter description "SYNAX200 Decentralized System for the Synchronization of Machine Axes" (DOK-SYNAX\*-SY\*-08VRS\*\*-PA01-EN-P).

The configuration for the device address and the serial service interface can be set in the dialogs of SynTop. A description of the SynTop dialogs and the handling can be found in the functional description "SYNAX200 Decentralized System for the Synchronization of Machine Axes" (DOK-SYNAX\*-SY\*-08V\*1/2-FK01-EN-P).



EinstellungenRS485\_d.tif

Fig. 4-7: Parameter "SynTop – PPC address for RS485 bus" (C-0-0142)



C104\_1\_DE.JPG

Fig. 4-8: Parameter "serial service interface - control word" (C-0-0104)

**Note:** If the PPC is addressed with the device address "00", then communication is always possible with interface mode "RS232", "RS485" or "RS422".

## RS232 interface

### Settings in the system configurator

<b>Device type:</b>	"SYNAX200-R" (PPC Reco)
<b>Device address:</b>	"00" to "63" The device addresses "00" to "63" for the PPC can be set via RS232. The configuration permits the allocation of a device address once only.
<b>Device name:</b>	The device name is freely selectable. But it should be selected according to the machine data.
<b>Device state:</b>	"ON" Starting the application the initialization of the control device is executed and the communication is started. If no control device is connected the state must be set to "OFF".
<b>Component types:</b>	"NONE/PPC-R" The control system "SYNAX200-R" only contains the component 'PPC-R' (PPC Reco). "NONE" means that no PLC is addressed via PPC, that means communication to the PLC is not „tunneled" via PPC.
<b>Communication address:</b>	An existing communication address can be selected, unless it is used by other control devices. In normal case a new communication address must be generated.
<b>Interface (channel):</b>	Selection of the PC interface for "RS232" the 'SYNAX200-R' is connected to via serial cable.
<b>Mode:</b>	"RS232"
<b>Baudrate:</b>	"19200" This field does not allow a selection.
<b>Parity:</b>	"EVEN" This field does not allow a selection.

### Settings on the PPC

<b>Device address:</b>	"00" to "63" The PPC can be addressed with device addresses "00" to "63" via RS232. The adjusted device address must agree with the address selected in the system configurator.
<b>Interface (channel):</b>	It is possible to select between connector 'X10' or 'X16' on the front side of the PPC. The setting for parameter "serial service interface - control word" (C-0-0104) is displayed in table "Fig. 4-9: Configuration of the 'PPC-R' interface – parameter "serial service interface - control word" (C-0-0104)" in binary format.

**Mode:** "RS232"

**Baudrate:** "9600, **19200**"

Because only a baudrate of "19200" is permitted in the system configurator, the PPC must be set to this value.

**Parity:** Is set to "EVEN" parity because of the firmware.

	Interface 'X10'	Interface 'X16'
<b>Bit combination</b>	[ 0000 0001 0000 1010 ]	[ 0000 0010 0000 1010 ]

Fig. 4-9: Configuration of the 'PPC-R' interface – parameter "serial service interface - control word" (C-0-0104)

- Ready-made cable:**
- IKB0005 (15 pin pins / 9 pin bushing)
  - IKB0012 (15 pin pins / 9 pin bushing)

## RS485 interface

### Settings in the system configurator

**Device type:** "SYNAX200-R" (PPC Reco)

**Device address:** "00" to "63"

The function interface can address RS485 participants with addresses "00" to "63". If this devices also communicate with SynTop then the address range (SynTop "01" to "255"; FI "00" to "63") is limited to "**01**" to "**63**".

The configuration permits the allocation of a device address once only.

**Device name:** The device name is freely selectable. But it should be selected according to the machine data.

**Device state:** "ON"

Starting the application the initialization of the control device is executed and the communication is started. If no control device is connected the state must be set to "OFF".

**Component types:** "NONE/PPC-R"

The control system "SYNAX200-R" only contains the component 'PPC-R' (PPC Reco). "NONE" means that no PLC is addressed via PPC, that means communication to the PLC is not „tunneled" via PPC.

