Visualization/HMI

MADAP Studio
Installation Manual

Edition

101

Rexroth

Bosch Group

Visualization/HMI

MADAP Studio
Installation Manual

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Discretionary charge   6.– €

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1   Safety Instructions

Before you start working with the software, we recommend that you thoroughly familiarize yourself with the contents of this manual. Keep this manual in a place where it is always accessible to all users.

1.1   Intended use

This instruction manual presents a comprehensive set of instructions and information required for the standard operation of the described products.

The products described hereunder

● were developed, manufactured, tested and documented in accordance with the relevant safety standards. In standard operation, and provided that the specifications and safety instructions relating to the project phase, installation and correct operation of the product are followed, there should arise no risk of danger to personnel or property.

● are certified to be in full compliance with the requirements of
   ● the EMC Directives (89/336/EEC, 93/68/EEC and 93/44/EEC)
   ● the Low-Voltage Directive (73/23/EEC)
   ● the harmonized standards EN 50081-2 and EN 50082-2

● are designed for operation in an industrial environment (Class A emissions). The following restrictions apply:
   ● No direct connection to the public low-voltage power supply is permitted.
   ● Connection to the medium and/or high-voltage system must be provided via transformer.

The following applies for application within a personal residence, in business areas, on retail premises or in a small-industry setting:

   ● Installation in a control cabinet or housing with high shield attenuation.
   ● Cables that exit the screened area must be provided with filtering or screening measures.
   ● The user will be required to obtain a single operating license issued by the appropriate national authority or approval body. In Germany, this is the Federal Institute for Posts and Telecommunications, and/or its local branch offices.

☞ **This is a Class A device. In a residential area, this device may cause radio interference. In such case, the user may be required to introduce suitable countermeasures, and to bear the cost of the same.**

Proper transport, handling and storage, placement and installation of the product are indispensable prerequisites for its subsequent flawless service and safe operation.

1.2   Qualified personnel

This instruction manual is designed for specially trained personnel. The relevant requirements are based on the job specifications as outlined by the ZVEI and VDMA professional associations in Germany. Please refer to the following German-Language publication:
Weiterbildung in der Automatisierungstechnik
Publishers: ZVEI and VDMA Maschinenbau Verlag
Postfach 71 08 64
60498 Frankfurt/Germany

This instruction manual is specifically designed for software installers. They require skills in handling PCs and communication links.

Interventions in the hardware and software of our products not described in this instruction manual may only be performed by our skilled personnel.

Unqualified interventions in the hardware or software or non-compliance with the warnings listed in this instruction manual or indicated on the product may result in serious personal injury or damage to property.

Installation and maintenance of the products described hereunder is the exclusive domain of trained electricians as per IEV 826-09-01 (modified) who are familiar with the contents of this manual.

Trained electricians are persons of whom the following is true:

● They are capable, due to their professional training, skills and expertise, and based upon their knowledge of and familiarity with applicable technical standards, of assessing the work to be carried out, and of recognizing possible dangers.

● They possess, subsequent to several years' experience in a comparable field of endeavour, a level of knowledge and skills that may be deemed commensurate with that attainable in the course of a formal professional education.

With regard to the foregoing, please read the information about our comprehensive training program.

You find the latest information on training courses, teachware and training systems on our website http://www.boschrexroth.de. The professional staff at our Didactic Center Erbach will be pleased to provide detailed information. You may contact the center by telephone at (+49) 6062 78-600.

1.3   Safety markings on components

DANGER! High voltage!

DANGER! Corrosive battery acid!

CAUTION! Electrostatically sensitive devices (ESD)!

Disconnect mains power before opening!

Lug for connecting PE conductor only!

Functional earthing or low-noise earth only!

Screened conductor only!

1.4   Safety instructions in this manual

DANGEROUS ELECTRICAL VOLTAGE
This symbol warns of the presence of a **dangerous electrical voltage**. Insufficient of lacking compliance with this warning can result in **personal injury.**

DANGER
This symbol is used wherever insufficient or lacking observance of this instruction can result in **personal injury.**

CAUTION
This symbol is used wherever insufficient or lacking observance of instructions can result in **damage to equipment or data files.**

☞   This symbol is used to alert the user to an item of special interest.

★   This asterisk symbol indicates that the manual is describing an activity which the user will be required to perform.

