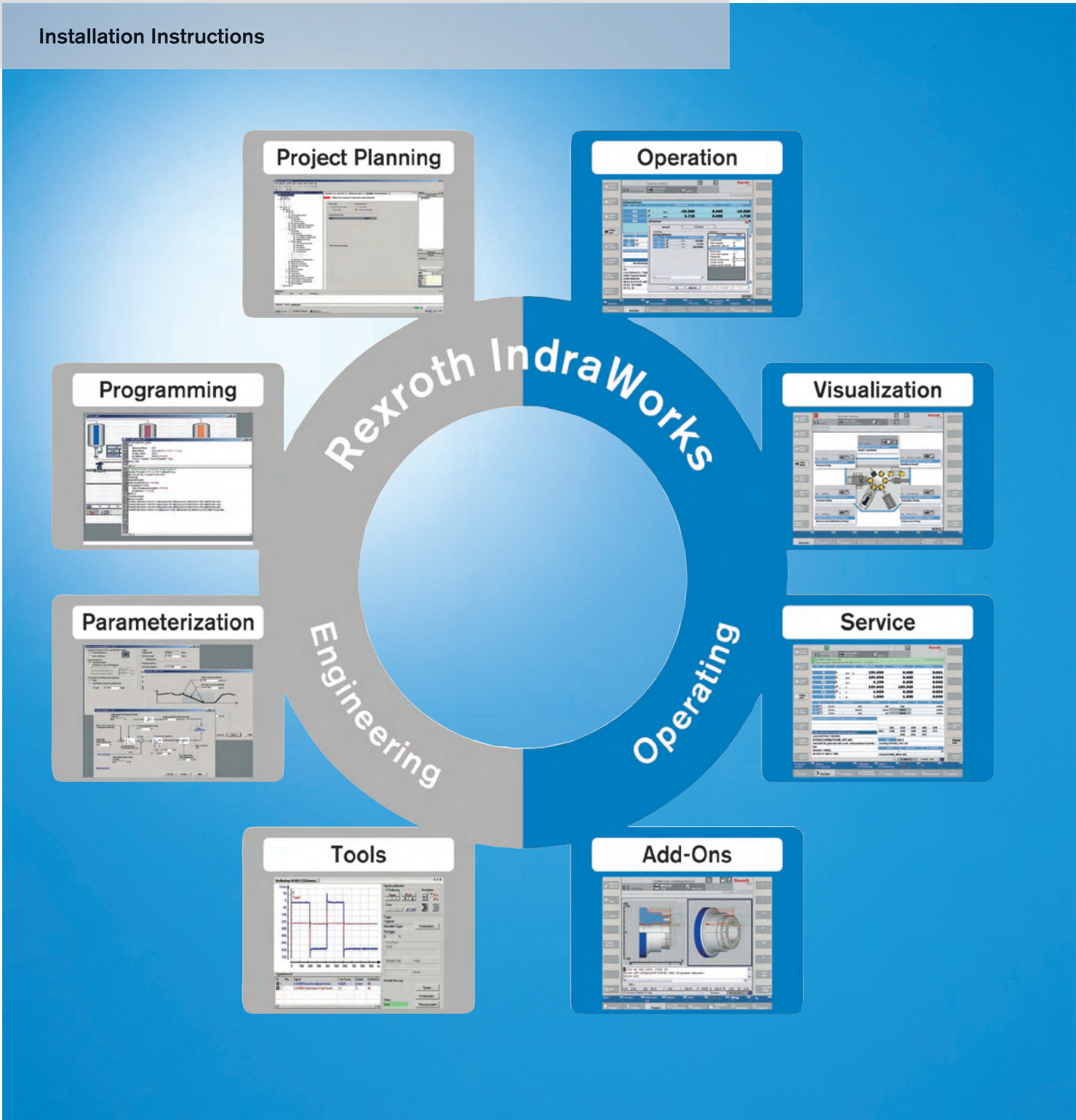
Electric Drives and Controls | Hydraulics | Linear Motion and Assembly Technologies | Pneumatics | Service

Rexroth Bosch Group

Rexroth IndraWorks 09VRS Software Installation

R911324379
Edition 02

Installation Instructions



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Purpose of Documentation This documentation describes the installation and the update of the "Rexroth IndraWorks MLC", the "Rexroth IndraMotion MTX" as well as the network settings.

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1 General Information about the Installation

1.1 The Installation Program and this Documentation

What is Installed?

The installation program installs the user interface of the "Rexroth IndraMotion MTX", called "IndraMotion MTX" and the "Rexroth IndraWorks MLC", called "IndraWorks MLC".

Who Installs the Program?

Installing the user interface requires experience in working with PCs and with the operating system. Administrator privileges are required for installation.

☞ The Installation may only be executed by an experienced user with knowledge of operating systems and with administrator privileges.

Installation Program

The installation program decompresses and installs the user interface and the associated files from the DVD onto your hard disk.

Updates and deinstallation of the software can also be executed using this installation program.

Documentation

This documentation informs you about how to install and set up the user interface on your hard disk, how to execute an update and how to remove the user interface.

☞ Read these installation instructions and, if necessary, additional documents **before** you install the software.

1.2 Documentation References

Documentation	Type	Parts number
Rexroth IndraControl VSP 16.1/40.1	DOK-SUPPL*-VSP*16/40**-PRxx-EN-P	R911308264
Rexroth IndraControl VSP 16.3/40.3	DOK-SUPPL*-VSP*XX.3***-PRxx-EN-P	R911323882
Rexroth IndraControl VDP 16.1/40.1/60.1	DOK-SUPPL*-VDP16/40/60-PRxx-EN-P	R911307654
Rexroth IndraControl VDP 16.3/40.3	DOK-SUPPL*-VDP*XX.3***-PRxx-EN-P	R911323862
Rexroth IndraControl VPP 16.1/40.1/60.1	DOK-SUPPL*-VPP*XX.1***-PRxx-EN-P	R911311820
Rexroth IndraControl VPP 16.3/40.3	DOK-SUPPL*-VPP*XX.3***-PRxx-EN-P	R911323511
Rexroth VSB 40.1	DOK-SUPPL*-VSB*40.1***-PRxx-EN-P	R911310079
Rexroth IndraControl L40	DOK-CONTRL-IC*L40*****-PRxx-EN-P	R911308429
Rexroth VSB 40.1	DOK-SUPPL*-VSB*40.1***-PRxx-EN-P	R911310079
Rexroth VSB 40.3	DOK-SUPPL*-VSB*40.3***-PRxx-EN-P	R911323880
Rexroth VPB 40.1	DOK-SUPPL*-VPB*40.1***-PRxx-EN-P	R911310079
Rexroth VSB 40.3	DOK-SUPPL*-VPB*40.3***-PRxx-EN-P	R911323876
Rexroth VAM 11.1/41.1	DOK-SUPPL*-VAM*11/41**-PRxx-EN-P	R911308619
Rexroth VAM 10.1/40.1	DOK-SUPPL*-VAM*10/40**-PRxx-EN-P	R911306781
Rexroth VAK 10.1/40.1	DOK-SUPPL*-VAK*40.1***-PRxx-EN-P	R911311650
Rexroth VAK 11/41	DOK-SUPPL*-VAK*11/41**-PRxx-EN-P	R911310336
Rexroth RECO Inline, PROFIBUS-DP	DOK-CONTRL-R-IL*PBSSYS-AWxx-EN-P	R911289597
RECO Inline, PROFIBUS DP Terminal and Module Supply	DOK-CONTRL-R-IL*PB*-BK-FKxx-EN-P	R911289587

General Information about the Installation

Documentation	Type	Parts number
RECO Inline, digital I/O terminals	DOK-CONTRL-R-IL*DIO***-FKxx-EN-P	R911289589
Rexroth Fieldline, PROFIBUS Devices	DOK-CONTRL-RF-FLS-PB**-PRxx-EN-P	R911298518

Fig.1-1: Documentation References

1.3 System Requirements: Control Hardware

1.3.1 System MLC

The MLC control supports - depending on the version - different hardware platforms using its own firmware.

Typical designations of the control hardware:

- L 40.2-SP-xx
- L 65.1-3P-xx
- VEPx.3 (operator terminal)

The hardware always supports the axis number, cycle time and performance for all applications.

The MLC uses the PC-based user interface "IndraWorks MLC" of the "IndraWorks Engineering Suite" that is to be installed separately.

1.3.2 System MTX

Short Description

As a scalable system, the "IndraMotion MTX" control system currently consists of three system variants:

- IndraMotion MTX compact, based on the IndraControl L40 control module
- IndraMotion MTX standard, based on the IndraControl P40 control module
- IndraMotion MTX performance, based on the IndraControl P60 control module

All the control modules provide both CNC and PLC functions. The highest configuration provides CNC performance allowing for the activation of up to 64 axes in 12 independent CNC processing channels. The standard equipment of the control modules includes interfaces allowing the activation of I/Os via PROFIBUS-DP, of intelligent drives via the SERCOS interface and of peripheral assemblies via Ethernet. A high-speed interface permits the module to be supplemented by additional field buses or interfaces.

The IndraControl L40 control module in terminal format has been designed for mounting rail installation in a control cabinet. The control modules IndraControl P40 and IndraControl P60 are executed as PCI slot modules and will be used in a free slot of an industrial PC.

☞ When installing the IndraControl P40 or the IndraControl P60, the corresponding component has to be already located in a PCI slot of an industrial PC.

Industrial PCs

General

You may install the plug-in cards IndraControl P40 and IndraControl P60 in a free PCI slot in Bosch Rexroth standard industrial PCs and high-end industrial PCs, as well as in third-party PCs.

Overview of Industrial PCs

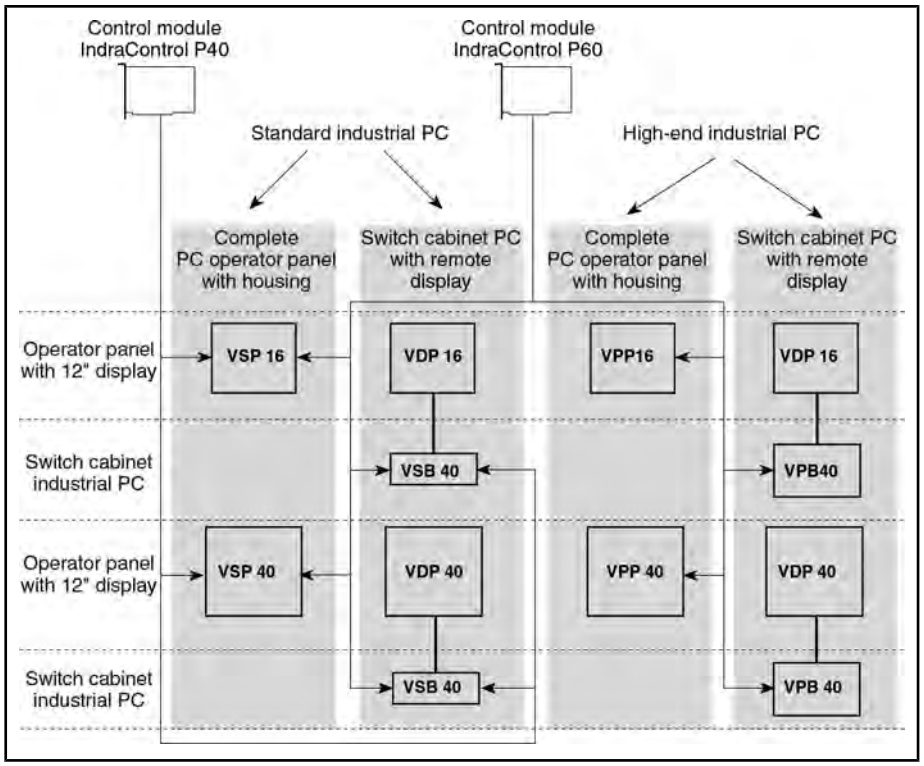


Fig. 1-2: Overview of Industrial PCs

1.3.3 Installing IndraWorks on an Engineering PC

Hardware Requirements on the "IndraMotion MTX" and the "IndraWorks MLC"

The following hardware requirements to use the "IndraMotion MTX" and the "IndraWorks MLC" on third-party PCs are to be fulfilled:

- IBM-compatible PC, Pentium III or later
- CPU clock frequency: 933 MHz
- RAM: 1 GB
- 5 GB free disk capacity (incl. temporary memory during installation)
- CD drive or DVD drive starting from 08VRS
- Graphics resolution
  - 800x600 pixels
  - Color depth: 16 bits

Hardware Requirements on the Rexroth IndraWorks Simulation

The hardware requirements of the "IndraMotion MTX" or "IndraWorks MLC" apply.

To improve performance, an OpenGL-capable graphics card can be used.

1.3.4 Software Requirements

Software Requirements for the "IndraWorks MLC"

The "IndraWorks MLC" user interface requires the following software requirements:

- Microsoft Windows XP Professional with Service Pack 2

- Microsoft Windows 2000 with ServicePack 4

Software Requirements on the "IndraMotion MTX"

Microsoft Windows XP Professional with Service Pack 2 is required to operate "IndraMotion MTX".

Software requirements on the "IndraWorks Simulation"

The following software requirements apply to the simulation in Rexroth IndraWorks:

- Microsoft Windows XP Professional with Service Pack 2
- Microsoft Windows 2000 with Service Pack 4 (not supported by all components)
- Microsoft Windows Server 2003 (not supported by all components)

1.4 Before Installing the User Interface

If you have ordered a completely configured operator terminal with control modules, the user interface and the related firmware are already installed upon delivery.

For user access, the following values are preset, depending on the operating system.

Windows XP access:

- User name: Rexroth
- Password: Rexroth

User interface:

- User name: Admin
- Password: Admin

For the preinstalled operator terminal you need the following chapters only for updating the software. The user interface has to be installed according to the following description if you use the operator terminal or a third-party PC with external control hardware or if you want to use the IndraControl P40/P60 control module on a third-party PC.

1.5 Using Virus Scanners

During the Rexroth IndraMotion MTX system installation, Java scripts are used for special tasks (embedded setups such as .NET Framework ServicePatch, IndraLogic, WinStudio). These are executed by MsiExex.exe. Some virus scanners, such as Norton Antivirus, regard this as possible virus activity and issue a corresponding message.

If such a message appears, it can be ignored.

2 Important Instructions on Use

2.1 Appropriate Use

2.1.1 Introduction

Bosch Rexroth products represent state-of-the-art developments and manufacturing. They are tested prior to delivery to ensure operating safety and reliability.

The products may only be used in the manner that is defined as appropriate. If they are used in an inappropriate manner, then situations can develop that may lead to property damage or injury of personnel.

☞ Bosch Rexroth, as manufacturer, is not liable for any damages resulting from inappropriate use.

Before using Bosch Rexroth products, make sure that all the pre-requisites for appropriate use of the products are satisfied:

- Personnel that in a way, shape or form uses our products must first read and understand the relevant safety instructions and be familiar with appropriate use.
- If the product takes the form of hardware, then they must remain in the original state, in other words, no structural changes are permitted. It its not permitted to decompile software products or alter source codes.
- Do not mount damaged or faulty products or use them in operation.
- Make sure that the products have been installed in the manner described in the relevant documentation.

2.1.2 Areas of Use and Application

Rexroth IndraMotion MTX

The Rexroth IndraMotion MTX control is used to

- Programming contour and machining technology (feedrate, spindle speed, tool change) or a workpiece.
- Guiding a machining tool along a programmed path.

Feed drives, spindles and auxiliary axes of a machine tool are activated via SERCOS interface.

☞ This additionally requires I/O components for the integrated PLC which, in combination with the actual CNC, controls the machining process as a whole and also monitors this process with regard to technical safety.

The unit may be operated only with the explicitly specified hardware component configurations and combinations and only with the software and firmware specified in the appropriate documentations and functional descriptions.

The Rexroth IndraMotion MTX has been developed for control tasks in multi-axis installations.

Typical applications are:

- lathes
- milling machines
- machining centers

Important Instructions on Use

Rexroth IndraMotion MLC/MLP

The Rexroth IndraMotion MLC/MLP control can be used for the

- motion as well as for the logic applications

☞ The Rexroth IndraMotion MLP control or the MLC control and their function modules may only be used with the accessories and attachments described in this documentation. Components that are not specified may neither be attached nor connected. The same applies to cables and wires.

The unit may be operated only with the explicitly specified hardware component configurations and combinations and only with the software and firmware specified in the appropriate documentations and functional descriptions.

The Rexroth IndraMotion MLP or MLC and their function modules were developed for single-axis as well as multi-axis drive and control tasks.

Device types with a different equipment and different interfaces are provided for the application-specific use of the machine operator and visualization terminals.

Typical areas of application of the IndraMotion MLP or MLC and their function modules are:

- [Handling systems and assembly systems]
- [Packaging and processing machines]
- [Printing machines and paper processing machines]
- [Machine tools]

The Rexroth IndraMotion MLP or MLC and their function modules may only be operated under the assembly conditions and installation conditions, in the specified position of application and under the specified ambient conditions (temperature, degree of protection, humidity, EMC etc.) given in this documentation.

2.2 Inappropriate Use

The application of the Rexroth IndraMotion MTX or the Rexroth IndraMotion MLP or MLC that are not within the specified areas of application or under operating conditions deviating from the operating conditions and technical data specified in the documentation are considered as "inappropriate".

The Rexroth IndraMotion MTX or the IndraMotion MLC/MLP may not be used if

- they are exposed to operating conditions that do not fulfill the ambient conditions specified. Operation under water, under extreme temperature fluctuations or extreme maximum temperatures is not allowed for example.
- Furthermore, the Rexroth IndraMotion MTX or the IndraMotion MLC/MLP may not be used for applications that were not explicitly released by Bosch Rexroth. Also note the general statements in the general safety-related guidelines!

3 Safety Instructions for Electric Drives and Controls

3.1 Safety Instructions - General Information

3.1.1 Using the Safety Instructions and Passing them on to Others

Do not attempt to install or commission this device without first reading all documentation provided with the product. Read and understand these safety instructions and all user documentation prior to working with the device. If you do not have the user documentation for the device, contact your responsible Bosch Rexroth sales representative. Ask for these documents to be sent immediately to the person or persons responsible for the safe operation of the device.

If the device is resold, rented and/or passed on to others in any other form, these safety instructions must be delivered with the device in the official language of the user's country.

WARNING

Improper use of these devices, failure to follow the safety instructions in this document or tampering with the product, including disabling of safety devices, may result in material damage, bodily harm, electric shock or even death!

Observe the safety instructions!

3.1.2 How to Employ the Safety Instructions

Read these instructions before initial commissioning of the equipment in order to eliminate the risk of bodily harm and/or material damage. Follow these safety instructions at all times.

- Bosch Rexroth AG is not liable for damages resulting from failure to observe the warnings provided in this documentation.
- Read the operating, maintenance and safety instructions in your language before commissioning the machine. If you find that you cannot completely understand the documentation for your product, please ask your supplier to clarify.
- Proper and correct transport, storage, assembly and installation, as well as care in operation and maintenance, are prerequisites for optimal and safe operation of this device.
- Only assign trained and qualified persons to work with electrical installations:
  - Only persons who are trained and qualified for the use and operation of the device may work on this device or within its proximity. The persons are qualified if they have sufficient knowledge of the assembly, installation and operation of the product, as well as an understanding of all warnings and precautionary measures noted in these instructions.
  - Furthermore, they must be trained, instructed and qualified to switch electrical circuits and devices on and off in accordance with technical safety regulations, to ground them and to mark them according to the requirements of safe work practices. They must have adequate safety equipment and be trained in first aid.
- Only use spare parts and accessories approved by the manufacturer.