**Communication address:** An existing communication address can be selected if a "RS485" configuration is available. Otherwise a new communication address must be generated.

**Interface (channel):** Selection of the PC interface for "RS485" the 'SYNAX200-R' is connected to via serial bus cable.

**Mode:** "RS485"

- Baudrate:** "19200"  
This field does not allow a selection.
- Parity:** "EVEN"  
This field does not allow a selection.
- Polarity:** "High, Low"  
'High' must be selected for polarity because there is no setting possibility on the PPC.

**Settings on the PPC**

- Device address:** The device address is entered in SYNAX parameter "SynTop – PPC address for RS485 bus" (C-0-0142) and permits values from "00" to "255". As described in section "Settings in the system configurator" on page "4-7", the address range is limited to **"01" to "63"**.  
The adjusted device address must agree with the address selected in the system configurator.
- Interface (channel):** It is possible to select between connector 'X10' or 'X16' on the front side of the PPC. The setting for parameter "serial service interface - control word" (C-0-0104) is displayed in table "Fig. 4-9: Configuration of the 'PPC-R' interface – parameter "serial service interface - control word" (C-0-0104)" in binary format.
- Mode:** "RS485"
- Baudrate:** "9600, **19200**"  
Because only a baudrate of "19200" is permitted in the system configurator, the PPC must be set to this value.
- Parity:** Is set to "EVEN" parity because of the firmware.
- Polarity:** Is set to "High" because of the firmware.

	Interface 'X10'	Interface 'X16'
<b>Bit combination</b>	[ 0000 0001 1000 1010 ]	[ 0000 0010 1000 1010 ]

Fig. 4-10: Configuration of the 'PPC-R' interface – parameter "serial service interface - control word" (C-0-0104)

- Ready-made cable:**
  - IKB0017 (15 pin pins / 15 pin pins)
  - IKB0019 (15 pin pins / conductor sleeve)

---

**Note:** The parity for the serial communication is set to "EVEN" on the PPC. Because there is no possibility of a configuration all participants in the RS485 bus must be set to parity "EVEN".

---

## RS422 interface

### Settings in the system configurator

<b>Device type:</b>	"SYNAX200-R" (PPC Reco)
<b>Device address:</b>	"00" to "63" The device addresses "00" to "63" for the PPC can be set via RS422. The configuration permits the allocation of a device address once only.
<b>Device name:</b>	The device name is freely selectable. But it should be selected according to the machine data.
<b>Device state:</b>	"ON" Starting the application the initialization of the control device is executed and the communication is started. If no control device is connected the state must be set to "OFF".
<b>Component types:</b>	"NONE/PPC-R" The control system "SYNAX200-R" only contains the component 'PPC-R' (PPC Reco). "NONE" means that no PLC is addressed via PPC, that means communication to the PLC is not „tunneled" via PPC.
<b>Communication address:</b>	An existing communication address can be selected, unless it is used by other control devices. In normal case a new communication address must be generated.
<b>Interface (channel):</b>	Selection of the PC interface for "RS422" the 'SYNAX200-R' is connected to via serial cable.
<b>Mode:</b>	"RS422"
<b>Baudrate:</b>	"19200" This field does not allow a selection.
<b>Parity:</b>	"EVEN" This field does not allow a selection.

### Settings on the PPC

<b>Device address:</b>	"00" to "63" The PPC can be addressed with device addresses "00" to "63" via RS422. The adjusted device address must agree with the address selected in the system configurator.
<b>Interface (channel):</b>	It is possible to select between connector 'X10' or 'X16' on the front side of the PPC. The setting for parameter "serial service interface - control word" (C-0-0104) is displayed in table "Fig. 4-9: Configuration of the 'PPC-R' interface – parameter "serial service interface - control word" (C-0-0104)" in binary format.

**Mode:** "RS422"

**Baudrate:** "9600, **19200**"

Because only a baudrate of "19200" is permitted in the system configurator, the PPC must be set to this value.