1.5　　Safety instructions for the described product

DANGER
Fatal injury hazard through ineffective Emergency-STOP devices!
Emergency-STOP safety devices must remain effective and accessible during all operating modes of the system. The release of functional locks imposed by Emergency-STOP devices must never be allowed to cause an uncontrolled system restart! Before restoring power to the system, test the Emergency-STOP sequence!

DANGER
Danger to persons and equipment!
Test every new program before operating the system!

DANGER
Retrofits or modifications may interfere with the safety of the products described hereunder!
The consequences may be severe personal injury or damage to equipment or the environment. Therefore, any system retrofitting or modification utilizing equipment components from other manufacturers will require express approval by Bosch Rexroth.

DANGEROUS ELECTRICAL VOLTAGE
Unless described otherwise, maintenance procedures must always be carried out only while the system is isolated from the power supply. During this process, the system must be blocked to prevent an unauthorized or inadvertent restart.

If measuring or testing procedures must be carried out on the active system, these must be carried out by trained electricians.

1.6   Documentation, software release and trademarks

Relevant documentation

The present manual provides the user with comprehensive information about installation of the MADAP Studio software package.

Overview of available manuals:

Manuals	Language	Order no.
Visualization/HMI, Driver Configuration for MADAP Studio and Win Studio	GB	1070 072 226
MADAP Studio for Programmers and Project Designers	GB	1070 072 168
MADAP Studio for System or Machine Operators	GB	1070 072 167
PCL, Programming and Operation	GB	1070 072 189

☞ **In this manual the floppy disk drive always uses drive letter A:, and the hard disk drive always uses drive letter C:.**

Special keys or key combinations are shown enclosed in pointed brackets:
- Named keys: e.g., <Enter>, <PgUp>, <Del>
- Key combinations (pressed simultaneously): e.g., <Ctrl> + <PgUp>

Release

☞ **The descriptive information contained in this manual applies to:
Software version: MADAP Studio V1.0 and later**

Trademarks

All trademarks referring to software that is installed on Bosch Rexroth products when shipped from the factory represent the property of their respective owners.

At the time of shipment from the factory, all installed software is protected by copyright. Software may therefore be duplicated only with the prior permission of the respective manufacturer or copyright owner.

MS-DOS® and Windows™ are registered trademarks of Microsoft Corporation.

2　　　Introduction

MADAP Studio is a visualisation software used for controlling, operating and diagnosing machines and systems with sequence controls. This software also includes the functions of a development tool. These different functions can be activated with appropriate licences.

Win Studio is a separate development tool for creating HMI applications (human machine interface).

This manual describes the installation of the MADAP Studio software. Information on installing Win Studio can be found in the "Win Studio / Indusoft Web Studio Technical Reference Manual, No. 1070 072 272".

2.1　　　System requirements

MADAP Studio runs under WindowsNT (from Service Pack 4), Version 4.0 or higher. The minimum specification is a Pentium processor with 166 MHz and at least 64 MB RAM.

Internet Explorer V4.01 or later is required on the PC to use MADAP Studio.

Notes:

3   Step by Step Installation

☞   **To install MADAP Studio, you must have administration rights. Install MADAP Studio on the hard disk 'C'.**

The complete software package is included in the MADAP Studio installation. This includes the run-time version as well as development tools. The functions activated on installation depend on the license you have been provided.
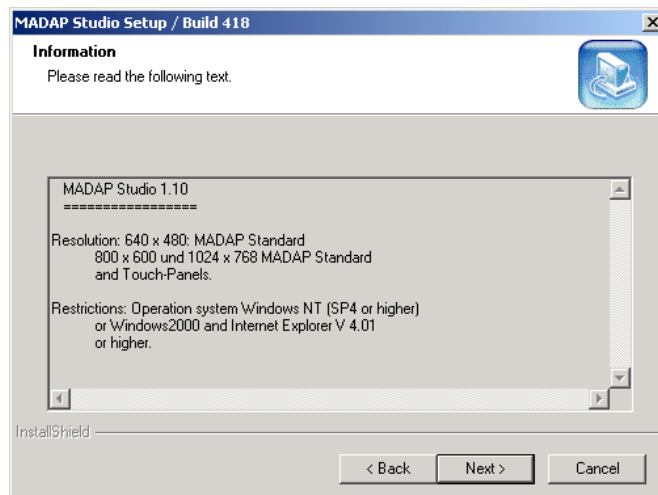
3.1   Installation procedure

★   Close all programmes and applications before starting the installation procedure.