- Follow all safety regulations and requirements for the specific application as practiced in the country of use.
- The devices have been designed for installation in industrial machinery.
- The ambient conditions given in the product documentation must be observed.
- Only use safety-relevant applications that are clearly and explicitly approved in the Project Planning Manual. If this is not the case, they are excluded. Safety-relevant are all such applications which can cause danger to persons and material damage.
- The information given in the documentation of the product with regard to the use of the delivered components contains only examples of applications and suggestions.

  The machine and installation manufacturer must

  – make sure that the delivered components are suited for his individual application and check the information given in this documentation with regard to the use of the components,
  – make sure that his application complies with the applicable safety regulations and standards and carry out the required measures, modifications and complements.
- Commissioning of the delivered components is only permitted once it is sure that the machine or installation in which they are installed complies with the national regulations, safety specifications and standards of the application.
- Operation is only permitted if the national EMC regulations for the application are met.
- The instructions for installation in accordance with EMC requirements can be found in the section on EMC in the respective documentation (Project Planning Manuals of components and system).

  The machine or installation manufacturer is responsible for compliance with the limiting values as prescribed in the national regulations.
- Technical data, connection and installation conditions are specified in the product documentation and must be followed at all times.

National regulations which the user must take into account

- European countries: according to European EN standards
- United States of America (USA):
  – National Electrical Code (NEC)
  – National Electrical Manufacturers Association (NEMA), as well as local engineering regulations
  – regulations of the National Fire Protection Association (NFPA)
- Canada: Canadian Standards Association (CSA)
- Other countries:
  – International Organization for Standardization (ISO)
  – International Electrotechnical Commission (IEC)

3.1.3 Explanation of Warning Symbols and Degrees of Hazard Seriousness

The safety instructions describe the following degrees of hazard seriousness. The degree of hazard seriousness informs about the consequences resulting from non-compliance with the safety instructions:

Warning symbol	Signal word	Degree of hazard seriousness acc. to ANSI Z 535.4-2002
	Danger	Death or severe bodily harm will occur.
	Warning	Death or severe bodily harm may occur.
	Caution	Minor or moderate bodily harm or material damage may occur.

Fig.3-1: Hazard classification (according to ANSI Z 535)

3.1.4 Hazards by Improper Use

DANGER

High electric voltage and high working current! Risk of death or severe bodily injury by electric shock!

Observe the safety instructions!

DANGER

Dangerous movements! Danger to life, severe bodily harm or material damage by unintentional motor movements!

Observe the safety instructions!

WARNING

High electric voltage because of incorrect connection! Risk of death or bodily injury by electric shock!

Observe the safety instructions!

WARNING

Health hazard for persons with heart pacemakers, metal implants and hearing aids in proximity to electrical equipment!

Observe the safety instructions!

CAUTION

Hot surfaces on device housing! Danger of injury! Danger of burns!

Observe the safety instructions!

CAUTION

Risk of injury by improper handling! Risk of bodily injury by bruising, shearing, cutting, hitting or improper handling of pressurized lines!

Observe the safety instructions!

CAUTION

Risk of injury by improper handling of batteries!

Observe the safety instructions!

3.2 Instructions with Regard to Specific Dangers

3.2.1 Protection Against Contact with Electrical Parts and Housings

☞ This section concerns devices and drive components with voltages of **more than 50 Volt**.

Contact with parts conducting voltages above 50 Volts can cause personal danger and electric shock. When operating electrical equipment, it is unavoidable that some parts of the devices conduct dangerous voltage.

DANGER

High electrical voltage! Danger to life, electric shock and severe bodily injury!

- Only those trained and qualified to work with or on electrical equipment are permitted to operate, maintain and repair this equipment.
- Follow general construction and safety regulations when working on power installations.
- Before switching on the device, the equipment grounding conductor must have been non-detachably connected to all electrical equipment in accordance with the connection diagram.
- Do not operate electrical equipment at any time, even for brief measurements or tests, if the equipment grounding conductor is not permanently connected to the mounting points of the components provided for this purpose.
- Before working with electrical parts with voltage potentials higher than 50 V, the device must be disconnected from the mains voltage or power supply unit. Provide a safeguard to prevent reconnection.
- With electrical drive and filter components, observe the following:

  Wait **30 minutes** after switching off power to allow capacitors to discharge before beginning to work. Measure the electric voltage on the capacitors before beginning to work to make sure that the equipment is safe to touch.
- Never touch the electrical connection points of a component while power is turned on. Do not remove or plug in connectors when the component has been powered.
- Install the covers and guards provided with the equipment properly before switching the device on. Before switching the equipment on, cover and safeguard live parts safely to prevent contact with those parts.
- A residual-current-operated circuit-breaker or r.c.d. cannot be used for electric drives! Indirect contact must be prevented by other means, for example, by an overcurrent protective device according to the relevant standards.
- Secure built-in devices from direct touching of electrical parts by providing an external housing, for example a control cabinet.

For electrical drive and filter components with voltages of **more than 50 volts**, observe the following additional safety instructions.

DANGER

High housing voltage and high leakage current! Risk of death or bodily injury by electric shock!

- Before switching on, the housings of all electrical equipment and motors must be connected or grounded with the equipment grounding conductor to the grounding points. This is also applicable before short tests.
- The equipment grounding conductor of the electrical equipment and the devices must be non-detachably and permanently connected to the power supply unit at all times. The leakage current is greater than 3.5 mA.
- Over the total length, use copper wire of a cross section of a minimum of 10 mm^2 for this equipment grounding connection!
- Before commissioning, also in trial runs, always attach the equipment grounding conductor or connect to the ground wire. Otherwise, high voltages may occur at the housing causing electric shock.

3.2.2 Protection Against Electric Shock by Protective Extra-Low Voltage

Protective extra-low voltage is used to allow connecting devices with basic insulation to extra-low voltage circuits.

All connections and terminals with voltages between 5 and 50 volts at Rexroth products are PELV systems. [1] It is therefore allowed to connect devices equipped with basic insulation (such as programming devices, PCs, notebooks, display units) to these connections and terminals.

WARNING

High electric voltage by incorrect connection! Risk of death or bodily injury by electric shock!

If extra-low voltage circuits of devices containing voltages and circuits of more than 50 volts (e.g. the mains connection) are connected to Rexroth products, the connected extra-low voltage circuits must comply with the requirements for PELV. [2]

3.2.3 Protection Against Dangerous Movements

Dangerous movements can be caused by faulty control of connected motors. Some common examples are:

- improper or wrong wiring of cable connections
- incorrect operation of the equipment components
- wrong input of parameters before operation
- malfunction of sensors, encoders and monitoring devices
- defective components
- software or firmware errors

Dangerous movements can occur immediately after equipment is switched on or even after an unspecified time of trouble-free operation.

1) *"Protective Extra-Low Voltage"*

2) *"Protective Extra-Low Voltage"*

The monitoring in the drive components will normally be sufficient to avoid faulty operation in the connected drives. Regarding personal safety, especially the danger of bodily harm and material damage, this alone cannot be relied upon to ensure complete safety. Until the integrated monitoring functions become effective, it must be assumed in any case that faulty drive movements will occur. The extent of faulty drive movements depends upon the type of control and the state of operation.

DANGER

Dangerous movements! Danger to life, risk of injury, severe bodily harm or material damage!

- Ensure personal safety by means of qualified and tested higher-level monitoring devices or measures integrated in the installation.

  These measures have to be provided for by the user according to the specific conditions within the installation and a hazard and fault analysis. The safety regulations applicable for the installation have to be taken into consideration. Unintended machine motion or other malfunction is possible if safety devices are disabled, bypassed or not activated.

To avoid accidents, bodily harm and/or material damage:

- Keep free and clear of the machine's range of motion and moving parts. Possible measures to prevent people from accidentally entering the machine's range of motion:
  - use safety fences
  - use safety guards
  - use protective coverings
  - install light curtains or light barriers
- Fences and coverings must be strong enough to resist maximum possible momentum.
- Mount the emergency stop switch in the immediate reach of the operator. Verify that the emergency stop works before startup. Don't operate the device if the emergency stop is not working.
- Isolate the drive power connection by means of an emergency stop circuit or use a safety related starting lockout to prevent unintentional start.
- Make sure that the drives are brought to a safe standstill before accessing or entering the danger zone.
- Additionally secure vertical axes against falling or dropping after switching off the motor power by, for example:
  - mechanically securing the vertical axes,
  - adding an external braking/ arrester/ clamping mechanism or
  - ensuring sufficient equilibration of the vertical axes.
- The standard equipment motor brake or an external brake controlled directly by the drive controller are **not sufficient to guarantee personal safety**!
- Disconnect electrical power to the equipment using a master switch and secure the switch against reconnection for:
  - maintenance and repair work
  - cleaning of equipment
  - long periods of discontinued equipment use
- Prevent the operation of high-frequency, remote control and radio equipment near electronics circuits and supply leads. If the use of such devices cannot be avoided, verify the system and the installation for possible malfunctions in all possible positions of normal use before initial startup. If necessary, perform a special electromagnetic compatibility (EMC) test on the installation.

3.2.4 Protection Against Magnetic and Electromagnetic Fields During Operation and Mounting

Magnetic and electromagnetic fields generated by current-carrying conductors and permanent magnets in motors represent a serious personal danger to those with heart pacemakers, metal implants and hearing aids.

WARNING

Health hazard for persons with heart pacemakers, metal implants and hearing aids in proximity to electrical equipment!

- Persons with heart pacemakers and metal implants are not permitted to enter following areas:
  - Areas in which electrical equipment and parts are mounted, being operated or commissioned.
  - Areas in which parts of motors with permanent magnets are being stored, repaired or mounted.
- If it is necessary for somebody with a pacemaker to enter such an area, a doctor must be consulted prior to doing so. The noise immunity of present or future implanted heart pacemakers differs greatly so that no general rules can be given.
- Those with metal implants or metal pieces, as well as with hearing aids, must consult a doctor before they enter the areas described above. Otherwise health hazards may occur.

3.2.5 Protection Against Contact with Hot Parts

CAUTION

Hot surfaces at motor housings, on drive controllers or chokes! Danger of injury! Danger of burns!

- Do not touch surfaces of device housings and chokes in the proximity of heat sources! Danger of burns!
- Do not touch housing surfaces of motors! Danger of burns!
- According to the operating conditions, temperatures can be **higher than 60 °C**, 140°F during or after operation.
- Before accessing motors after having switched them off, let them cool down for a sufficiently long time. Cooling down can require **up to 140 minutes**! Roughly estimated, the time required for cooling down is five times the thermal time constant specified in the Technical Data.
- After switching drive controllers or chokes off, wait 15 minutes to allow them to cool down before touching them.
- Wear safety gloves or do not work at hot surfaces.
- For certain applications, the manufacturer of the end product, machine or installation, according to the respective safety regulations, has to take measures to avoid injuries caused by burns in the end application. These measures can be, for example: warnings, guards (shielding or barrier), technical documentation.

3.2.6 Protection During Handling and Mounting

In unfavorable conditions, handling and mounting certain parts and components in an improper way can cause injuries.

CAUTION

Risk of injury by improper handling! Bodily injury by bruising, shearing, cutting, hitting!

- Observe the general construction and safety regulations on handling and mounting.
- Use suitable devices for mounting and transport.
- Avoid jamming and bruising by appropriate measures.
- Always use suitable tools. Use special tools if specified.
- Use lifting equipment and tools in the correct manner.
- If necessary, use suitable protective equipment (for example safety goggles, safety shoes, safety gloves).
- Do not stand under hanging loads.
- Immediately clean up any spilled liquids because of the danger of skidding.

3.2.7 Battery Safety

Batteries consist of active chemicals enclosed in a solid housing. Therefore, improper handling can cause injury or material damage.

CAUTION

Risk of injury by improper handling!

- Do not attempt to reactivate low batteries by heating or other methods (risk of explosion and cauterization).
- Do not recharge the batteries as this may cause leakage or explosion.
- Do not throw batteries into open flames.
- Do not dismantle batteries.
- When replacing the battery/batteries do not damage electrical parts installed in the devices.
- Only use the battery types specified by the manufacturer.

☞ Environmental protection and disposal! The batteries contained in the product are considered dangerous goods during land, air, and sea transport (risk of explosion) in the sense of the legal regulations. Dispose of used batteries separate from other waste. Observe the local regulations in the country of assembly.

3.2.8 Protection Against Pressurized Systems

According to the information given in the Project Planning Manuals, motors cooled with liquid and compressed air, as well as drive controllers, can be partially supplied with externally fed, pressurized media, such as compressed air, hydraulics oil, cooling liquids and cooling lubricating agents. Improper handling of the connected supply systems, supply lines or connections can cause injuries or material damage.

CAUTION

Risk of injury by improper handling of pressurized lines!

- Do not attempt to disconnect, open or cut pressurized lines (risk of explosion).
- Observe the respective manufacturer's operating instructions.
- Before dismounting lines, relieve pressure and empty medium.
- Use suitable protective equipment (for example safety goggles, safety shoes, safety gloves).
- Immediately clean up any spilled liquids from the floor.

☞ Environmental protection and disposal! The agents used to operate the product might not be economically friendly. Dispose of ecologically harmful agents separately from other waste. Observe the local regulations in the country of assembly.

4 Executing Installation

4.1 Administrator Rights

4.1.1 General

Installing the user interface requires experience in working with PCs and with the operating system. Administrator privileges are required for installation.

☞ The Installation may only be executed by an experienced user with knowledge of operating systems and with administrator privileges.

4.1.2 Access Data

Preinstalled operator panels supplied by the manufacturer have the following access data:

Windows XP:

- User name: Rexroth
- Password: Rexroth

4.1.3 Log in as Administrator

Log in as Administrator:

Windows XP:

- User name: Administrator
- Password: - (no password)

4.2 Licensing the Installation

The install successfully, a software license (SWL) from Bosch Rexroth is required. An activation code is provided with the software license. This code is to be entered during installation.

4.3 Initial Installation of Rexroth IndraWorks

4.3.1 DVD.

General

Starting from version 08VRS, the software of Rexroth IndraWorks is supplied exclusively on DVD. For this reason, a DVD drive or a network connection has to be available for installation.

It can be

- a local DVD drive [some Rexroth industrial PCs (e.g. control cabinet PCs) are equipped with an integrated DVD drive]
- a local external DVD drive (a portable DVD drive can be connected to the USB port of a Rexroth industrial PC for installation purposes)
- an available DVD drive in the network.

☞ Please inform yourself about the different possibilities before installing.

4.3.2 Installation from Hard Disk

If it is necessary to copy the data carrier (DVD) to the hard disk and then to install from there, the following has to be observed:

1. Create a directory on the hard disk, e.g. with the name: DVD.
2. Copy the content of the DVD into the directory DVD.
3. Start SETUP.EXE from the directory DVD from the hard disk.

The installation is conducted automatically.

4.3.3 Installing Rexroth IndraWorks

In this description we assume that you use DVD drive "E" for installation.

1. Insert the DVD into the DVD drive.

   ☞ If "Autorun" is enabled on your system and an installation should be executed form a local DVD drive, the installation wizard starts automatically and you can go to step 5.

   If "Autorun" is disabled on your system, you can continue either with step 2 or step 4.

   If you want to install from a enabled DVD drive in the network, navigate to the DVD drive (by using the Windows Explorer for example) and start "Setup.exe" by double-clicking. Continue with step 5.

2. Click **Execute** in the start menu.
3. When you install your system from a DVD enter for instance"E:\SETUP.EXE".

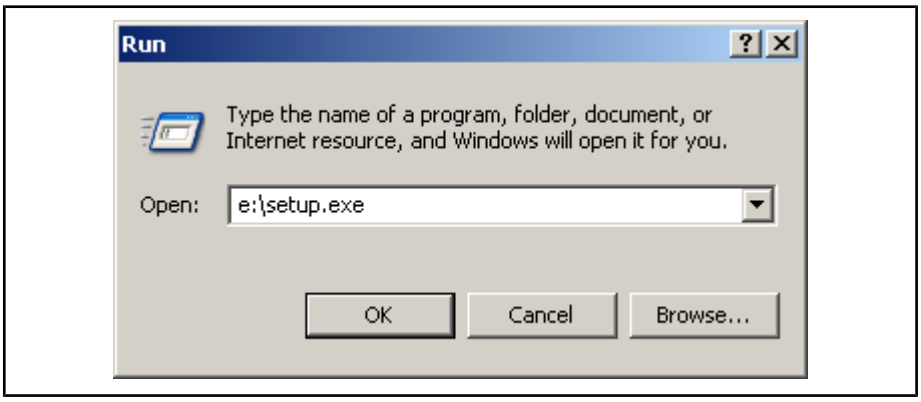


Fig.4-1: Dialog: Execution of Windows XP

Then click "OK" or confirm with <Enter>.

Continue with step 5.

4. A further option is to click on the DVD drive in the Windows Explorer and the execute the file "setup.exe" via double click:

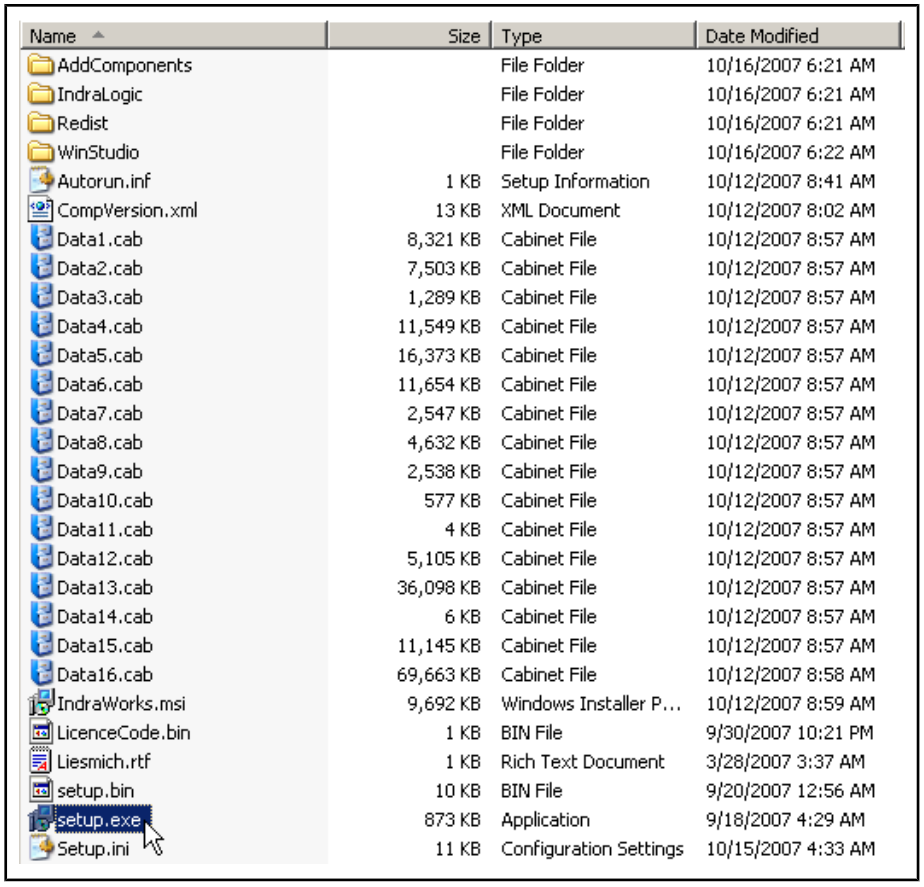


Fig.4-2: Content of the DVD listed with selection of setup.exe

Using <Enter> or by double-clicking, the installation wizard is started.