**Parity:** Is set to "EVEN" parity because of the firmware.

	Interface 'X10'	interface 'X16'
<b>Bit combination</b>	[ 0000 0001 0100 1010 ]	[ 0000 0010 0100 1010 ]

Fig. 4-11: Configuration of the 'PPC-R' interface – parameter "serial service interface - control word" (C-0-0104)

- Ready-made cable:**
- IKB0015 (15 pin pins / 15 pin pins)
  - IKB0016 (15 pin pins / 9 pin bushing)

### 4.3 Device type ISP200-R-G2

Device type "ISP200-R-G2" can be addressed with different communication channels (RS232/RS485/RS422). Because of many possibilities for the configuration settings the next pages describe the settings to make and the restrictions that exist depending on the properties of device type and system configurator.

At delivery of the "ISP200-R-G2" the values listed in the table are set. All switches are in position 'OFF'.

Setting	Value	Configuration
Device address	0	rotary switch (front side of the device)
Mode	RS232	DIP switch: 5 – 6 (upside of device)
Baudrate	19200	DIP switch: 1 – 3 (upside of device)
Parity	NONE	DIP switch: 4 (upside of device)

Fig. 4-12: ISP basic settings

The description of the ISP200-R-G2 can be found in the project planning manual "RECO-SPS ISP200-R" (DOK-CONTRL-MTS\*R0\*.2\*\*-PR01-EN-P).