★   Start installation by double-clicking on   Setup.exe in the folder 'Disk1' on the CD.

Installation on the C drive: a tree list entitled MMIMADAP is created.
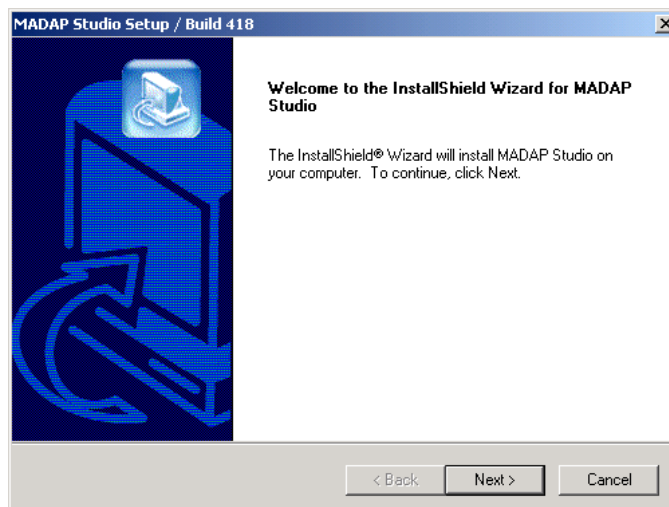
★   Press <Next> to go to the next window.

★   Press <Next> to go to the next window.
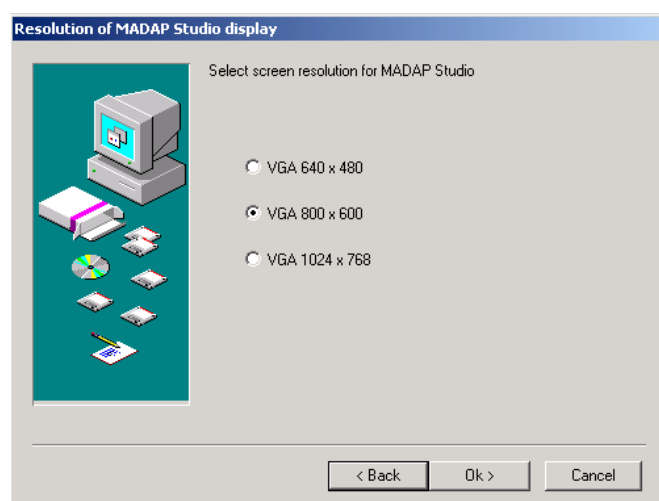
★   Select the display resolution appropriate for the display you are using (e.g. touch panel). When installing a newer MADAP version, the resolution is preset to the value selected for the last installation.

      Touch panel operation:
      To improve the use of screen presentations with a scroll bar, the width of the bar can be adjusted in the System Settings option. 16 is set as default, a width of between 32 and 40 is recommended for touch panel operation.

☞   **A change to the scroll bar width affects the entire system and also applies to other programmes.**

★   Press the <OK> key to go to the next window.

The next step in the procedure depends on whether there is a version of MADAP Studio already installed on the PC. If MADAP Studio has not yet been installed on the PC, you can ignore the following inquiries for deinstalling an existing version.

1. If **MADAP Version 1.00 (possibly incl. service pack)** has been installed, a window opens querying whether you want to deinstall the existing MADAP version.

WARNING
If you want to deinstall an older version, you can select whether you want to retain existing customer-specific files.
You should retain these files with a version update!

★ Select whether you want to deinstall the current version – and if yes whether customer documents (customer-specific data) should be kept or not.

☞ **Check the 'ReadHMI.PDF' file to find out which files contain customer-specific data.**

2. If **MADAP Version 1.10 or higher** was installed, the following deinstallation window will appear.
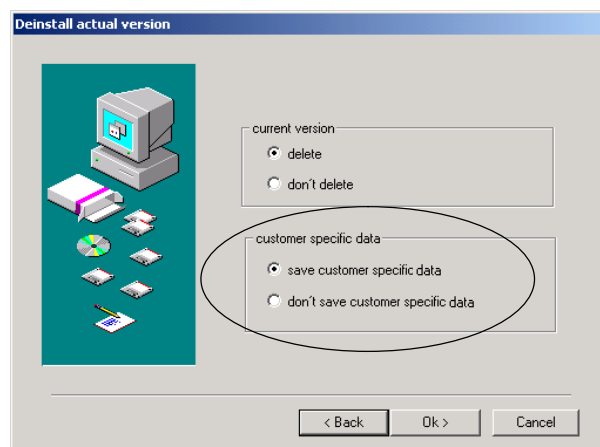
★ Select whether you want to deinstall the current version – and if yes whether customer documents (customer-specific data) should be kept or not.