5. Select the language for the installation program.

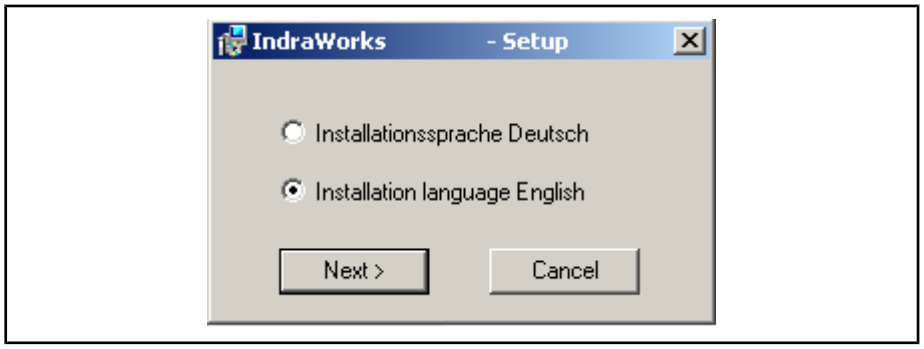


Fig.4-3: Language selection

You are guided through the installation. Press the "Next >" button to open the next dialog box; pressing "< Back" brings you back to the previous dialog box.

6. Select the systems that you want to install by setting the check mark at the beginning of the row.

Executing Installation

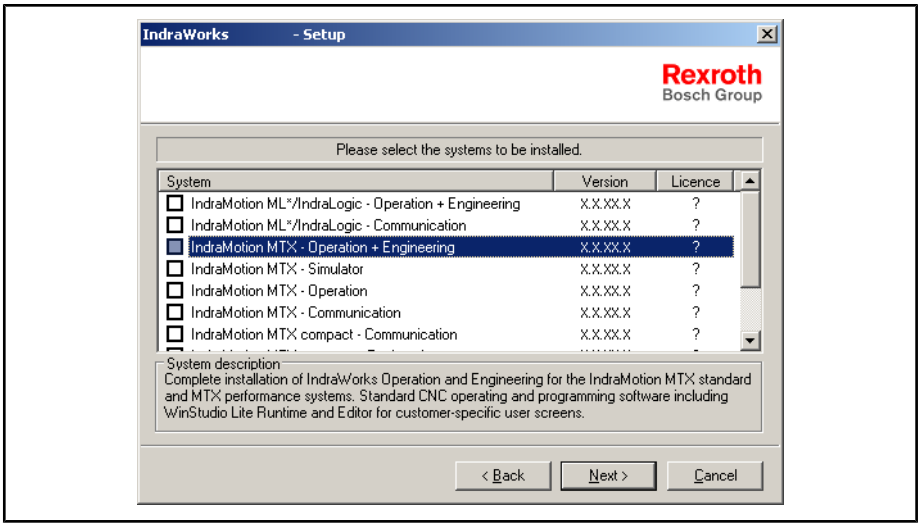


Fig.4-4: Selecting the systems to be installed

If you have selected a system that is subject to license conditions, marked by the question mark in column "license", the following dialog box opens automatically for entering an activation code.

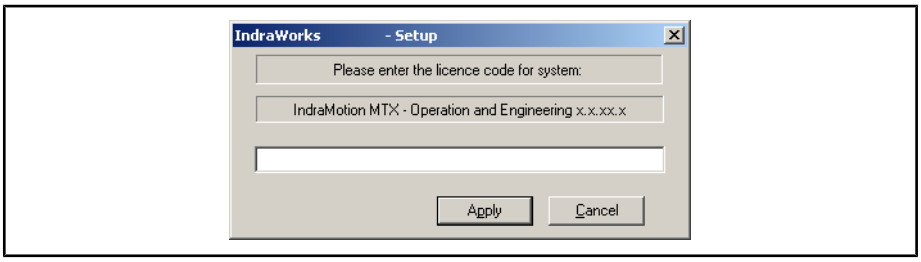


Fig.4-5: Entering an activation code for the system selected

If, after "accepting", the word"valid" is shown instead of the question mark, the activation code has been accepted by the system. Additionally, the check mark is set at the beginning of the row.

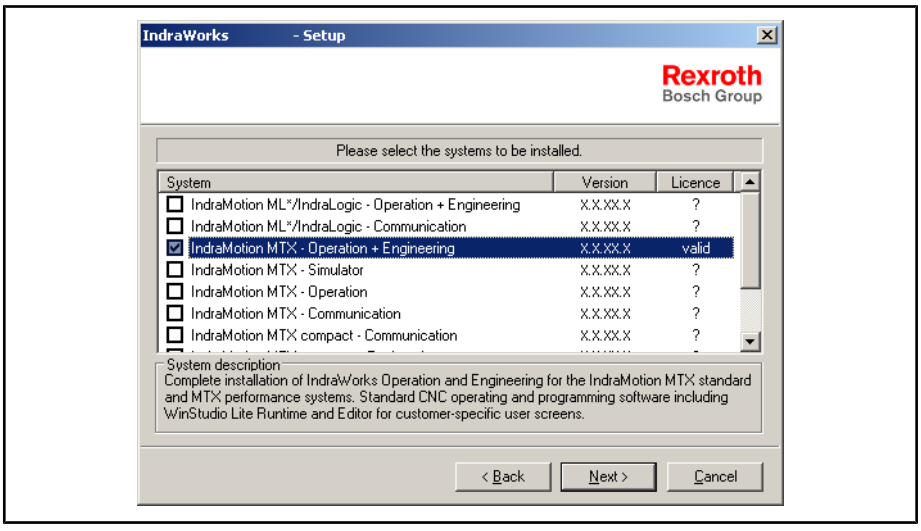


Fig.4-6: Entering valid activation code

Using "Next >" you will see a list of the tasks to be executed. Also confirm the activities by pressing "Next >".

7. A message appears if release notes exist for the current version. If you select "Display Release Notes", the corresponding PDF document opens after you press "Next >".

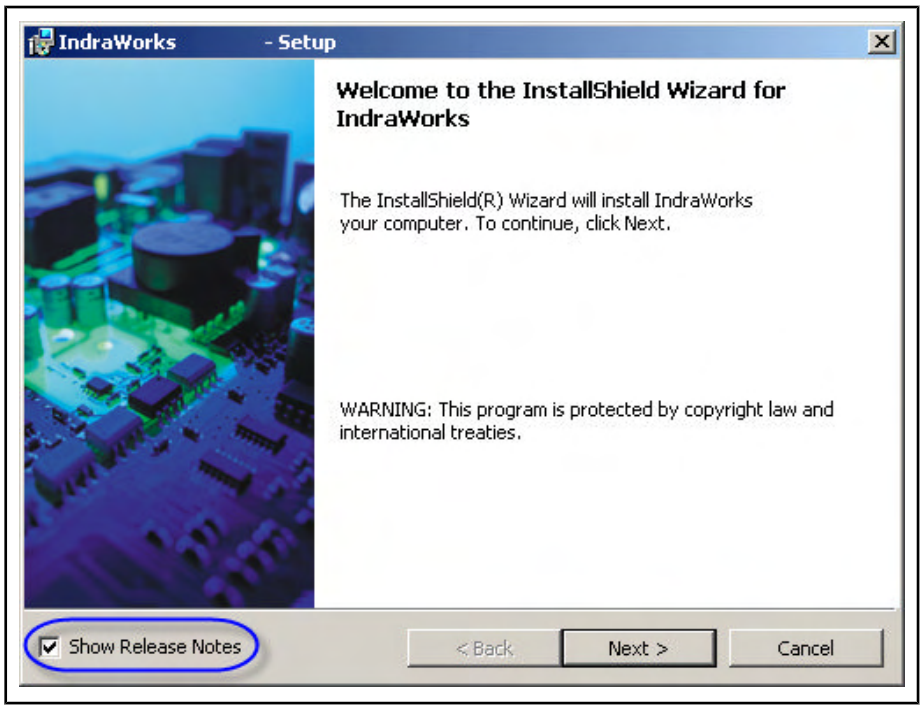


Fig.4-7: Message about release notes

8. Exit Acrobat Reader after having read the release notes and follow the remaining installation instructions.
9. Accept the conditions of the license agreement.

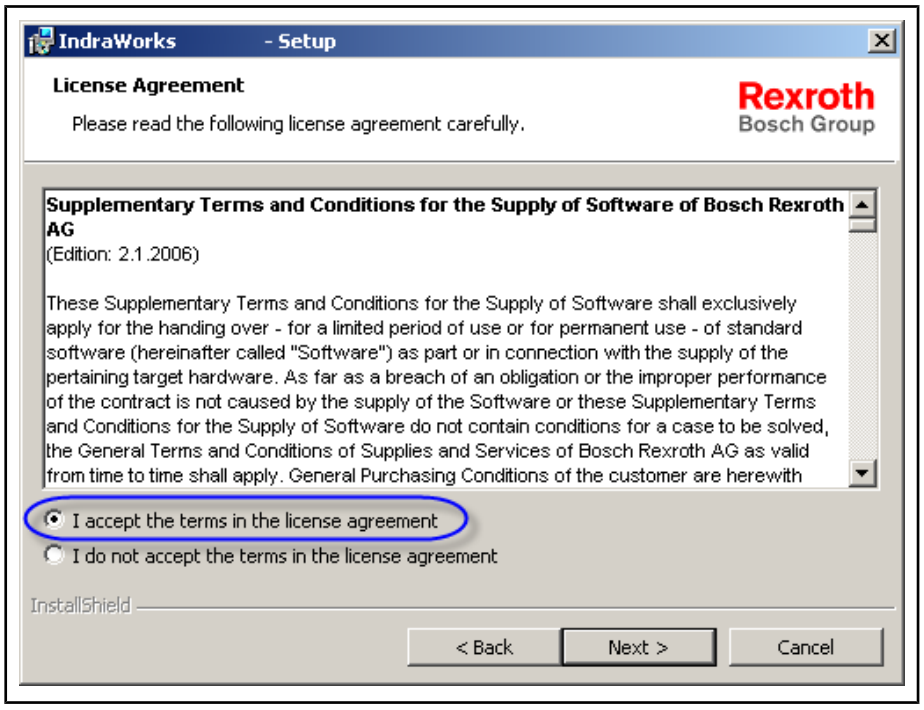


Fig.4-8: License agreement

10. Confirm by pressing "Next >", the dialog box "user information" is displayed.

Executing Installation

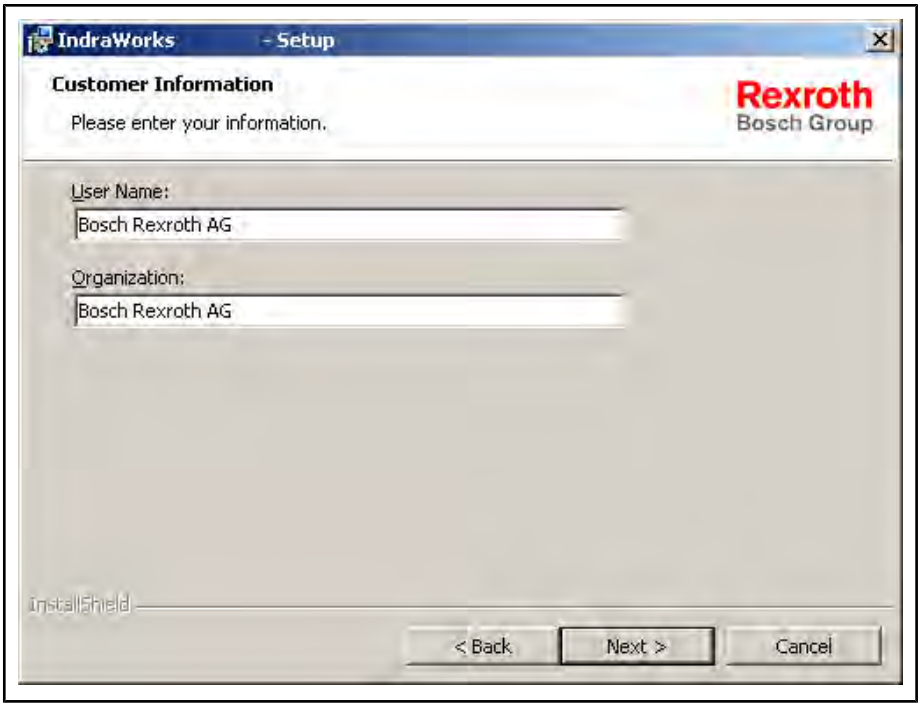


Fig.4-9: User information

11. Enter name and company of the rightful user and press "Next >,"; this brings you to the selection of the desired installation directory (target folder).
12. In the dialog box, select the drive and the destination folder where the user interface is to be installed.

☞ The hard disk of a standard VPP has two partitions (C: NTFS file system, D: FAT32 file system). The interface has to be installed on drive C:.

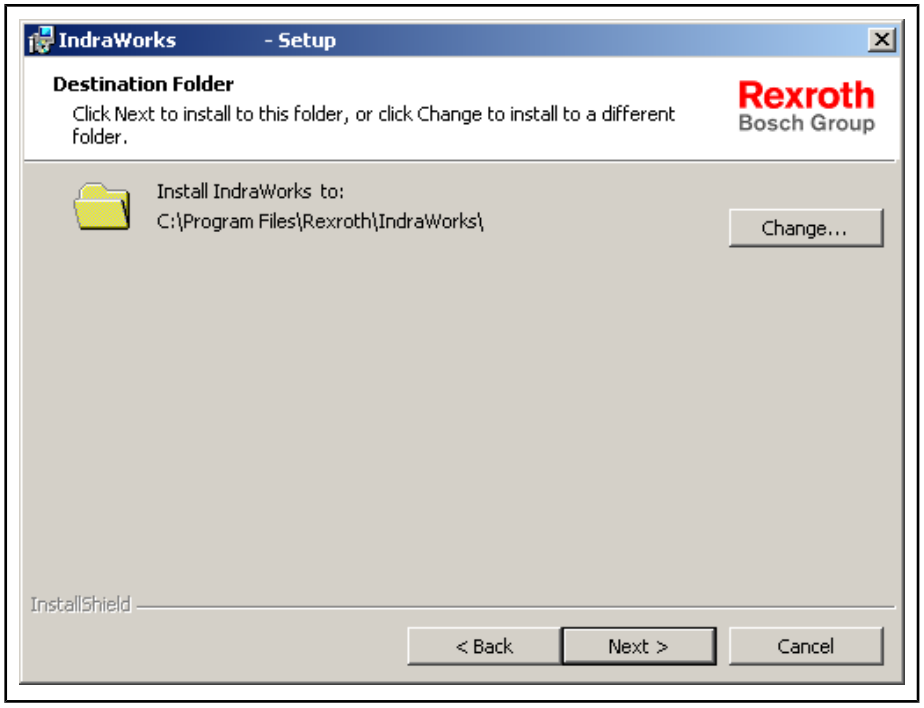


Fig.4-10: Selecting the Target Folder

By pressing "Next >" the "MTX Additional Configuration" dialog box opens.

13. ☞ This step is not applicable if you wish to install "IndraWorks MLC".

Input dialog for MTX target name "mtxctrl" is offered as default entry. The MTX target name can have max. 7 characters. Pressing "Next >" brings you to the IP input dialog box.

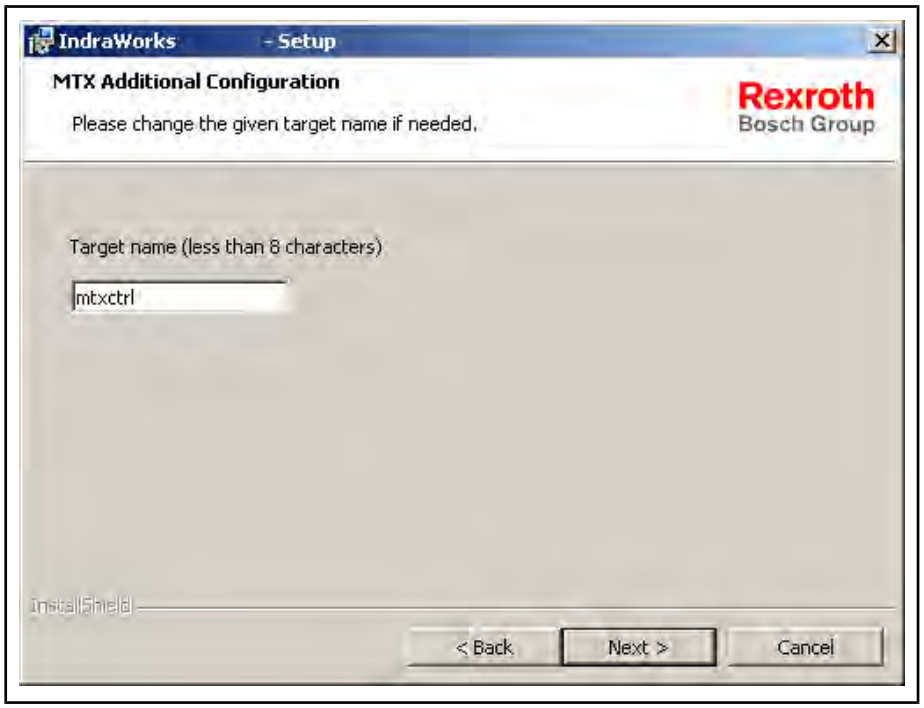


Fig.4-11: Entering the target name

Executing Installation

14. ☞ This step is not applicable if you wish to install "IndraWorks MLC".

Enter the IP address for the control card. Default: 192.168.142.250. Pressing "Next >" brings you to the Start dialog box for the actual installation procedure.

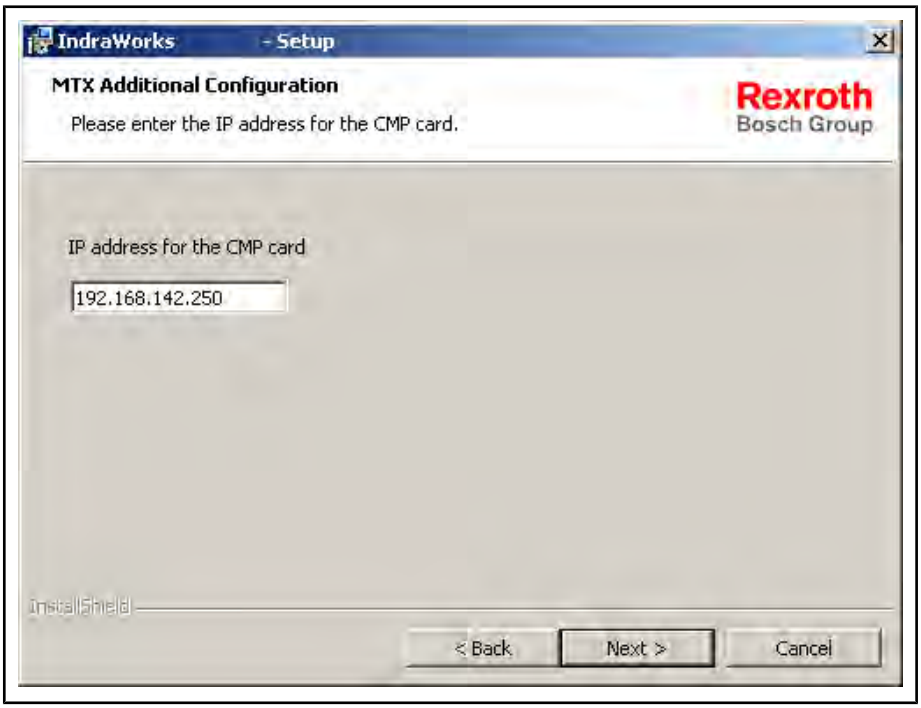


Fig.4-12: IP address of IndraControl P40/P60

15. Start the installation procedure by pressing "Install"

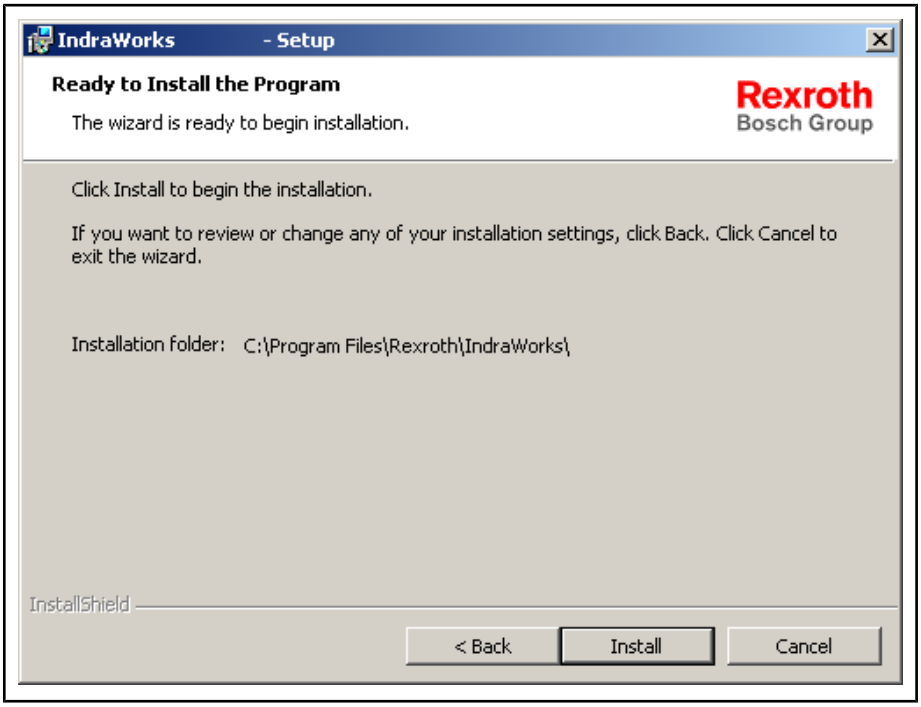


Fig.4-13: Starting the installation procedure

The installation procedure now starts. The progress bar informs about the installation progress.