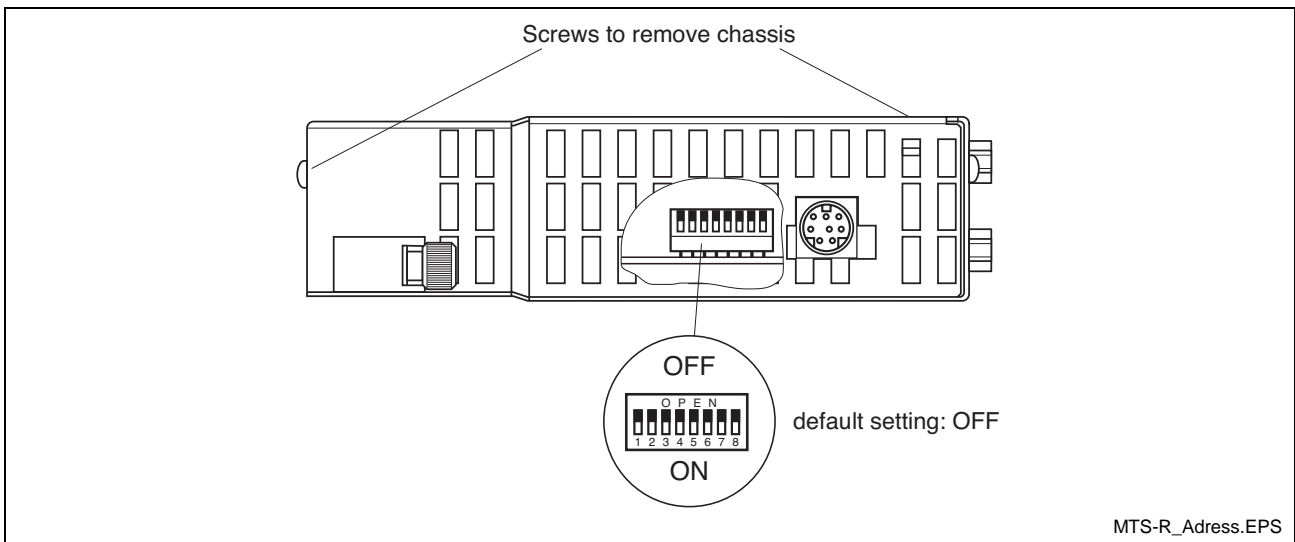


Fig. 4-13:DIP switch for the parameterization of the PROG interface

## RS232 interface

### Settings in the system configurator

- Device type:** "ISP200-R-G2" (ISP Reco)
- Device address:** "00" to "63"  
 The ISP can be addressed with the device addresses "00" to "63" via RS232.  
 The configuration permits the allocation of a device address once only.
- Device name:** The device name is freely selectable. But it should be selected according to the machine data.
- Device state:** "ON"  
 Starting the application the initialization of the control device is executed and the communication is started. If no control device is connected the state must be set to "OFF".
- Component types:** "MTS-R-M1/NONE"  
 The control system "ISP200-R-G2" only contains the component 'MTS-R-M1' (ISP Reco). "NONE" means that no requests are transmitted via PLC to a second control, e.g., PPC.
- Communication address:** An existing communication address can be selected, unless it is used by other control devices. In normal case a new communication address must be generated.
- Interface (channel):** Selection of the PC interface for "RS232" the 'ISP200-R-G2' is connected to via serial cable.
- Mode:** "RS232"
- Baudrate:** "9600, 19200, 38400, 57600, 115200"
- Parity:** "NONE/EVEN"

### Settings on the ISP

- Device address:** "00" to "63"  
 The ISP can be addressed with device addresses "00" to "63" via RS232.  
 The adjusted device address must agree with the address selected in the system configurator.
- Interface (channel):** The communication to the ISP is done with interface 'X10' on the front side of the device.
- Mode:** "RS232"
- Baudrate:** "19200"
- Parity:** "NONE/EVEN"
- Ready-made cable:**
- IKB0005 (15 pin pins / 9 pin bushing)
  - IKB0012 (15 pin pins / 9 pin bushing)

## RS485 interface

### Settings in the system configurator

- Device type:** "ISP200-R-G2" (ISP Reco)
- Device address:** "00" to "63"  
 The function interface can address RS485 participants with addresses "00" to "63".  
 The configuration permits the allocation of a device address once only.
- Device name:** The device name is freely selectable. But it should be selected according to the machine data.
- Device state:** "ON"  
 Starting the application the initialization of the control device is executed and the communication is started. If no control device is connected the state must be set to "OFF".
- Component types:** "MTS-R-M1/NONE"  
 The control system "ISP200-R-G2" only contains the component 'MTS-R-M1' (ISP Reco). "NONE" means that no requests are transmitted via PLC to a second control, e.g., PPC.
- Communication address:** An existing communication address can be selected if a "RS485" configuration is available. Otherwise a new communication address must be generated.
- Interface (channel):** Selection of the PC interface for "RS485" the 'ISP200-R-G2' is connected to via serial cable.

**Mode:** "RS485"

**Baudrate:** "19200"

**Parity:** "NONE/EVEN"

### Settings on the ISP

**Device address:** The ISP can be addressed with device addresses "00" to "63" via RS485. The adjusted device address must agree with the address selected in the system configurator.

**Interface (channel):** The communication to the ISP is done with interface 'X10' on the front side of the device.

**Mode:** "RS485"

**Baudrate:** "19200"

**Parity:** "NONE/EVEN"

- Ready-made cable:**
- IKB0017 (15 pin pins / 15 pin pins)
  - IKB0019 (15 pin pins / conductor sleeve)

---

**Note:** If the "ISP200-R-G2" is operated in the same RS485 bus as the "SYNAX200-R", then the parity of the ISP must be set to "EVEN". It is not possible to change the parity on the "SYNAX200-R".

---

## RS422 interface

### Settings in the system configurator

**Device type:** "ISP200-R-G2" (ISP Reco)

**Device address:** "00" to "63"

The ISP can be addressed with the device addresses "00" to "63" via RS422.

The configuration permits the allocation of a device address once only.

**Device name:** The device name is freely selectable. But it should be selected according to the machine data.

**Device state:** "ON"

Starting the application the initialization of the control device is executed and the communication is started. If no control device is connected the state must be set to "OFF".

**Component types:** "MTS-R-M1/NONE"

The control system "ISP200-R-G2" only contains the component 'MTS-R-M1' (ISP Reco). "NONE" means that no requests are transmitted via PLC to a second control, e.g., PPC.

**Communication address:** An existing communication address can be selected, unless it is used by other control devices. In normal case a new communication address must be generated.

**Interface (channel):** Selection of the PC interface for "RS422" the 'ISP200-R-G2' is connected to via serial cable.

**Mode:** "RS422"

**Baudrate:** "19200"

**Parity:** "NONE/EVEN"

### Settings on the ISP

**Device address:** The ISP can be addresses with the device addresses "00" to "63" via RS422.

The adjusted device address must agree with the address selected in the system configurator.