WARNING
If you want to deinstall an older version, you can select whether you want to retain existing customer-specific files.
You should retain these files with a version update!

☞ **Check the 'ReadHMI.PDF' file to find out which files contain customer-specific data.**

★ Press <Next> to continue.

The following prompt appears:

Auto-startup means that after power-up of the control terminal or PC MADAP Studio is started automatically. Thus, users without administrator rights only can use MADAP Studio on this control terminal or PC. They do not have the possibility to leave this application.

☞ **To install the MADAP auto-startup, a user with administrator rights must be created with the name 'MMIMADAP' and the password 'MMIMADAP' (both in large case).**

☞ **If a you would like to set up a connection to the rho4 robot control, auto-startup has to be installed.**

★ Press 'Yes' to install the auto-startup.

If you have pressed 'Yes', a prompt appears with the question whether startup of MADAP Studio should be coordinated with Win Panel.

★ Press 'Yes' to install the automatic start (auto-startup) for MADAP Studio and Win Panel (together), i. e. the automatic start of MADAP Studio is coordinated with Win Panel.

★ Press 'No' to install the automatic start for MADAP Studio (alone).

The following information appears if you have pressed 'No'.
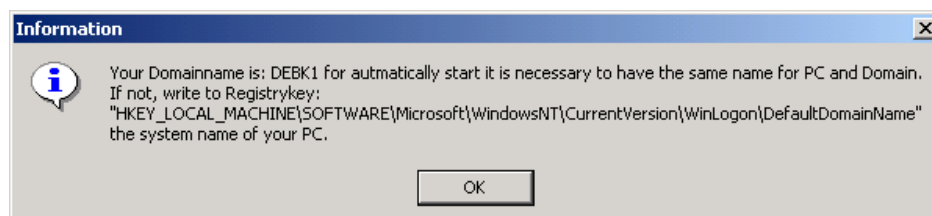
★ If domain name and computer name correspond, press 'OK'. If not, enter the system name of the PC in the path in the 'Information' window.

Programme examples and modules for the controllers

The programme modules supplied as standard for the supported controls are contained in the 'DiskZ_SPS' directory on the installation CD-ROM.

☞ **Ensure that the correct programme modules in the DiskZ_SPS directory are used in controls that communicate with MADAP Studio. Consult the programming manuals or operation lists for the corresponding controls, if necessary.**

3.2   Select type of communication

As MADAP Studio can use different types of communication to exchange data between the PC control panel and the connected PLC, the first step is to select the type of communication required.

The templates for driver worksheets can be found in the directory C:\MMIMADAP\MMICOMM. These are copied into the target directory C:\MMIMADAP\KONFIG and configured following the steps below.

Available:
- BUEP: 'Point-to-point' connection with the Bosch BUEP 19E transfer protocol for serial communication
- TCP/IP: Ethernet connection with the TCP/IP protocol

☞ **The 'Panel Configurator' module in the 'Mmimadap' folder can be used to set the type of communication independent of the installation.**
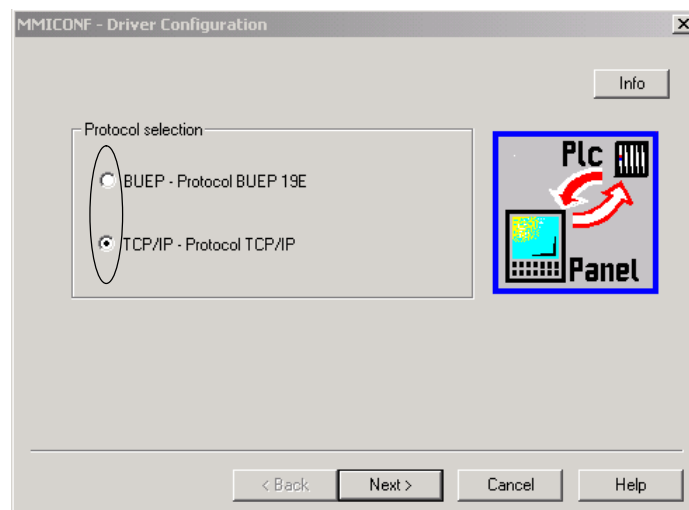
★   Select either the 'BUEP' or 'TCP/IP' configuration.