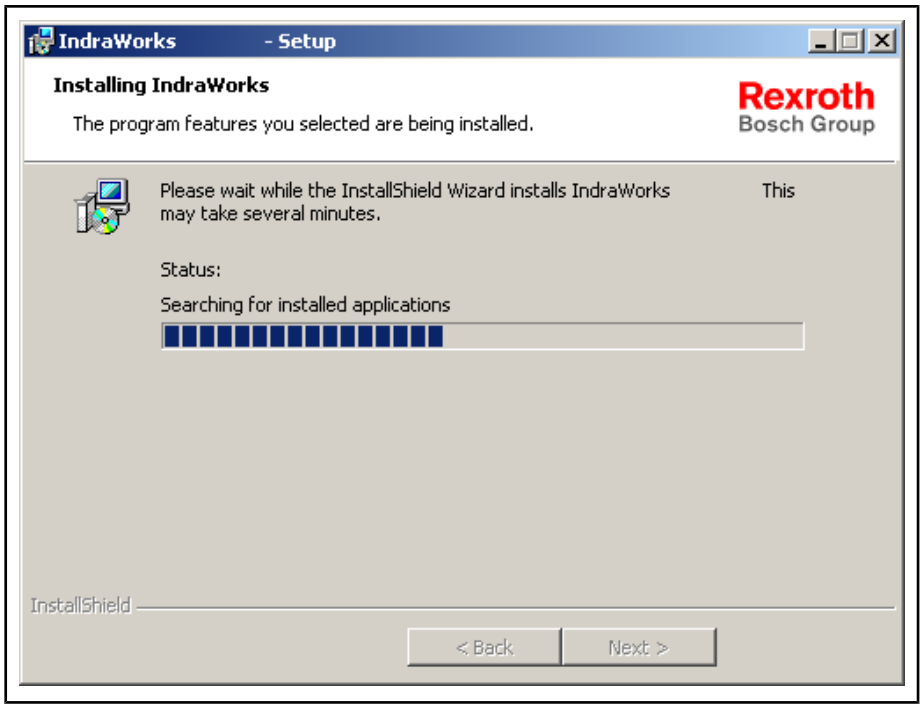


Fig.4-14: Progress of the installation procedure

16. When requested, complete the installation by clicking "Finish".

    After completion of the copying process, you will be prompted to restart Windows.

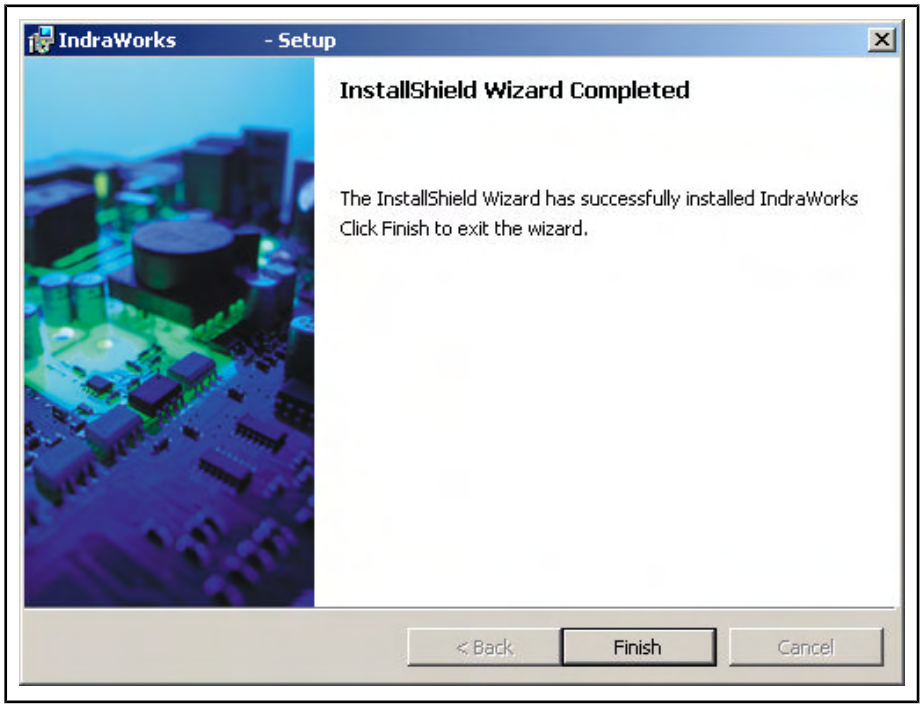


Fig.4-15: End of the installation procedure

☞ You have to restart Windows respectively your computer before you can use the program.

After booting, the system files are updated and registrations, if required, are executed.

This completes the installation procedure.

4.3.4 Installation of System Variant IndraControl L40 (Simulator)

Rexroth IndraMotion MTX simulator is installed in connection with MTX compact (IndraControl L40). The installation is executed as described previously. The only difference is that the dialog boxes for entering the target name and the IP address do not appear.

☞ The service "Windows Firewall/ common utilization of internet connection" must not be exited! Otherwise the MTX simulation crashes without an error message after booting the PC.

4.4 Further Steps Before Commissioning an MTX Control

4.4.1 Update Network Driver

The network driver for IndraControl P40/P60 establishes communication between the CPM60 control card and the IPC. The driver for IndraControl P40/P60 is installed as follows:

- Open Windows "Device Manager" using **Start ▸ Settings ▸ Control Panel ▸ System ▸ Tab Hardware**.

  The new hardware "Network Adapter", which was detected by Windows, should be marked with a yellow exclamation mark in the Device Manager.
- Use the right mouse button to click on the new network adapter and select the menu "Update drivers...".

  The "Hardware update wizard" opens.
- In the hardware update wizard select the option "Install software from a list or a particular source" and press "Continue".
- Afterwards, select the option "Browse this source for matching drivers" in the "Browsing and installation option" and enter the directory "LW:\Programme\Rexroth\IndraWorks\MTX\drivers" in the option "Browse the following sources as well". Exit the dialog box using "Continue".

  The driver is now installed and after installation it is entered under network adapters with "PCC-P Numerical Controller".

4.4.2 Configuring the Firewall

The control card IndraControl P40/P60 has to be removed from the firewall manually.

1. Open **Start ▸ Settings ▸ Control Panel ▸ Windows Firewall** in the start menu.
2. Select tab "Advanced".

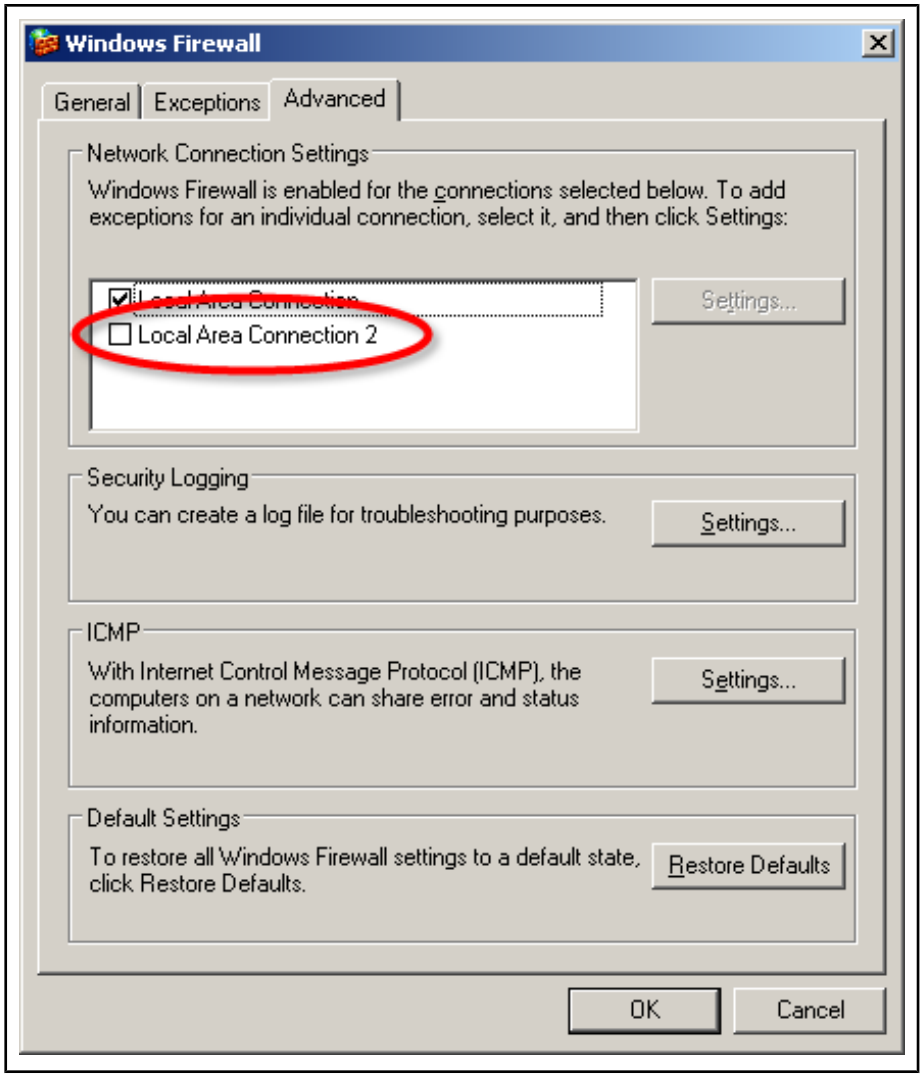


Fig.4-16: Advanced firewall settings

3. Deactivate the entry "LAN connection 2", by removing the check mark.
4. Accept the settings by pressing "OK".

   This removes the IndraControl P40/P69 from the firewall.

4.4.3 Configuring the Network Connection to the IndraControl P40/P60

Setting the sequence of the network connections and the configuration of the communication interface to the IndraControl P40/P60 is documented in the MTX System Description in chapter "CNC Control Modules IndraControl P40 and IndraControl P60".

4.5 Initial Startup of an IndraMotion MLC

4.5.1 General

The IndraMotion MLC control is a compact control that can be mounted mechanically on the top-rail hat. It contains all connection possibilities (inputs or outputs, SERCOS etc.) that are required for the control task.

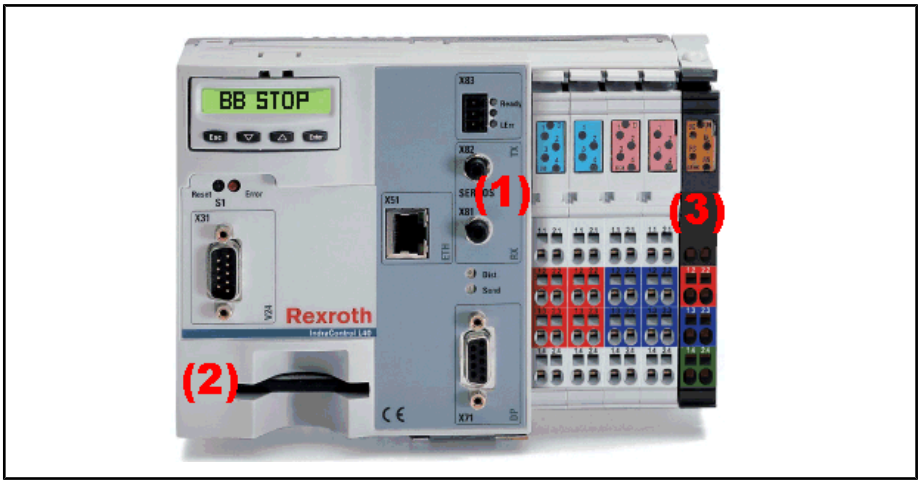
The hardware components contain the control commands of the firmware developed. The firmware connects the hardware and the PC-based software "IndraWorks MLC". The software is part of the "IndraWorks Engineering

Suite" that is to be installed separately. The procedure is described under chapter 4.3 "Initial Installation of Rexroth IndraWorks " on page 17.

4.5.2 Commissioning of the Hardware

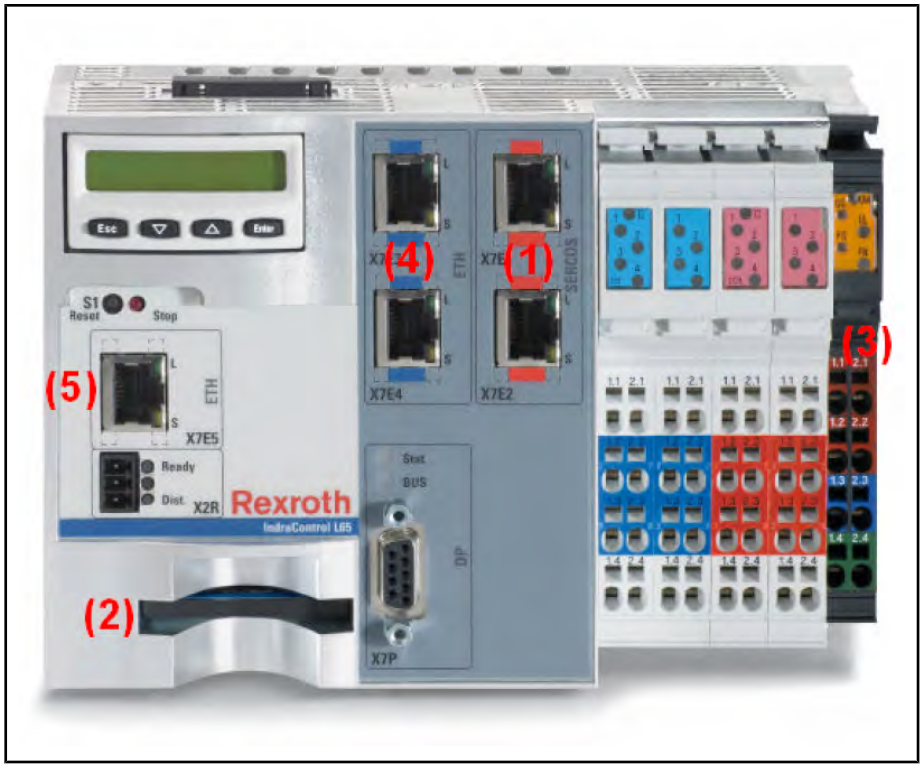
Startup of the Control

This section describes how the control is prepared to work online without user interface and without Ethernet connection.



① Connection terminals for the SERCOS bus
② CompactFlash card
③ Voltage Supply

Fig.4-17: IndraControl L40.2 for MLC applications



① Connections for SERCOS III
② CompactFlash card
③ Voltage Supply
④ Connections for Ethernet IP, ProfiNet, standard Ethernet
⑤ Connection for standard Ethernet

Fig.4-18: IndraControl L65.1 for MLC applications

Prerequisites for the initial startup are:

- Bridging the SERCOS input and output X7S1 and X7S2 with an optical fiber cable for the L40.2 or with an Ethernet cable for the L65.1 (exclusion of possible errors in the SERCOS ring)
- Inserting the Compact Flash card with MLC firmware
- Provision of the supply voltage

After switching on the power supply, the control runs up to the diagnostics display **BB STOP**.

Memory deletion of the Control

Due to earlier use, the control can contain old program parts, parameterizations and PLC data which will be removed by deleting the memory.

This step can be omitted for new controls.

IP Address - Initial Setting

Before coupling the MLC to the programming device (e.g. notebook) via the Ethernet, the MLC has to be provided with an IP address valid for the net.

State When Shipped

The addresses on the control are set as follows when shipped:

Address	Initial value
IP address	192.168.001.001
Subnet mask	255.255.255.0
Default gateway	192.168.001.001

Fig.4-19: Initial values

The IP and the subnet mask of a control are set via the control display using the 4 operating keys. The control can be connected to the PC via the intranet or via cross-over cables. the cross-over connection does not require any modification of the address. Only the side of the programming device has to be adapted.

☞ If the control is connected to the intranet, the specifications by the network administrator are to be considered.

Activating an Error-free SERCOS Ring

The bridge suggested in section "Prerequisites for the initial startup are: " on page 29 that was used instead of the SERCOS bus is now replaced by the bus.

It is required that

- every single drive in the ring has the same current firmware (MPH/MPB, functional package "Synchronization" or HNC3x, functional package "Servo function")
- every address is assigned only once and
- the wiring was carried out correctly

The individual drives automatically synchronize to the baud rate of the master (of the control).

After switching the control on and off, **BB Stop** should be reached again for the control and **bb** for the drives without power activation.

Notes for the configuration as well as the commissioning of the SERCOS bus can be found in the "Rexroth IndraLogic MLC, Project Planning Manual".

4.6 Parallel Installation

It is possible to install several different versions of the Rexroth IndraWorks software. Proceed as follows if you want to install a version in addition to the one you already have.

1. Start the installation as described in chapter 4.3.3 "Installing Rexroth IndraWorks" on page 18.

   After the language is selected, a selection dialog box appears.

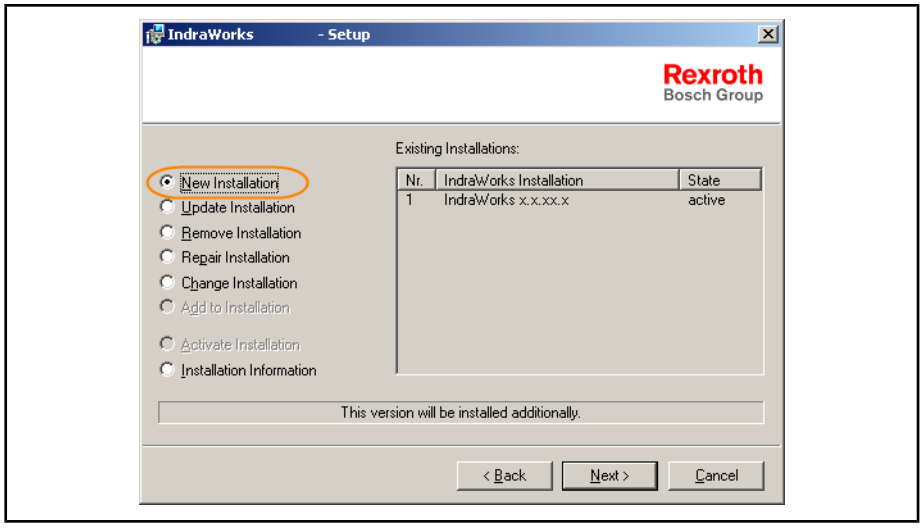


Fig.4-20: Setting the installation type

2. Select "New installation" and close the dialog box by pressing "Next >".
   This starts the installation.

The remaining installation steps are the same as for a new installation.