**Interface (channel):** The communication to the ISP is done with interface 'X10' on the front side of the device.

**Mode:** "RS422"

**Baudrate:** "19200"

**Parity:** "NONE/EVEN"

**Ready-made cable:**

- IKB0015 (15 pin pins / 15 pin pins)
- IKB0016 (15 pin pins / 9 pin bushing)

## 5 Firmware

### 5.1 Loading the firmware

Loading the firmware can be executed with the application "FWA-Download". If the firmware is transmitted to the control it must be paid attention that the firmware version agrees with the WinPCL version. At the moment WinPCL in version '3' is delivered with firmware version '3'. Notice the "information about installation" displayed at installation.

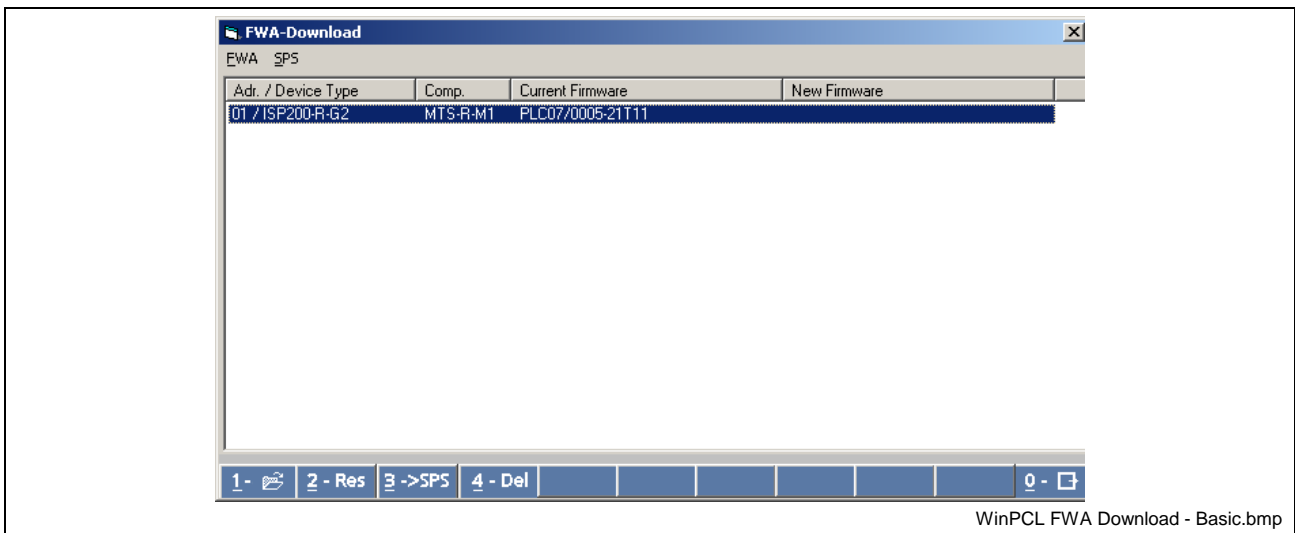


Fig. 5-1: Firmware download

#### Menu

All actions described in the following refer to the control device selected with the cursor in the list.

**Select FWA:** With buttons "Alt+1" or menu "FWA → Select" the dialog is opened to select the firmware file. The selectable firmware files are displayed in the dialog corresponding to the device configuration.

**Clear selection FWA:** If the wrong version of firmware was selected the selection can be cancelled with the buttons "Alt-2" or in menu "FWA → Reset Selection".

**Download FWA:** The selected firmware can be loaded to the control with buttons "Alt-3" or in menu "PLC → Start Download".

**Clear PLC program memory:** With buttons "Alt-4" or in menu "PLC → Delete RAM" the program memory of the control can be cleared. It must be ensured that a PLC program is available to transmit to the control.

**Terminate application:** The application can be terminated with buttons "Alt-0" or with menu "FWA → End".

---

**Note:** The actions described in this section can affect the user program memory. It must be ensured that a stored user program is available.