★   Press <Next> to go to the 'Driver selection' window.

3.2.1   BUEP
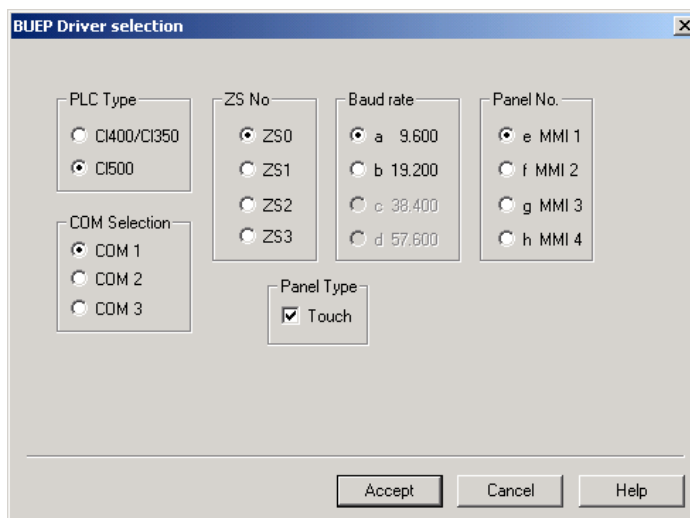
The following must be selected for serial communication with BUEP:

● PLC type
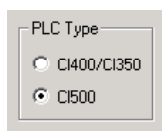
CL400 and CL350 are mono-processor controls. A maximum of 4 PC control panels can be managed from one central unit.

The CL500 is a multi-processor control. A maximum of 4 central units can be operated in one standard device. 4 PC control panels can be assigned to each central unit.
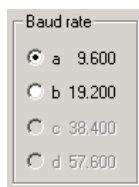
● Panel (control panel) no. and ZS (central unit) no.
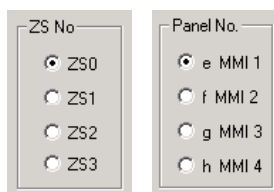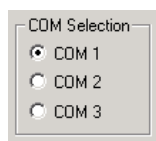

With CL500:
ZS and panel no., which should communicate with each other.

With CL400/CL350:
Set panel no. 1 to 4.

● Baud rate

Select transfer speed.

● COM selection

Select serial interface COM1, COM2 or COM3.

● Type of panel
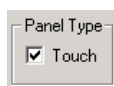
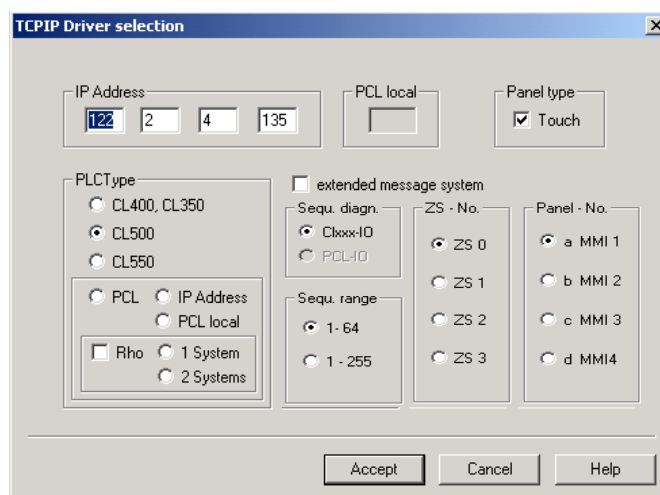

When using a touch panel, select type of panel.

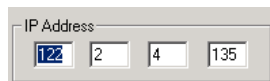★   Press <Accept> to activate the affected settings.

MADAP Studio now runs with all required system data.

3.2.2   TCP/IP

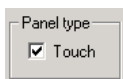For network communication with the 'TCP/IP' protocol, the following must be selected or provided:

● IP address

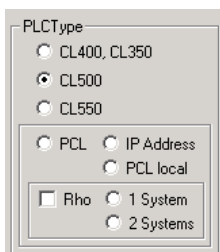Enter the IP address with which the PLC is addressed.