4.7 Deinstallationof Rexroth IndraWorks

Deinstallation with parallel installations

If several software versions have been installed, deinstallation can also be carried out via the setup. After having started the setup (see chapter 4.3.3 "Installing Rexroth IndraWorks" on page 18), a selection dialog box appears.

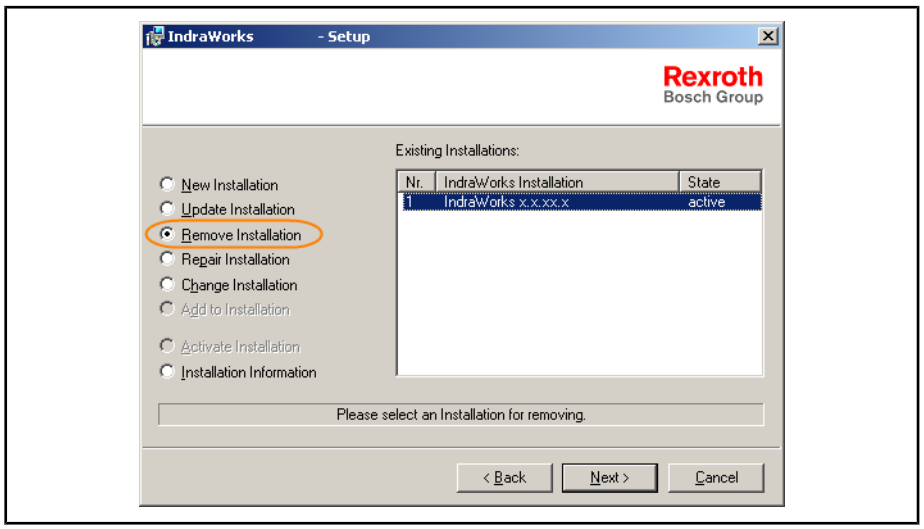


Fig.4-21: Selection dialog box - removing an installation

1. From the list, select the version that you want to remove.
2. Activate the selection "Remove an installation".
3. Press "Next >" to continue with deinstallation.

Deinstallation Using Operating System

The installation of Rexroth IndraWorks is conducted using the operating system (clicking on: **Start menu ▸ Control Panel ▸ Software**). Select "IndraWorks" as the program to be uninstalled. The Rexroth IndraWorks installation CDs are not required for this. After deinstallation, you are asked whether ALL the data within the Installation folder are to be moved to the recycle bin.

Executing Installation

CAUTION

Loss of user data!

⇒ Make sure that you save the user data before uninstalling the software if you want to keep them.

Fig.4-22: End of the deinstallation procedure

After completion of the deinstallation process, you will be prompted to restart Windows.

☞ In order to update the system files, restarting Windows respectively your computer is necessary.

After booting, the system files are updated. This completes the deinstallation process.

5 Data Archiving / Backup

5.1 Archiving the IndraWorks Project

An IndraWorks project is archived using IndraWorks Engineering.

☞ Please note the system specification for the IndraMotion MLC in the "MLC Functional Description", chapter "Complete Data Backup".

☞ Archiving the IndraWorks project also includes archiving NC data.

- Start the IndraWorks Engineering **Archive ▸ project**.
- Select the destination for the project to be archived (the project may be archived on a file system or using the FTP server in the control system) and press "Next".
- If archiving takes place in the file system, you have to enter the directory and the name of the archive to be created in the following window under "Archive name". When archiving using the FTP server you have to enter the device name or the IP address of the control system and an archive name. In both cases you can specify a password in the corresponding window. Confirm the details using "Next".
- The following window contains a compilation of the information that you have to ,confirm using "Finish".
- The following window contains a selection for archiving NC data. Here, you can select the data to be archived. Confirm the details using "Next".
- The next dialog box shows a compilation of the information entered. A possibly running NC and/or PLC program has to be stopped before archiving. This can be done by selecting "Switch PLC to stop condition". Using "Finish" you start archiving the NC data.
- After archiving, a compilation containing the status of the archiving procedure of the NC data is shown. Using "Close" you start archiving the IndraWorks project as a whole, including the NC data.
- After successful archiving the IndraWorks project as a whole, a dialog box with a compilation of the results of the archiving procedure is shown. Using "Close" you cancel the procedure.

☞ Note: The project path of the archived IndraWorks project, as well as the name and path of the archive, should be noted in any case. This information is necessary for subsequent restoring.

5.2 Archiving of Data that are Not Project-Specific

☞ These data are PLC data as well as GSD files and PLC libraries if they are not saved project-specifically but target-specifically.

- You will find special GSD files in folder"C:\Program files\Rexroth\IndraWorks \IndraLogic \Targets \<Targetname>\userconfig"
- You will find special PLC libraries in folder "C:\Program files \Rexroth\IndraWorks \IndraLogic \Targets \<Targetname>\lib" or in folder "C:\Programme \Rexroth \IndraWorks \IndraLogic \Targets \Config".

6 Firmware Management

The firmware management provides the following functionalities in IndraWorks:

- load a firmware to a device,
- display the current firmware in a device,
- display the firmware versions available for download.

Retrieving the Firmware Management

You can start the firmware management using the context menu of a device or the device-specific information in the main menu. For this, select **Firmware management**.

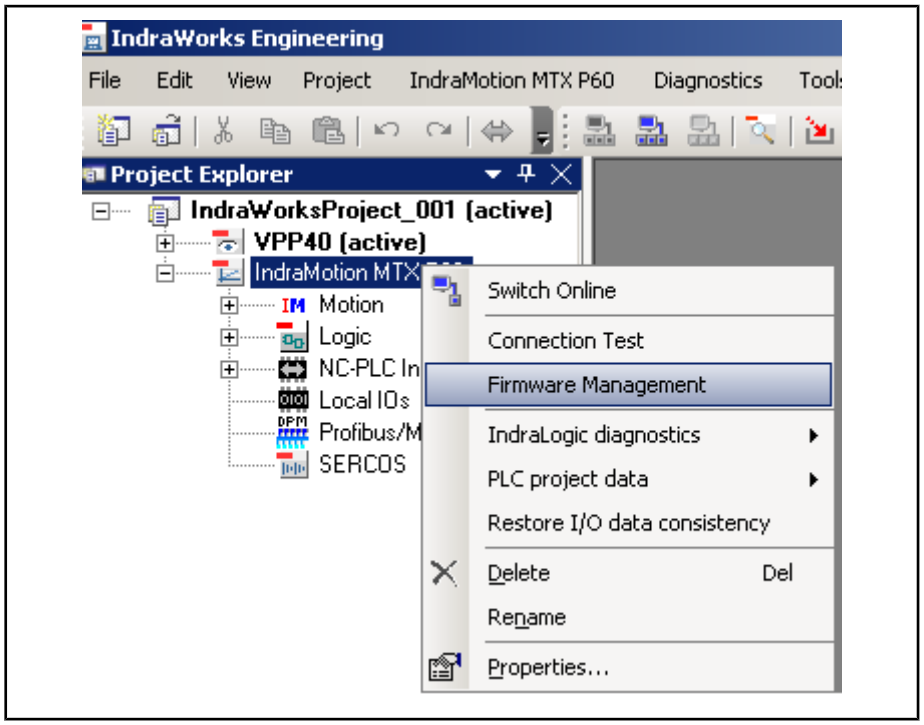


Fig.6-1: Retrieving the firmware download

Firmware Management

Description of the Elements of the Dialog Box

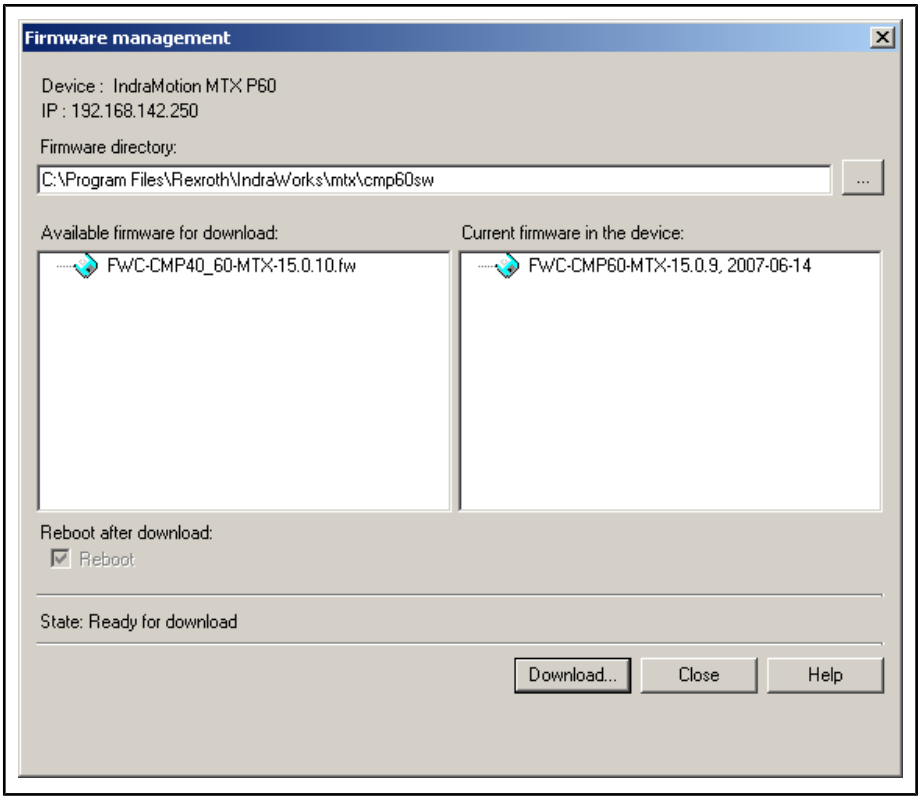


Fig.6-2: Dialog box "Firmware management"

The left selection window of the dialog box shows the firmware versions available for download. Depending on the device used, you can select a directory containing the firmware files above this display.

The right window of the dialog box shows the firmware currently installed in the device.

Below this window there is a display informing you about the current status of the available firmware version, e.g. "Ready for download".

Operation

☞ Before downloading the firmware you have to make the device "download compatible", i.e. you have to stop all partial programs and the PLC and bring the drives to the parametrization level (phase 2).

Before downloading the firmware you should check, if this is necessary. For this, compare the current firmware in the device with the version to be downloaded. If you have to download a new firmware, proceed as follows:

1. Mark the firmware file to be downloaded
2. Consider further, device-specific options such as "Restart after download"
3. Start the execution using "Download".

The progress display will inform you about the current status while downloading.

☞ While downloading the firmware the power supply of the device must not be switched off and the network connection must not be interrupted. In case any of the aforementioned issues arise, the device does not start and you have to re-execute the firmware download.

It is possible that user data are lost with some of the devices. For safety purposes we recommend archiving the user data **before** updating the software.

See chapter 5 "Data Archiving / Backup" on page 33 to find out how to archive data.

7 Executing a Software Update of IndraWorks

7.1 Executing an Update of IndraWorks

CAUTION

Loss of user data!

It is possible that user data are lost with some of the devices. For safety purposes we recommend archiving the user data **before** updating the software.

Start the installation as described in chapter 4 "Executing Installation" on page 17.

1. Proceed to the following selection dialog box:

   You will see a list of the already existing installations.

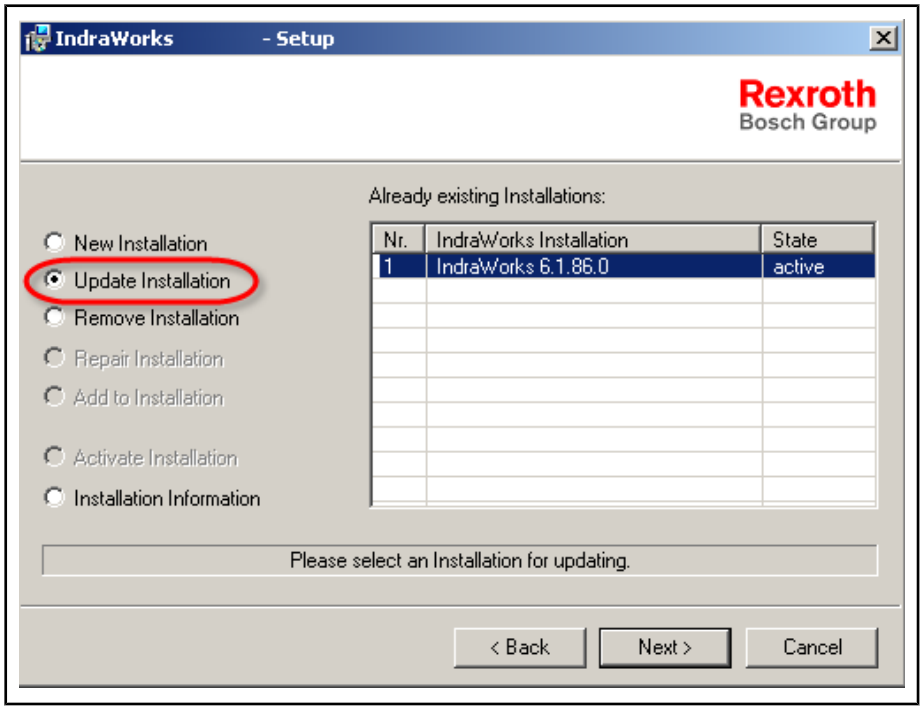


Fig.7-1: Selection dialog box

2. - From the list, select the version that you want to update.
   - Activate the selection "Update an installation".
   - Exit the dialog box by pressing "Next >".
3. If it is necessary to uninstall the former version of IndraWorks before updating, you will receive the following message:

Executing a Software Update of IndraWorks

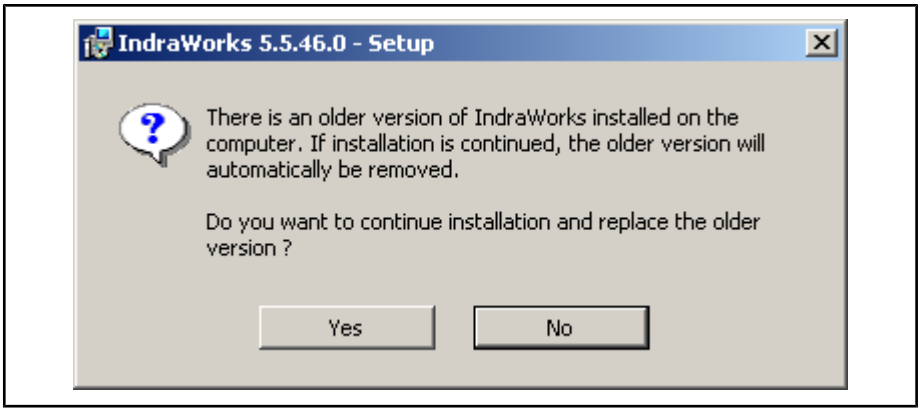


Fig.7-2: Message indicating IndraWorks update

If you answer the query with "Yes", the info screen for executing the update appears.

4. The remaining procedure is the same as for an initial installation. Please follow the instructions on the screen.

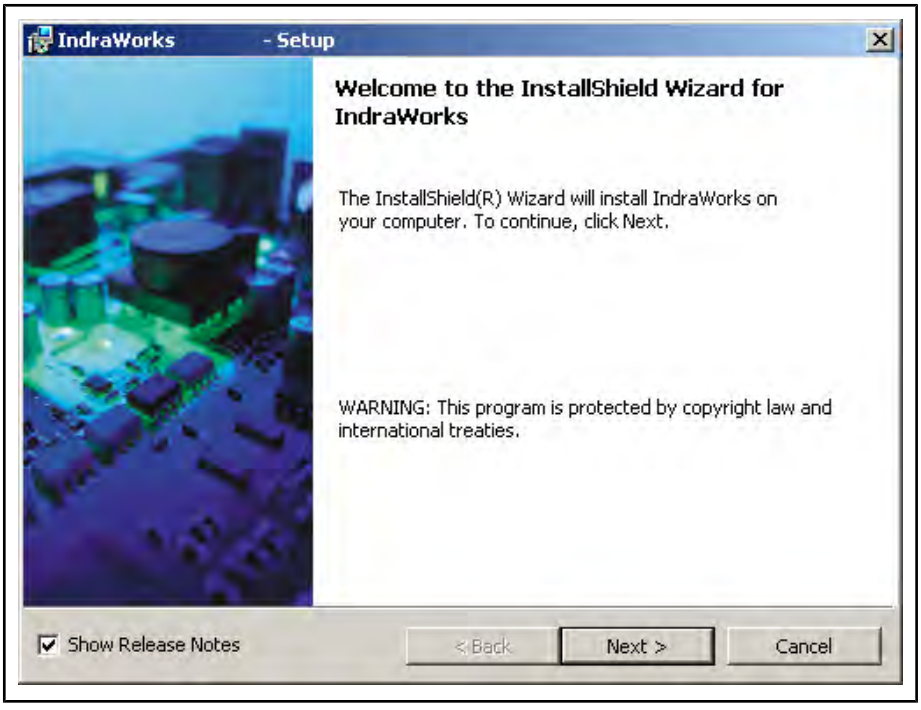


Fig.7-3: Info screen for updating IndraWorks

5. When requested, complete the installation by clicking "Finish".

   After completion of the update process, you will be prompted to restart Windows.

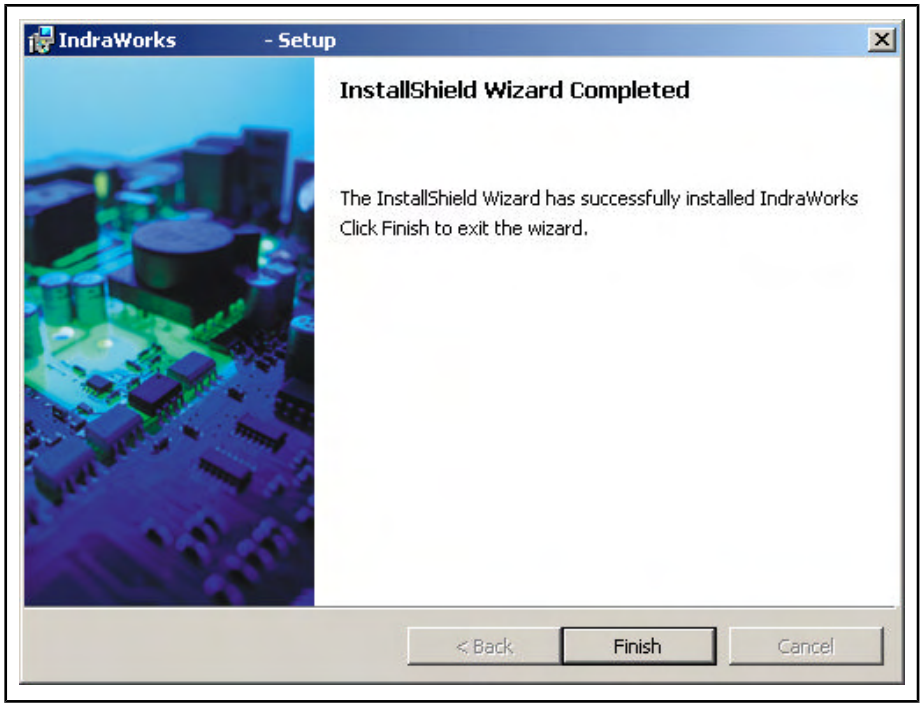


Fig.7-4: End of the update procedure

☞ You have to restart Windows respectively your computer before you can use the program.