---

With loading the PLC firmware the preparations are terminated. Programming the PLC program can be started.

## 6 Diagnoses

### 6.1 MTS-R

#### Operating state display

The 7-segment display H1 permits a diagnosis of the MTS-R to be made. The following 1-digit error codes are used for indicating the diagnosis result.

Code	Meaning
-	Power-fail activated (control reset must be executed)
b	Operational (SPS is running)
0.	Power-on state (reset test)
F.	Firmware in Flash EPROM invalid
J.	Boot lock for firmware active
S	Overflow systemstack
P	Local bus is not connected, 24V at MTC-R is missing

Fig. 6-1: Operating states of the MTS-R

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**Note:** Please notify Service **immediately** if any other 1-digit code with a period is displayed.

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#### Error indication

A 7-segment display that flashes in succession is used for displaying **3-digit** error states. The shown error codes correspond to the system error messages of the user interface (MUI/GUI).

Code	Meaning
007	Software version error
008	Self-test failed
052	Invalid PLC program
055	Maximum PLC cycle time exceeded
071	PLC battery voltage is low
081	Time-out timed task
083	Interbus memory overflow
089	Interbus error (is not generated at the moment)
090	Profibus-DP error (is not generated at the moment)
091	Initialization error SYNAX/Visual Motion
092	Initialization error RECO bus
093	BT bus time-out
096	invalid V code

Fig. 6-2: Error codes MTS-R



## 7 Service & Support

### 7.1 Helpdesk

Unser Kundendienst-Helpdesk im Hauptwerk Lohr am Main steht Ihnen mit Rat und Tat zur Seite. Sie erreichen uns

- telefonisch: **+49 (0) 9352 40 50 60**  
über Service Call Entry Center Mo-Fr 07:00-18:00
- per Fax: **+49 (0) 9352 40 49 41**
- per e-Mail: **service@indramat.de**

Our service helpdesk at our headquarters in Lohr am Main, Germany can assist you in all kinds of inquiries. Contact us

- by phone: **+49 (0) 9352 40 50 60**  
via Service Call Entry Center Mo-Fr 7:00 am - 6:00 pm
- by fax: **+49 (0) 9352 40 49 41**
- by e-mail: **service@indramat.de**

### 7.2 Service-Hotline

Außerhalb der Helpdesk-Zeiten ist der Service direkt ansprechbar unter

oder **+49 (0) 171 333 88 26**  
**+49 (0) 172 660 04 06**

After helpdesk hours, contact our service department directly at

or **+49 (0) 171 333 88 26**  
**+49 (0) 172 660 04 06**

### 7.3 Internet

Unter [www.indramat.de](http://www.indramat.de) finden Sie ergänzende Hinweise zu Service, Reparatur und Training sowie die **aktuellen** Adressen \*) unserer auf den folgenden Seiten aufgeführten Vertriebs- und Servicebüros.

- Verkaufsniederlassungen
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Außerhalb Deutschlands nehmen Sie bitte zuerst Kontakt mit unserem für Sie nächstgelegenen Ansprechpartner auf.

\*) <http://www.indramat.de/de/kontakt/adressen>  
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- sales agencies
- offices providing service

Please contact our sales / service office in your area first.

\*) <http://www.indramat.de/en/kontakt/adressen>  
Data in the present documentation may have become obsolete since printing.

### 7.4 Vor der Kontaktaufnahme... - Before contacting us...

Wir können Ihnen schnell und effizient helfen wenn Sie folgende Informationen bereithalten:

1. detaillierte Beschreibung der Störung und der Umstände.
2. Angaben auf dem Typenschild der betreffenden Produkte, insbesondere Typenschlüssel und Seriennummern.
3. Tel./Faxnummern und e-Mail-Adresse, unter denen Sie für Rückfragen zu erreichen sind.

For quick and efficient help, please have the following information ready:

1. Detailed description of the failure and circumstances.
2. Information on the type plate of the affected products, especially type codes and serial numbers.
3. Your phone/fax numbers and e-mail address, so we can contact you in case of questions.

## 7.5 Kundenbetreuungsstellen - Sales & Service Facilities

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