☞   **Observe the subnet mask in the system!**

● Type of panel

When using a touch panel, select type of panel.

● PLC type

CL400 and CL350 are mono-processor controls. A maximum of 4 PC control panels can be managed from one central unit.

The CL500 is a multi-processor control. A maximum of 4 central units can be operated in one basic unit. One PC control panel can be assigned to each central unit.

The CL500 is a multi-processor control. A maximum of 4 central units can be operated in one basic unit. 4 PC control panels can be assigned to each central unit.

☞ **The Rho box is grey if one of the CLxxx controls is selected. The box is activated once the PCL has been selected.**

PCL with selection for rho controls, see page 3–10.

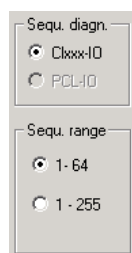● Panel (control panel) no. and ZS (central unit) no.
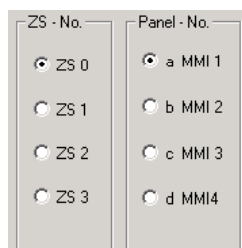
With CL550:
Set panel no. 1 to 4.

With CL500:
ZS and panel no., which should communicate with each other.

With CL400/CL350:
Set panel no. 1 to 4.

● Sequence diagnosis

CLxxx-IO:
CL500 address range.

PCL-IO:
For CL550 and PCL, you can use the entire operand address range for the step sequence diagnosis.
To do this, select PCL-IO, see ReadHMI.PDF.
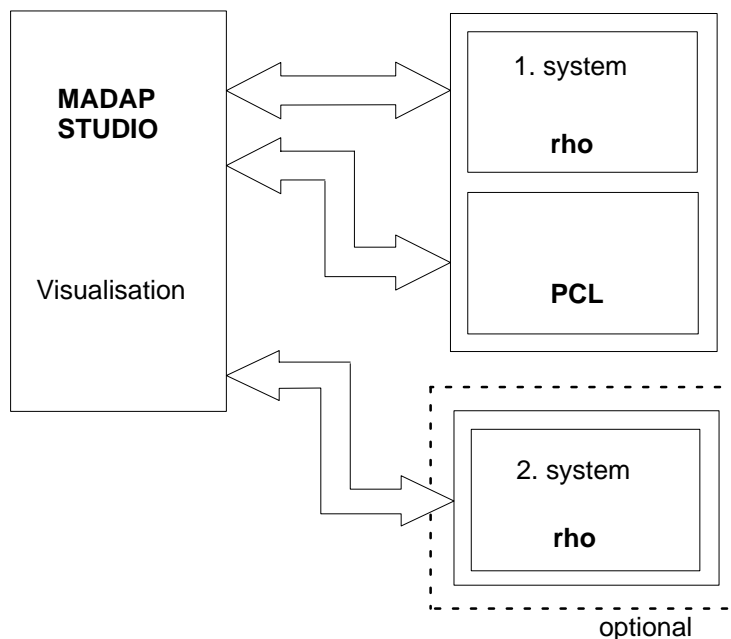
● Extended Messaging System

CL550, PCL, rho4.x only:
The extended messaging system gives you the possibility to generate and display up to 16k messages each for up to 128 units.

★ Press <Accept> to activate the affected settings.

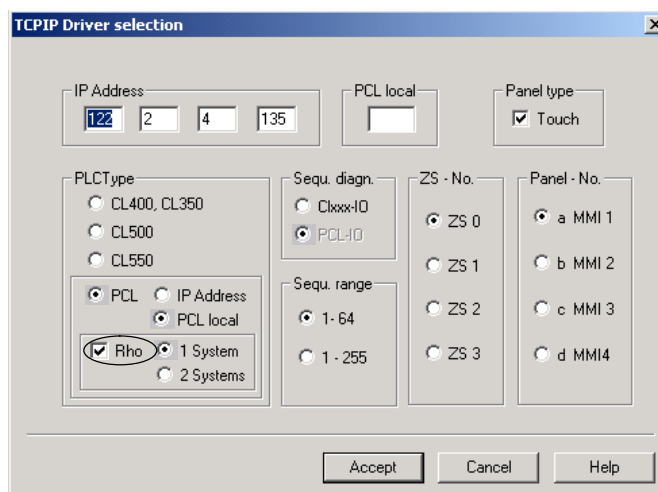MADAP Studio now runs with all required system data.