After booting, the system files are updated and registrations, if required, are executed. This completes the installation procedure.

8 Restoring Data

8.1 Restoring Data that are not Project-Specific

☞ These data are PLC data as well as GSD files and PLC libraries if they are not saved project-specifically but target-specifically.

- You have to copy these special GSD files from the backup folder into folder "C:\Program files \Rexroth \IndraWorks \IndraLogic \Targets\<Target-name>\userconfig".
- You have to copy these special PLC libraries from the backup folder into folder "C:\Program files \Rexroth \IndraWorks \IndraLogic \Targets\<Targetname>\lib".

8.2 Restoring the IndraWorks Project

☞ MLC user select "CompactFlash" instead of "FEPROM".

- Start restoring in IndraWorks Engineering under **Restore ▸ project**.
- Select the directory of the archived project (the project may be archived on the file system or using the FTP server in the control system) and confirm with "Next".
- If you have selected the restoring procedure from file system, enter the directory and the name of the archive to be restored in the next window under "Archive name". When restoring using the FTP server you have to specify the device name or the IP address of the control system and the archive name. Confirm your entries with "Next".
- A dialog box opens where you have to enter the directory of the project to be restored in "Target directory". Confirm your entries by pressing "Next".
- The following window contains a compilation of the entries you made that you have to confirm with "Finish".
- Project restoring is now started.
- After having restored the project successfully, you will se a dialog box containing a compilation that you exit with "Close".
- You can open the restored project immediately in IndraWorks Engineering. In the context menu of the control knot you can switch the control system to "Online".
- At first click on "Restore" and afterwards on "Control data" in the same context menu.
- The following window, select the control archive to be restored and here "User FEPROM". Using "Next" you exit the selection.
- You will see a dialog box, in which only "User FEPROM" is selected. Using "Finish" you start restoring the partial archive.
- You will see a compilation containing the information about "User FEPROM". By selecting "Conduct NC restart with startup mode 6" and pressing "Close" you stop restoring "User FEPROM" and conduct an NC restart.
- In order to restore the remaining NC data, at first select"Restore" in the context menu of the control system and then "Control data". In the follow-

ing window, select all control data, except "User FEPROM", and confirm the selecting with "Next".

- You will see a list containing all previously selected partial archives, for which you start the restoring procedure by clicking on "Finish".
- A compilation will inform you about the successful restoring procedure of the partial archives. Click on "Conduct NC restart with startup mode 0". Confirm completion of the restoring procedure for NC data with "Close", also comprising an NC restart.

☞ You have to open IndraLogic and load the PLC program into the control system to be able to use the restored PLC project data.

☞ For the restored project becoming effective in IndraWorks Operation you have to select under **Project ▸ Active for IndraWorks Operation**.

Only for MTX users!

9 Licensing IndraWorks Components

9.1 General

The licenses of IndraWorks software components are managed using the option dialog box. Open the option dialog box using **Extras ▸ Options** and select the page "Software licenses" under "General".

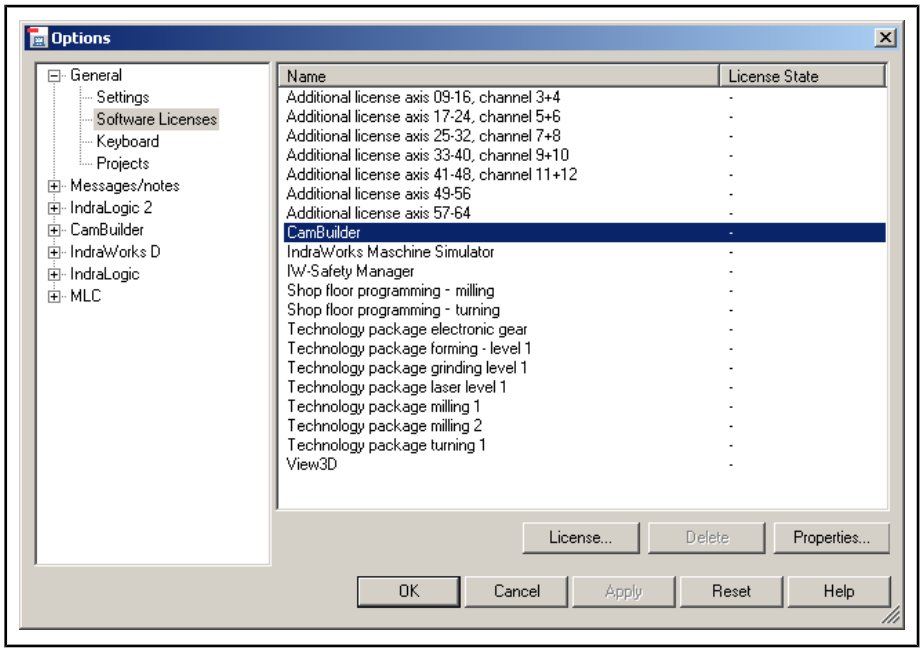


Fig.9-1: Option dialog box, licensing

The page shows all available software components subject to licenses, including their license status. The extent of the entries depends on the system installed.

License status	Meaning
-	No license has been installed on the computer. The component cannot be used.
licensed	A full license has been installed on the computer. The component can be used without limitations.
Demo-license 30 days	A temporary demo-license has been installed on the computer. The component may be used for evaluation purposes within the specified number of days (30 days at a maximum).

Fig.9-2: License status

A license description is shown if the mouse cursor is located above the corresponding list entry.

9.2 Installing a License

In order to license a software components select the corresponding component from the list and then confirm with "License...".

☞ " License..." is deactivated if a full license already has been installed.

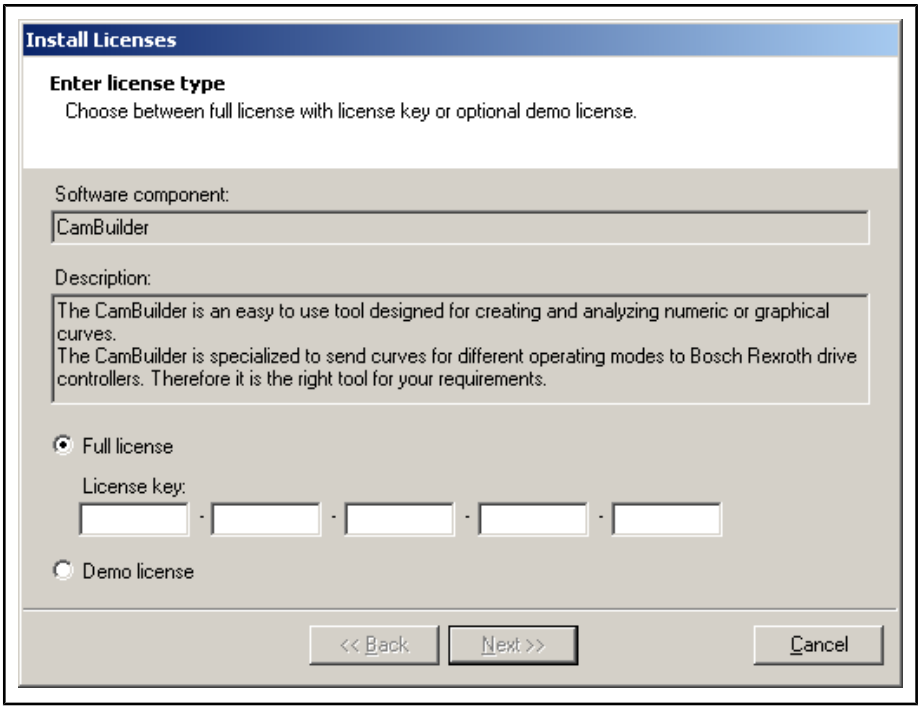


Fig.9-3: Dialog box licenses, specify license type

At first decide whether you want to install an unlimited full license of a demo-license. Using a demo-license you can test the selected software components for 30 days.

☞ If "Demo-license" is deactivated, either a demo-license already is installed or the selected components does not support demo-licenses.

Specify the license key and, if applicable, the serial number to install a full license. You received the required data when purchasing the license.

Press "Next >>".

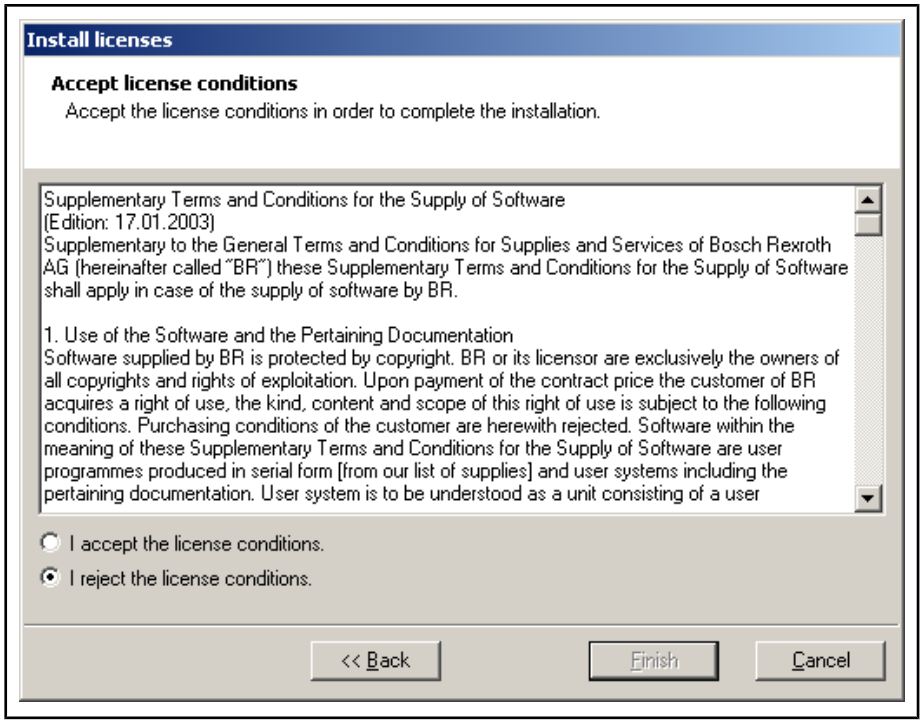


Fig.9-4: Installing a License; Licensing:

Read the license conditions from top to bottom.

If you accept the license conditions, select "I accept the license conditions" and press "Finish".

If you do not accept the license conditions, press "Cancel". No license is installed.

9.3 Removing a License

In order to remove a license select the corresponding license from the list and then confirm with "Remove".

Fig.9-5: Removing licenses

Confirm the safety query by pressing "Yes".

9.4 Display License Properties

In order to display the properties of a software component subject to license conditions select it from the list and then confirm with "Properties...".

The properties dialog box displays a short description of the software components, as well as the material number and the serial number of the license purchased.

Licensing IndraWorks Components

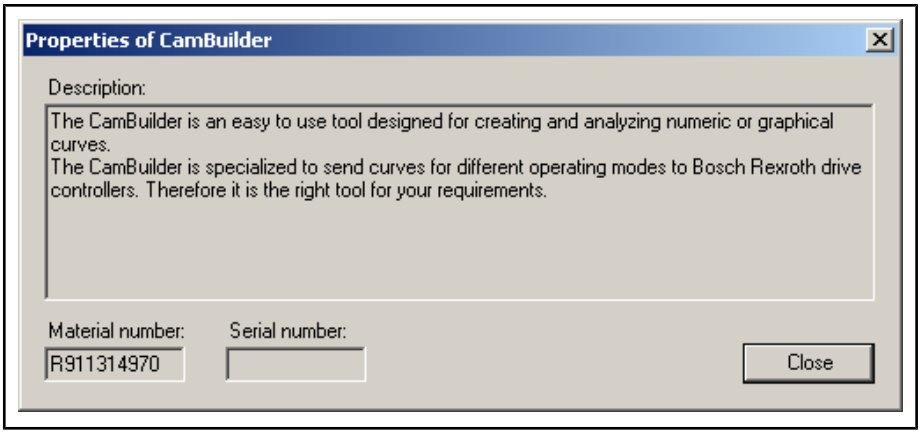


Fig.9-6: Properties of a license

10 Further Information

10.1 Start Settings of Windows XP

10.1.1 General

The following section describes a few settings for optimizing the start of the user interface for production. Some of these settings are impractical during commissioning.

Modifications to the Windows XP system should only be carried out by experienced Windows XP users. You need administrator privileges to change the settings.

10.1.2 Switching off the Windows Logo

Proceed as follows to switch off the Windows logo that appears when the Windows XP operating system starts:

1. In **Start** ▸ **Execute**, enter "msconfig"
   The system configuration program starts.
2. Select tab " BOOT.INI".

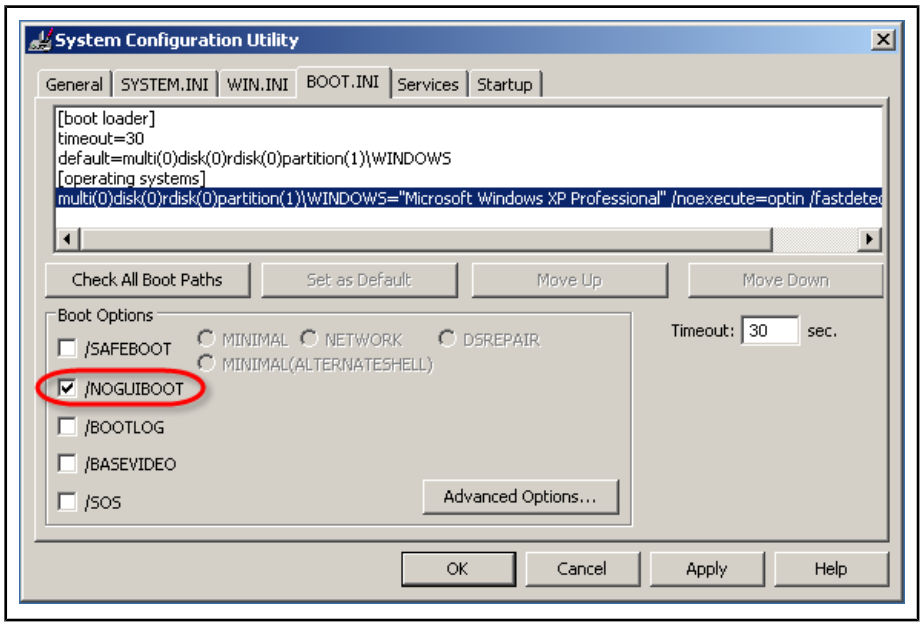


Fig.10-1: System configuration program

3. In group "Start options", select the checkbox "/NOGUIBOOT"
   The Windows logo is now switched off.

10.1.3 Autologin Windows XP

Proceed as follows to start the Windows XP operating system without logging in:

1. In **Start** ▸ **Execute**, enter "control userpasswords2"
   The "User Accounts" dialog box opens.

Further Information

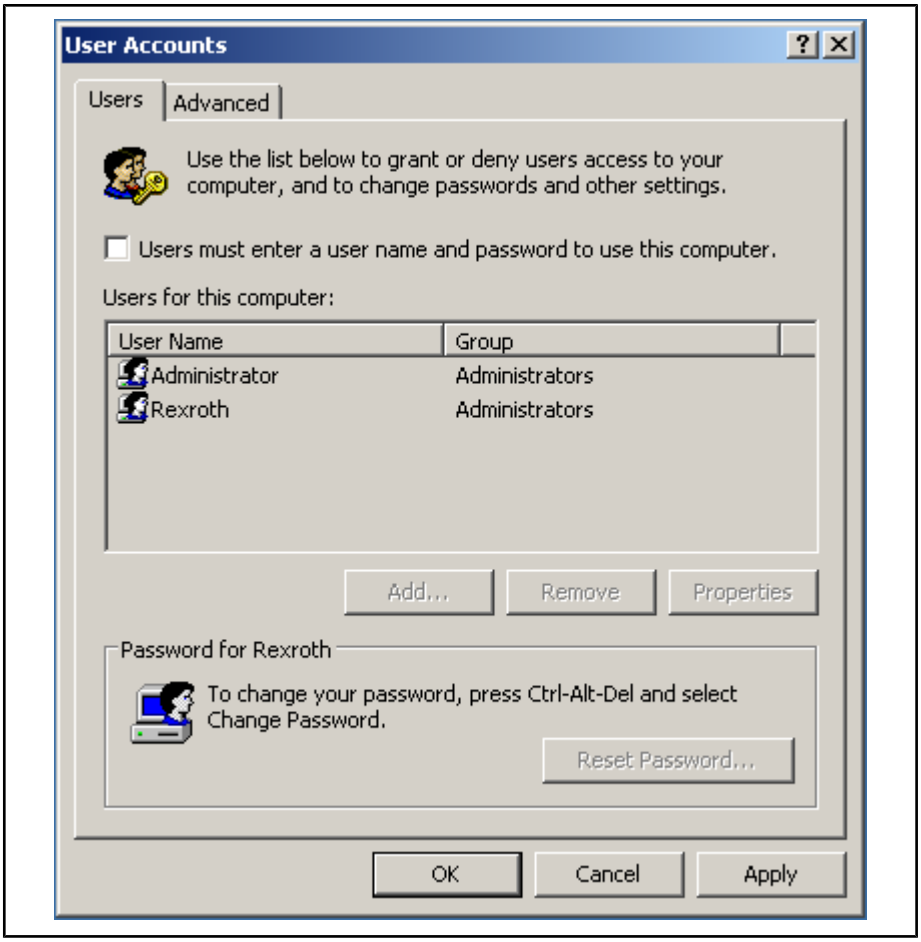


Fig. 10-2: User accounts

2. Select the user, e.g. Rexroth. (Only one user can be selected in the "Users of this computer" list, if the checkbox "User has to enter user name and password" is checked).
3. Uncheck the "User has to enter user name and password" checkbox and exit the "User Accounts" dialog box by pressing <OK>.

   The login box opens.

4. Here, enter the password for the selected user name and, in the second row, confirm the password (e.g. "Rexroth").

   This activates Autologin for Windows XP.

The user name that has been set up logs in automatically the next time that Windows XP is started.

10.1.4 IndraWorks Operation Autostart

IndraWorks Operation is to be started automatically when the PC is started. For this, the start file of IndraWorks Operation has to be transferred to the autostart group. For this, proceed as follows:

1. Start the Registration Editor "Regedit" via **Start ▸ Execute**.
2. In the Registration Editor, go to the path **"HKEY_LOCAL_MACHINE \SOFTWARE\Microsoft\Windows\CurrentVersion\Run"**.

3. Add a new string and use the right mouse button**New ▸ String** with the name "MTX-Operation".
4. Use the right mouse button to click on "MTX-Operation" **Edit** and to open the window "Edit string". Enter "C:\Programme\Rexroth\IndraWorks \DDP.OperationDesktop.exe" into the row "value" (see following illustration).