PCL

MADAP Studio can communicate with PCL and one rho system or optionally with two.

The following variants for the software-based PCL with selection for rho controls:

- with local PCL, IP address 127.0.0.1
- with PCL with any IP address (except 0.0.0.0 and 127.0.0.1)

If 'Rho' is activated, '1 System' will be automatically assigned. Click 'Next' to change to the next window where you can configure one rho system only.

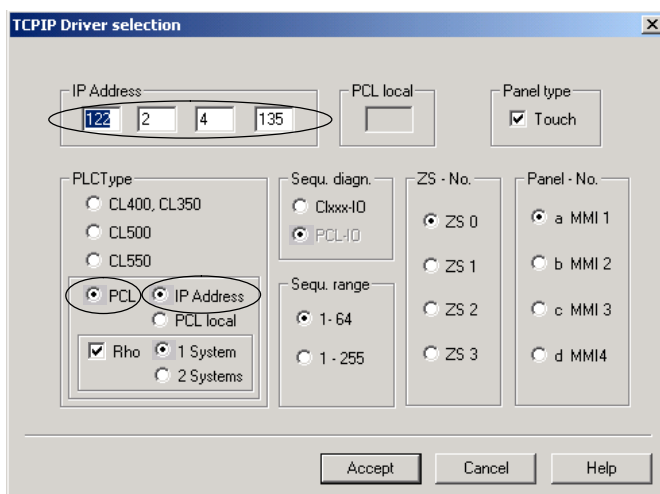Click the '2 Systems' option if 2 rho systems are used.

With local PCL
By selecting this option, this enables the fastest communication between both communication partners.

In this case, it is not necessary and thus impossible to enter the IP address.

External
★   In the 'IP address' entry box, enter the network address of the external PC in which the PCL is integrated.

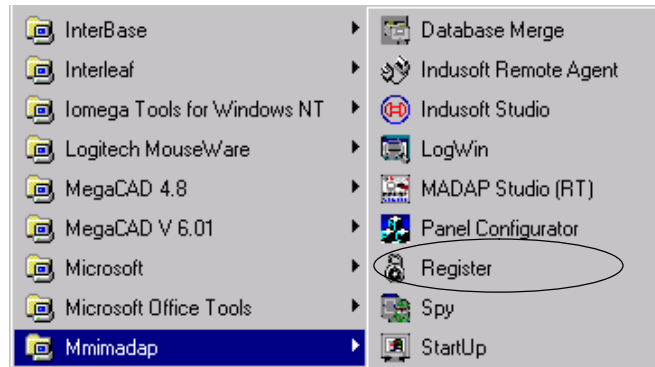★   Press <Accept> to activate the affected settings.

MADAP Studio now runs with all required system data.

3.3   Licensing

Licensing is realized via hardlock or soft license by Crypkey (corresponding to the PLC service programmes).
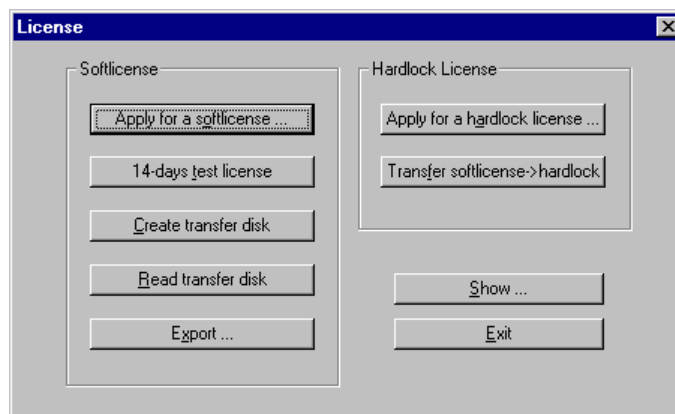
'Register' module

The **Register** module is used to register a license:

Entry screen

In the entry screen which now appears you have the following options:

- Apply for a softlicense
- 14-days test license
- Apply for a hardlock license
- Transfer license
- Display licensing status

Apply for a softlicense

An unlimited software license can be obtained by pressing the **Apply for a Softlicense...** pushbutton. The computer key displayed describes exactly the computer on which the software was installed. Please submit this key to Bosch.