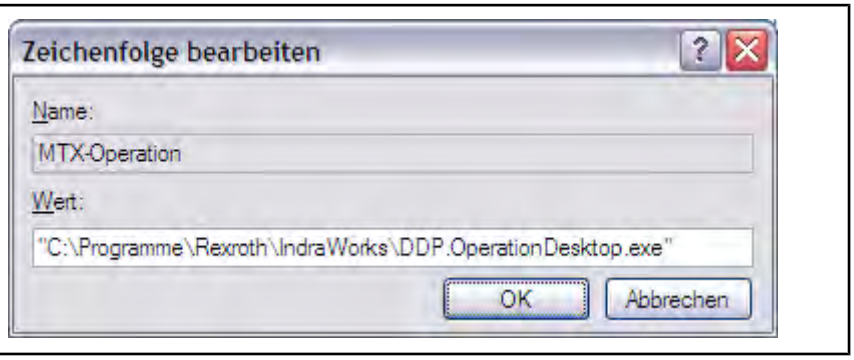


Fig.10-3: Setting autostart

5. Confirm the string with "OK" and close the registration editor.

When Windows XP is restarted now, IndraWorks Operation is started automatically.

10.2 Operation in the Network

To ensure the proper operation of a device in a network, an unambiguous computer name is to be specified for this device.

The dialog to enter the name can be found under **Start ▸ Control Panel ▸ System ▸ Computer Name**

The computer name may not exceed 15 characters and must **comply with the Windows** standard. A network administrator should be responsible for the computer name.

The user management requires an exact specification of the computer name.

10.3 Windows XP User privileges

10.3.1 Introduction

If you are logged into Windows XP with Administrator privileges, the system becomes susceptible to viruses, Trojan horses and other security risks due to the high-level privileges.

The following section describes which settings need to be made on the system to be able to operate the IndraMotion MTX interface with a logged-in user who only has Windows XP **user** privileges.

The following must be carried out by a system administrator.

Further Information

10.3.2 Definition of Terms

The term "user" is used in two ways in Windows XP. Therefore, the following specifications have been made:

User: The term "user" is used for the privileges group in Windows XP's user management. According to Microsoft, users may not carry out any random or intentional modifications to the system. Users can execute certified applications, but not most of the common applications.

XP user: The term "XP user" is used for the actual XP user.

XP: This always means the Windows XP operating system.

10.3.3 Setting up an XP User

Creating a New User

1. Open User management under My Computer using the right mouse button and select **Manage**.

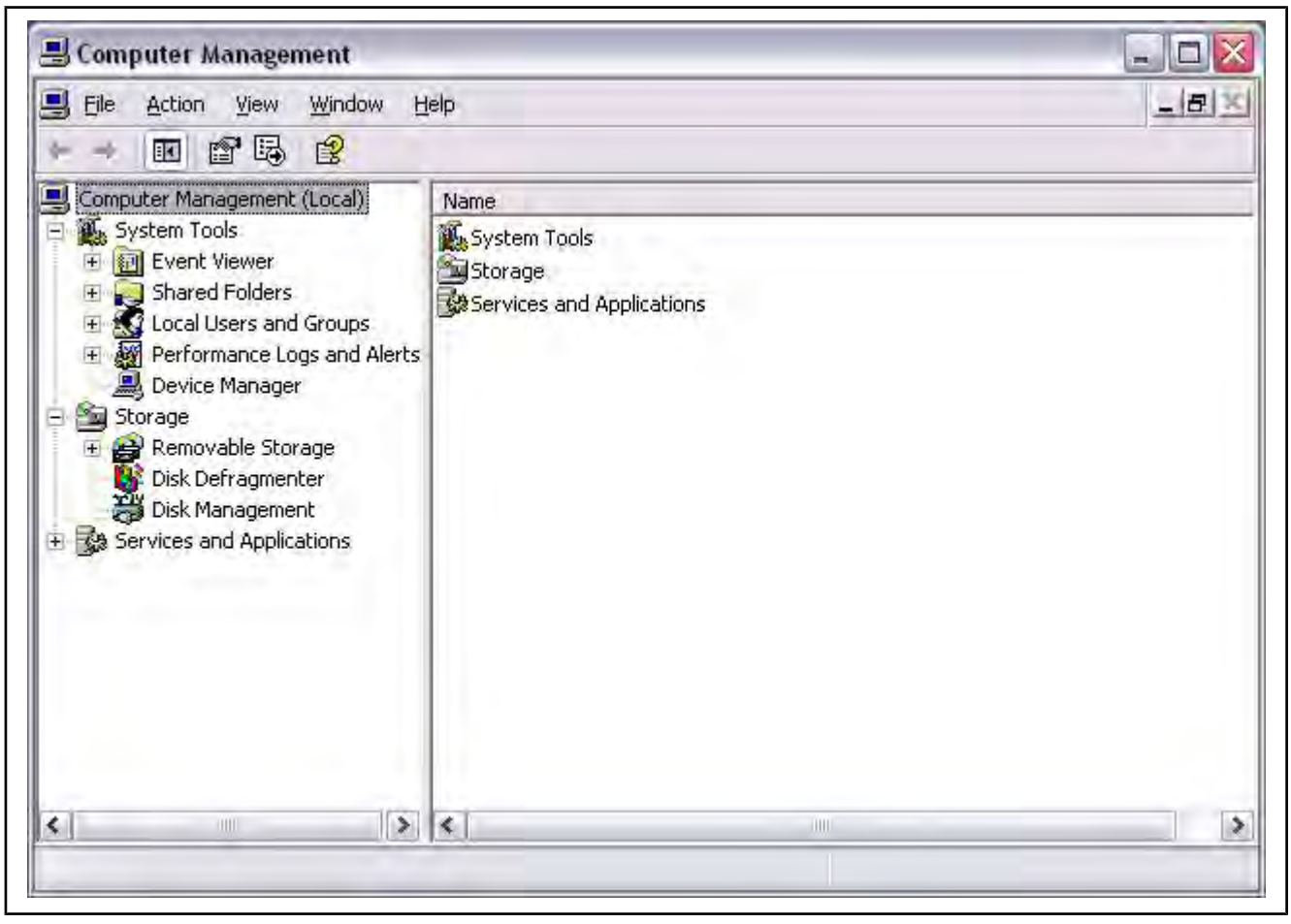


Fig.10-4: XP computer management

Computer management opens.

2. In Computer management, select **Local Users and Groups ▸ Users**
3. Using the right mouse button, select **New User ...** or select an existing user in the right window and, with the right mouse button, select **Properties**.

   The User Properties window opens.

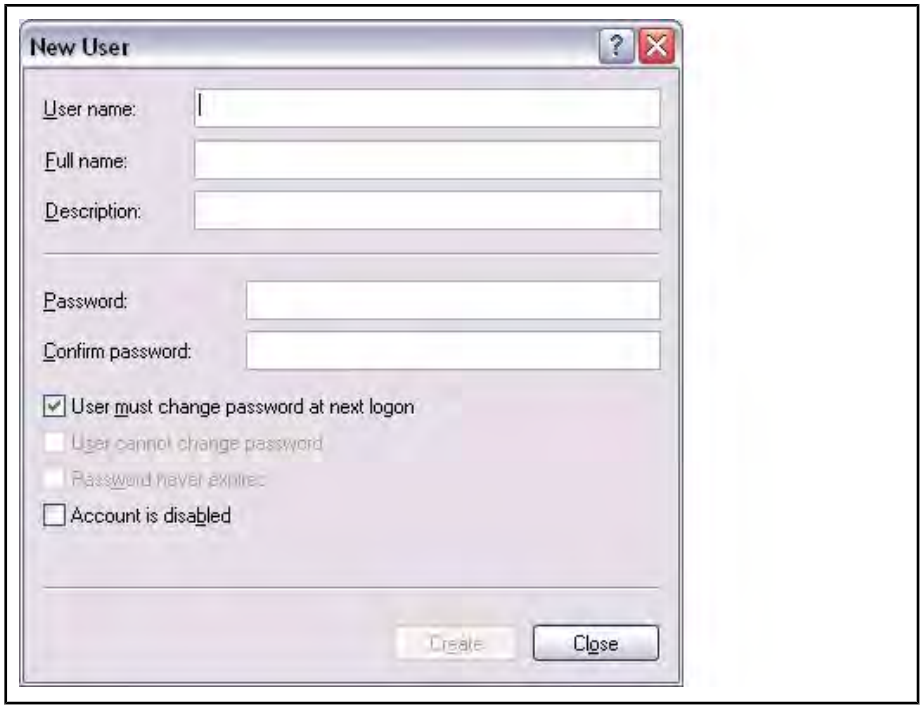


Fig.10-5: Creating a new XP user

4. Enter the basic data for the new XP user. At least a user name and a password must be entered. Press the <Create> button to transfer the data.

   A new Windows XP user has now been created.

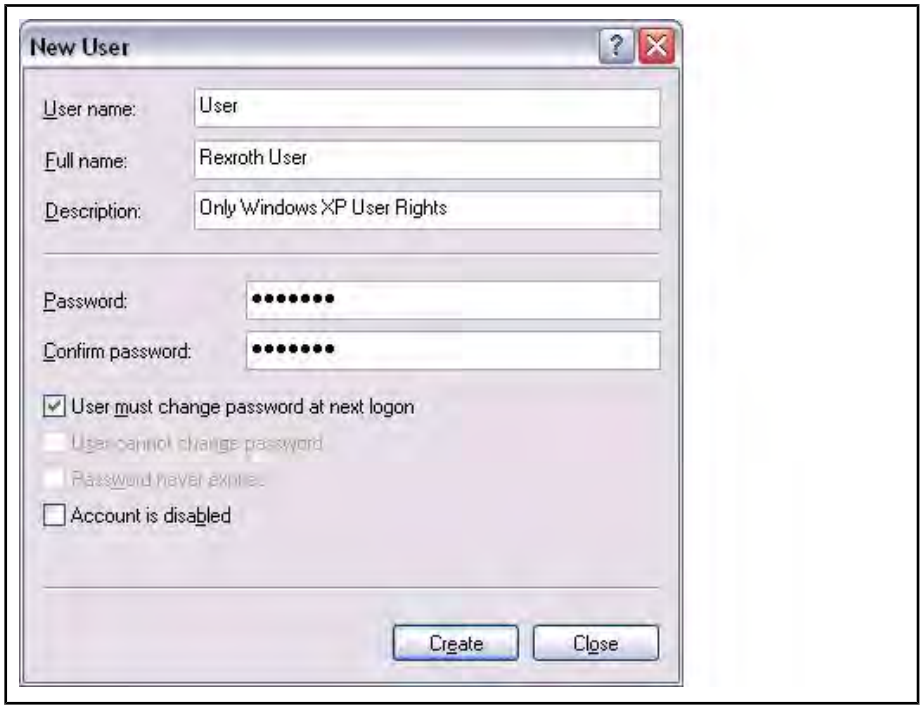


Fig.10-6: Filled-in XP user dialog box

Checking/changing the privileges of an existing XP user.

1. Select an existing user account and, using the **right mouse button ▸ select Properties**.

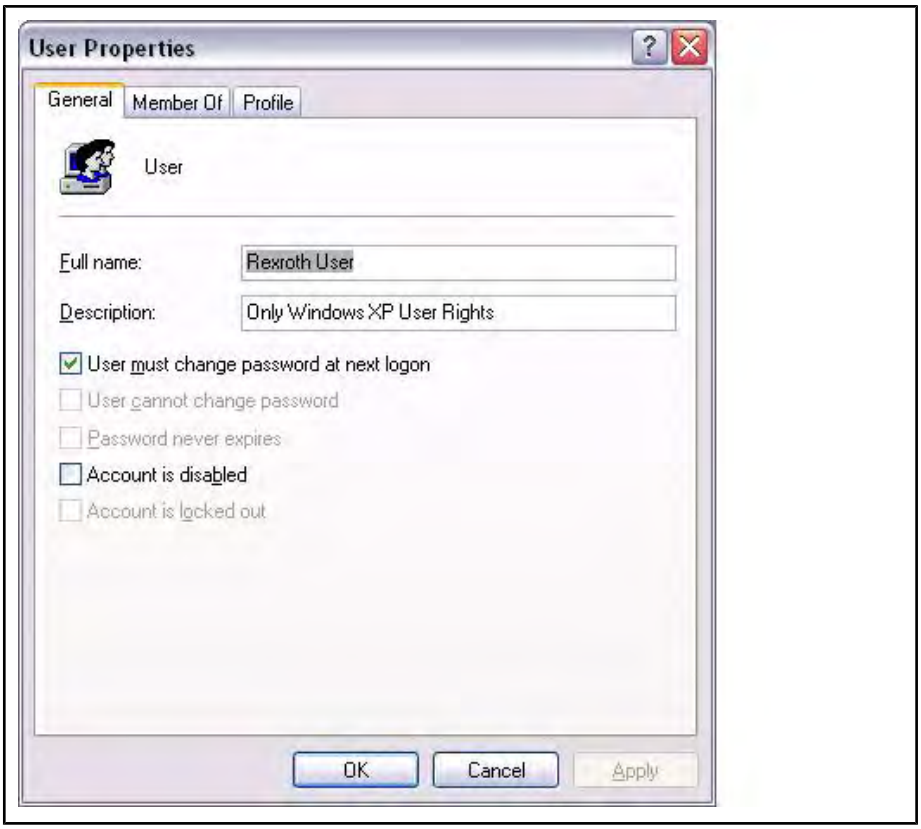


Fig.10-7: Properties dialog box for XP users

Tab "Membership" is used to view/reassign the XP user group.

2. Check/change the group membership of the selected XP user. The XP user may have only user privileges! The <Add>/<Delete> buttons can be used to add or delete XP user groups. When <Advanced> is pressed in the Add dialog box, the existing user groups are displayed by pressing the <Search> button. Windows XP group "User" must be selected here. The XP user group is allocated by pressing <OK>.

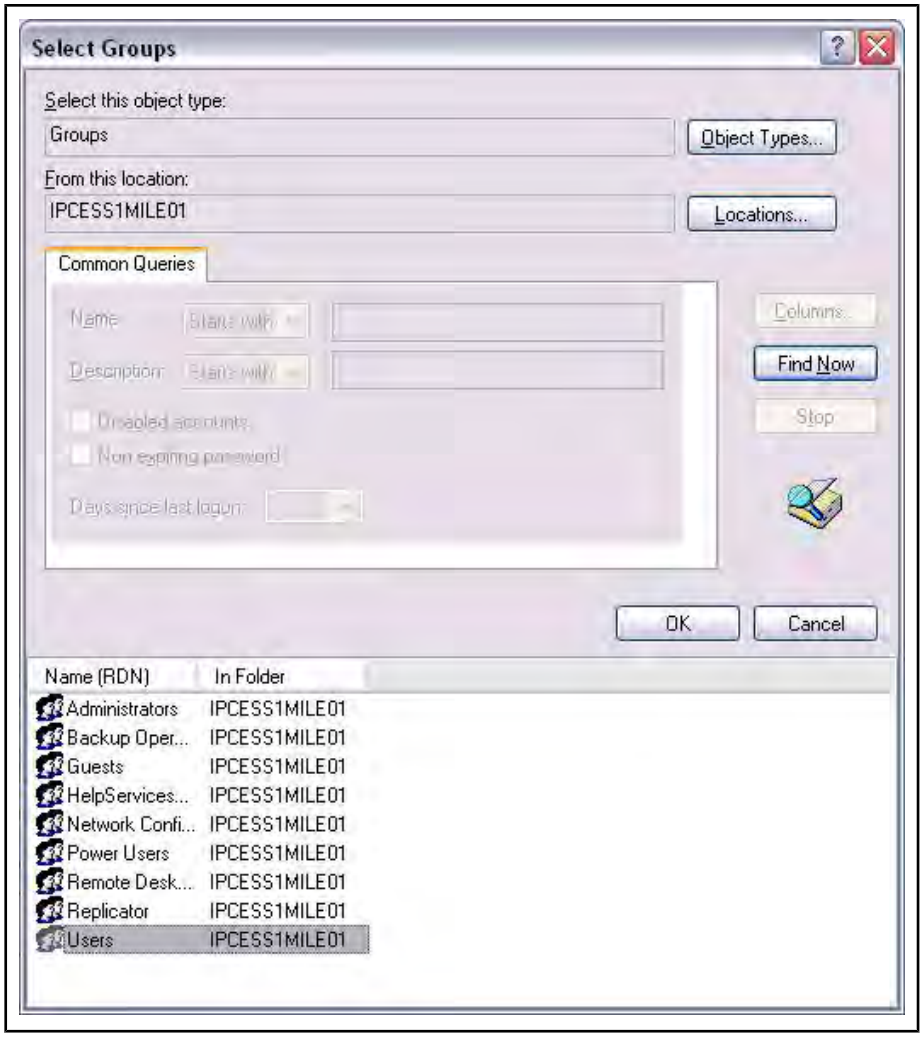


Fig.10-8: Selecting XP user groups

☞ Additional group privileges should always be deleted

The XP user has now been created.

Repeat the procedure if you want to create additional users. Otherwise, exit User management.

10.3.4 Enabling Required Privileges

In order to be able to use the user interface, certain directories/files must be enabled for the user. The user interface stores data that are required to properly operate the interface in these directories/files. The user must have full access to the directories/files.

☞ If the directories have subdirectories, full access must be provided for these also.

The following directories must be enabled:

- project directory (any directory for the project utilized by the user)
- user data directory ("<installation path>\Indraworks\User")

- mount drives. The drives mounted for the control must have full access. According to the specifications, the mount drive is located at <C:\mnt> after installation.
- Indralogic data directory ("<installation path>\Indraworks\IndraLogic")
- global data directory ("C:\Documents and Settings\All Users\Application Data\Rexroth").
- gateway directory. ("<Windows>\Gateway Files").

The following files must have full access:

- <Windows>\CrypKey.ini
- <Windows>\dziplog.txt
- <installation path>: path that was selected for installation (default path: C:\Program Files\Rexroth)
- <Windows>: path for Windows XP installation (default path: C:\Windows)

☞ Check whether the privileges have also been allocated in all the substructures.

10.3.5 Enabling Files/Directories

1. Select the path to be enabled in Windows XP Explorer. Using the <right mouse button>, select **Enablement and Security**. Select the "Security" tab. In the "Groups and User Names" window, select the "User" group or the created XP user. If the group/user does not exist, it can be added by pressing <Add>.

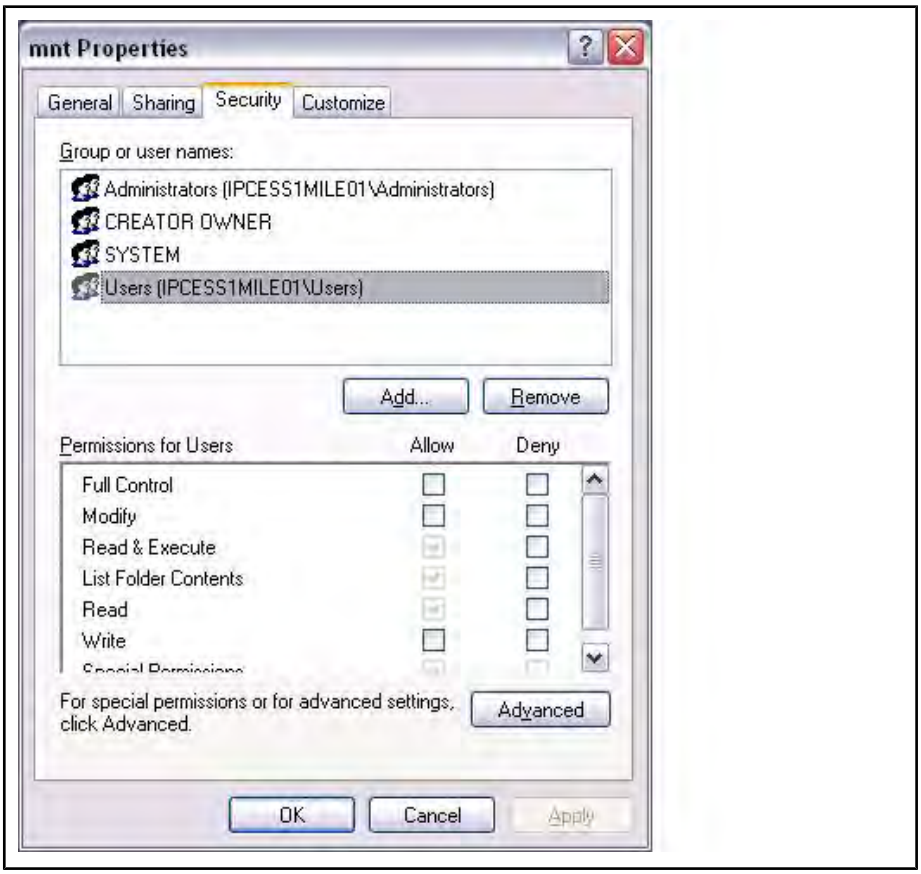


Fig. 10-9: Displaying privileges

2. In the "Privileges" window, set "Allow full access" for the user. The modified privileges can be allocated by pressing the <Ok> or <Apply> button.

   The group/user now has full access.

☞ Carry out this procedure for all directories/files to be enabled.

10.3.6 Tips and Additional Notes

After you have created a project under an XP user in the <default path> and you now try to open this project under another XP user (user privileges only), you have no access to it. In this case, a shared project directory should be created. All users should have full access to the project directory.

☞ After the interface crashes or hangs, programs that are still open cannot be exited in the Task Manager (no authorization). The operating system must be quit and restarted. When the operating system is restarted, the control is also restarted . When you want to restart, always wait until the workpiece has been completed.

10.4 Version Display

10.4.1 Calling the Version Display

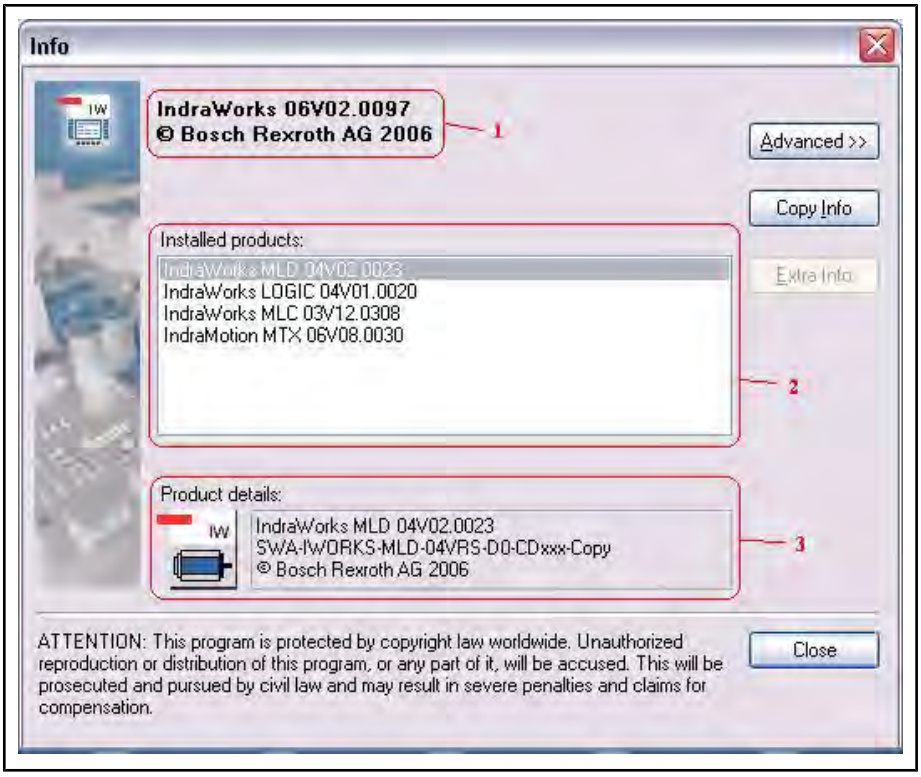
The Version display (a.k.a. info dialog box) displays information about the currently installed software version.

The info dialog box can be called only if the menu bar is active. The menu bar is activated/deactivated using <ALT+M>. When the menu bar is active, the Version display can be called using **Help ▸ Info...**.

10.4.2 Showing the Version Display

When the info dialog box is opened, information about the installed systems in the interface is displayed.

Further Information



1 Suite version of the interface
2 Installed systems
3 Version information for the system or component selected under "2"

Fig.10-10: Info dialog box with display of the installed systems

The <Advanced> button is used to also display the components (in field "2") of the installed interface and their version information.

Press button <Copy info> to read out the information from all installed files and to copy this to Notepad. Then this information can be saved to a file of your choosing. <Copy info> is used for support if problems occur in the interface.

☞ The "Copy info" procedure may take several minutes (depending on the installed systems). During this time, it is not possible to cancel the copying procedure or to work elsewhere.

Button <Extra info> is not available for every entry in field "2". <Extra info> can be used to provide additional information for a system or a component.

10.4.3 Version Information for MTX System

The information for the MTX system consists of at least the following parts:

1. IndraMotion MTX (system version information)
2. MTX firmware (version information about the firmware of the currently selected control)
3. MTX logical device (version information about the communication interface of the MTX)
4. IW-MTX (version information about the user software (HMI))

☞ If a problem occurs, you should have the version information for this system / these components. Support can be provided only if you have this information.

It may also be necessary to read out the version information of other components.

10.4.4 Version Information of MTX Interface Components

If the <Extra info> button is pressed when the IW-MTX is selected, a display appears indicating which software options (licenses) have been enabled for the MTX system.

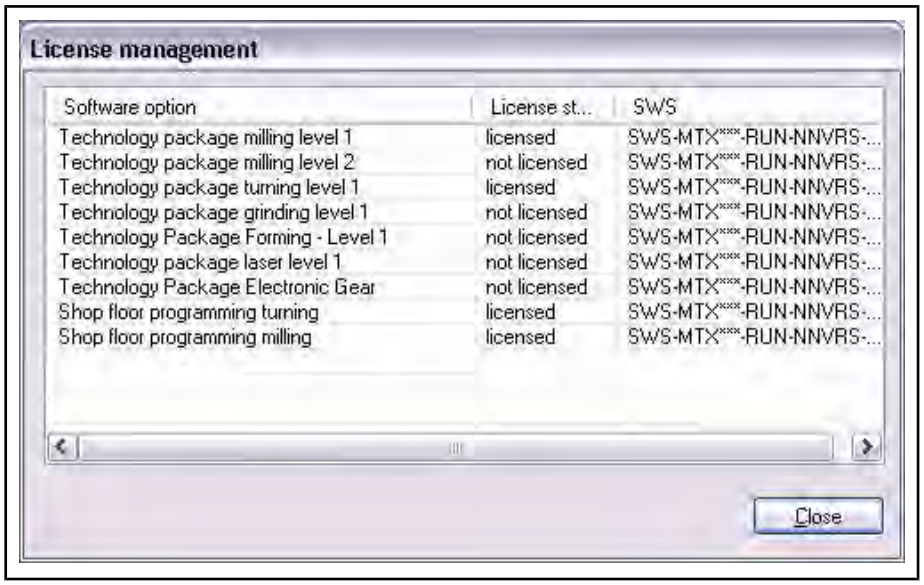


Fig. 10-11: Display of enabled software options

10.4.5 Version Information of MTX NC Kernel Components

The version information displays information about the MTX NC kernel. No version information is shown for this component in the info dialog box. Version information about the active control is displayed only after the <Extra info> button is pressed.

<Extra info> is available only in IndraWorks Desktop. No device is selected in IndraWorks Engineering. Information about the control (e.g. firmware) is displayed here using the corresponding node in the tree.

Tab "Firmware" is used to display the firmware in the NC kernel. Firmware information about all main and subsidiary components is displayed.

Further Information

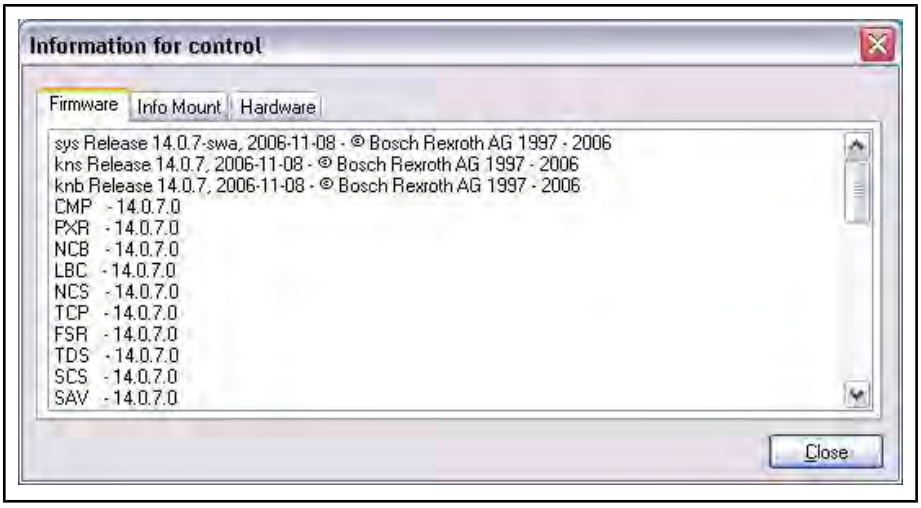


Fig.10-12: Firmware display of all components in the MTX NC kernel

Tab "Info mount" is used to display information about the MTX kernel file system. Here, you can see which drives are mounted.

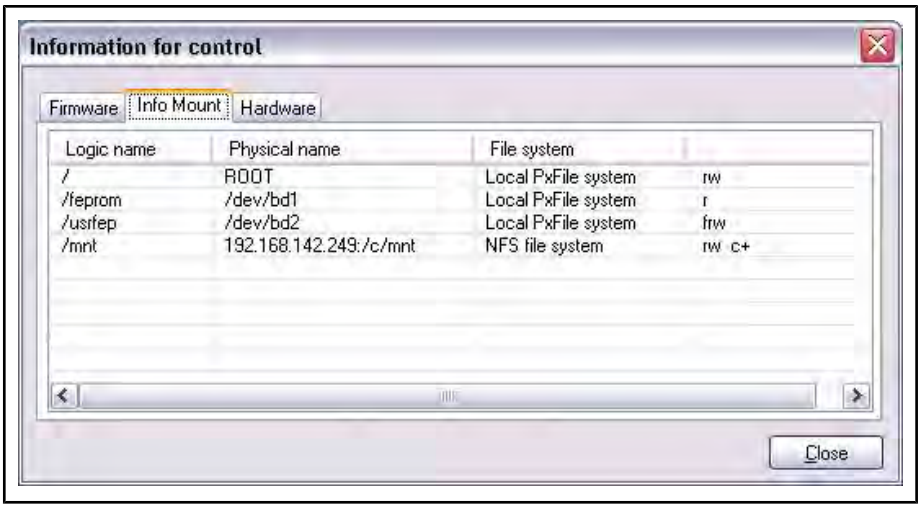


Fig.10-13: Display of the mounted drives in the MTX control

The logical name (the name that is shown in the Navigator tree), the physical name (the name that is used to physically address the drive), the file system and the file access privileges for this area are displayed for every "drive".

The following file access privileges are displayed:

- rw: read and write access
- r: read access only
- frw: read and write access to FEPROM. Here, writing is possible only by copying in the Navigator. It is not possible to directly edit files here.
- c+: the drive is cached

☞ Mount drives with the NTFS file system are usually not located in the NC kernel, but rather on a PC/BTV.

Tab <Hardware> is used to display information about the hardware.

Information about the hardware includes:

- Designation
- Serial number

- Hardware version

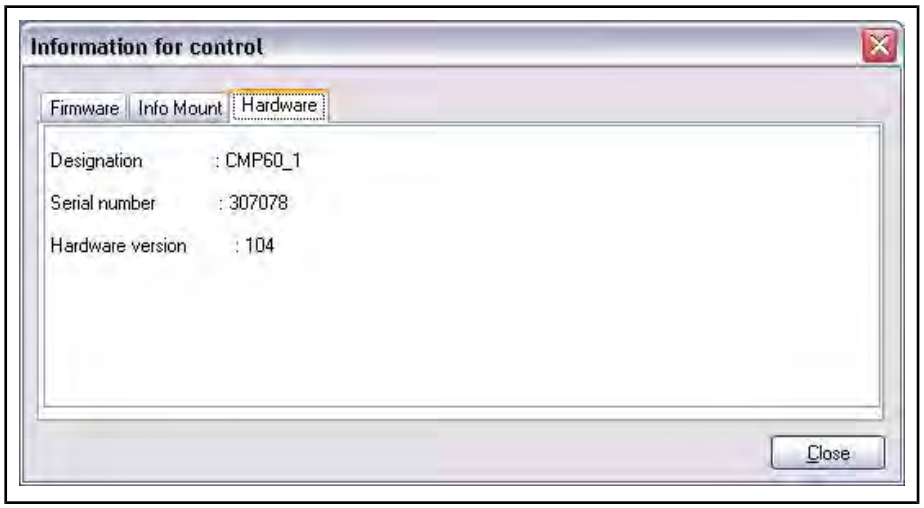


Fig.10-14: Information about the hardware

10.4.6 Version Information about LDX Component

Entry "MTX Logical Device" (LDX) provides information about the communication interface.

Fig.10-15: Display of information for the MTX logical device

10.5 Protection from Access by External PCs, Protection against Viruses

10.5.1 Operating Virus Scanners in Conjunction with the Bosch Rexroth MTX Control System

General

☞ All modifications have to be made by specialists.

In general, virus scanners can be certified to be compatible with the Bosch Rexroth MTX control system. In tests using virus scanners, no side effects on the functions of the systems could be determined. This applies only when the proposals by Bosch Rexroth regarding configuration are taken into account.

☞ Before being released, the interface software is tested in conjunction with a current virus scanner. However, it is not possible to test every virus scanner available on the market. The use of later versions as well as of new virus definition files lies within the responsibility of the operator. In addition, the operator should test the compatibility of later versions before these are widely distributed within the company.

Performance of the System as a Whole

Using virus scanner software to scan files/directories necessarily leads to drops in performance; depending on the configuration of the virus scanner, these can be significant. Therefore, we strongly recommend taking into account Bosch Rexroth's proposals for configuring a virus scanner.

Proposals for Configuring Virus Scanner Software

Manual Scans

From the point of view of Bosch Rexroth, no settings need to be made here. The end user can select the folder required for the scan according to his requirements.

If possible, a manual scan should check all the data on the hard disk. If you want to work with the interface during a manual scan, significant decreases in performance can occur. If possible, always carry out manual scans at times when work is not being done on the PC.

Real-time Scan

The settings described below are strongly recommended for error-free and secure operation of Bosch Rexroth products with as few performance drops as possible.

Set **File Scan** to "modified (scan on create)" if the virus scanner provides this function ("Incoming" for TrendMicro). This setting permits the best performance for the system.

File/folder exclusions Certain virus scanners allow you to exclude files/directories from a real-time scan in order to increase performance. Bosch Rexroth directories to which this can be applied:

- "C:\Program Files\Rexroth" (Bosch Rexroth installation directory)
- "C:\Program Files\Shared Files\Rexroth" (Bosch Rexroth shared directory)
- IndraWorks project directories

- Drives mounted on the local hard disk

Startup Scans

It is recommended that no startup scans are executed. The disadvantage of these is that they are activated each time that the operator panel is started and when a different user logs in; depending on the directories selected for scanning, this can noticeably slow down operation.

Scheduled Scans

Bosch Rexroth recommends using scheduled scans. However, their use and application interval depend on the production process. It is recommended that the scans be carried out during breaks or when the work shift changes. The data that are included in the scanning procedure are to be divided up in such a manner that the entire hard disk can be scanned within a week. This minimizes the times for the individual scans.

Additional Settings:

- If the software settings permit it, "CPU Utilization" should be set to "Low" in order to ensure that the virus scanner has as little influence on Bosch Rexroth applications in terms of performance.
- It may happen that the virus scanner generates many entries in the event log if, for example, access to files is prevented during scans. Therefore, it is recommended that you select "Overwrite events (if required)" for the "Application log" (under "Log settings") for continuing logging in the events display of the operating system.

10.5.2 Operating a Firewall in Conjunction with the Bosch Rexroth MTX Control System

General

☞ All modifications have to be made by specialists.

In general, a firewall can be used with the Bosch Rexroth control systems. The firewall that comes with the operating system was used in the test. Observe the recommendations of Bosch Rexroth.

Performance of the System as a Whole

No performance limitations worth mentioning have been determined when a firewall is used.

Configuration Proposals

Use with Plug-in Control

In the plug-in controls (e.g. CMP60, CMP40), communication with the control takes place via the network driver of the control. In this case, the control behaves like a network card and can be configured in the same way as any other network card.

The firewall should be completely deactivated for the control network card.

Software Enablements

Deactivating the Firewall during Installation

In the case of the Windows XP firewall, deactivation already occurs during installation.

This applies to the following programs:

- <installation path>\DDP.EngineeringDesktop.exe

Further Information

- <installation path>\DDP.PanelService.exe
- <installation path>\DDP.MKeyManager.exe
- <installation path>\DDP.OperationDesktop.exe
- <installation path>\IWLocalSrv.exe
- <installation path>\PDA.Server.exe
- <installation path>\Drive\Offline\DriveServer_MPB03vrs.exe
- <installation path>\Drive\Offline\DriveServer_MPD03vrs.exe
- <installation path>\Drive\Offline\DriveServer_MPH03vrs.exe
- <installation path>\Drive\Offline\DriveServer_MPB04vrs.exe
- <installation path>\Drive\Offline\DriveServer_MPD04vrs.exe
- <installation path>\Drive\Offline\DriveServer_MPH04vrs.exe
- <installation path>\Drive\Offline\DriveServer_MPB05vrs.exe
- <installation path>\Drive\Offline\DriveServer_MPD05vrs.exe
- <installation path>\Drive\Offline\DriveServer_MPH05vrs.exe
- <Windows path>\System32\Gateway.exe
- <Shared Files>\\Rexroth\IwScp\SCPServer.exe
- <installation path>\<Winstudio path>\bin\Studio Manager.exe

The deactivation also applies to the following port:

- Name: DCOM; port : 135; protocol : TCP

Additional Enablements

The following ports should be enabled in addition. However, they depend on the settings made in IndraWorks.

- Name: Communication to control system; default port: 10099; protocol: TCP
- Name: Indralogic Gateway; default port: 1200; protocol: TCP

Additional enablements have to be made for access via IRemote / Remote engineering. Please observe the notes in the corresponding sections.

11 Service and Support

Our service helpdesk at out headquarters in Lohr, Germany, will assist you with all kinds of enquiries. Out of helpdesk hours please contact our German service department directly.

	Helpdesk	Service Hotline Germany	Service Hotline Worldwide
Time [1]	Mo-Fr 7:00 am - 6:00 pm CET	Mo-Fr 6:00 pm - 7:00 am CET Sa-Su 0:00 am - 12:00 pm CET	Outwith Germany please contact our sales/service office in your area first. For hotline numbers refer to the sales office addresses on the Internet.
Phone	+49 (0) 9352 40 50 60	+49 (0) 171 333 88 26 or +49 (0) 172 660 04 06	
Fax	+49 (0) 9352 40 49 41	–	
e-mail	service.svc@boschrexroth.de	–	
Internet	http://www.boschrexroth.com You will also find additional notes regarding service, maintenance (e.g. delivery addresses) and training.		

1) Central European Time (CET)

Preparing Information

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

- detailed description of the fault and the circumstances
- information on the type plate of the affected products, especially type codes and serial numbers
- your phone, fax numbers and e-mail address so we can contact you in case of questions.

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Notes

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Bosch Group

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