A corresponding key code is calculated from this number which you must enter in the entry box. This key code enables the protected functions.

Test license

It is also possible to set up a once-only, free-of-charge, 14-day test license for each PC (**14 days test license** pushbutton).

Transferring a license to another computer

An existing license can be transferred from one computer to another with the **Create transfer disk**, **Read transfer disk** and **Export** options.

Transfer means that the license is passed from one computer to the other meaning that the first computer loses the license. The license is transferred using a transfer floppy disk, i. e. the license is temporarily saved on a floppy disk. This floppy disk can be a standardly formatted 3 1/2"- or 5 1/4"-disk. The floppy disk can be used for normal purposes once it has been used for transferring the license.

The transfer procedure is divided into three steps:

3. The target computer (without a license) creates a floppy disk with the **Create transfer disk** option.

4. The source computer (with a license) transfers the license information with the **Export...** option to the prepared transfer floppy disk. The source computer no longer has its license.

5. The target computer then reads in the transfer floppy disk with the **Read transfer disk** option. The license information is thus transferred to this computer. The transfer floppy disk cannot be used for licensing other computers. If you need licenses for other computers, please apply to Bosch.

Use this option to execute step 1. Select the floppy disk drive and insert an empty floppy disk. Press the **OK** button to create the transfer floppy disk.

Hardlock

A hardlock is offered as an alternative to the software license (**Apply for a hardlock license...** pushbutton). This can be attached to the parallel interface. A hardlock can simultaneously store licenses for WinSPS, WinCAN, WinDP and WinPanel.

To transfer from the hard disk to hardlock

The soft license can be transferred to the hardlock via the **Transfer softlicense –> hardlock** pushbutton. Once this transfer has been made, the hardlock license only applies.

☞ **A transfer back to the soft license is not possible.**

Displaying the licensing status

The current licensing status can be displayed via the pushbutton **Show...**.
The window also shows which options are avaible with the current license.
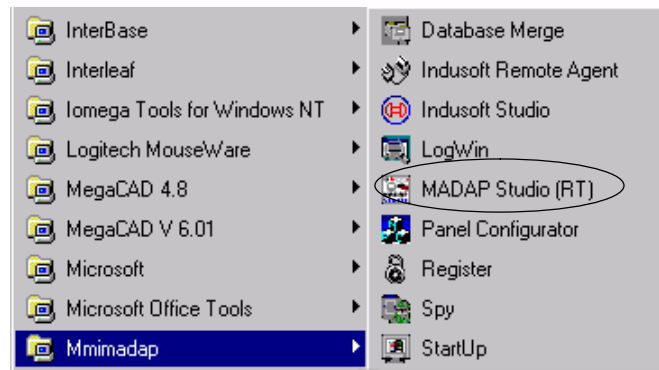(development, runtime, etc.).
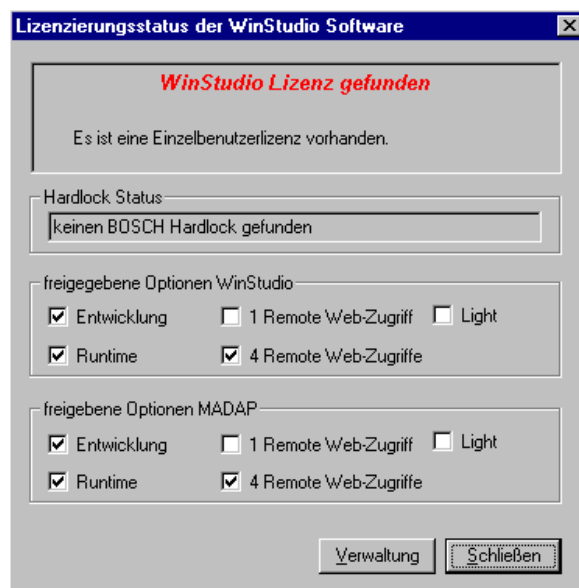
3.4   To start MADAP Studio

All tools needed for configuration are integrated in the MADAP Studio software.

Start MADAP Studio tools with:
- Windows start button [Start]
- [Programme] [Mmimadap] [MADAP Studio (RT)]

BOSCH

Notes:

A   Annex

A.1   Index

Notes:

Bosch Automation Technology

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