PEPPERL+FUCHS
PROTECTING YOUR PROCESS

Software Manual

Remote Operator Station

VisuNet RM Remote Monitor

RM 515

RM 519

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1 Important information

1.1 General information

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Publisher:

Pepperl+Fuchs GmbH

Lilienthalstr. 200

68307 Mannheim Germany

www.pepperl-fuchs.com

Tel. 0621-776-0

Fax 0621-776-1000

E-Mail: info@de.pepperl-fuchs.com

How to contact Pepperl+Fuchs GmbH:

Should you encounter any problems with the device, please consult the technical manual first of all. If you are still unable to solve the problems after studying the above information carefully you can contact the following places:

If you need to contact the support hotline, please make sure you have the Technical manual handy!

Region	**Tel. / mail address**
Western Europe + South Africa France, Belgium, Netherlands, Luxemburg, South Africa	+33-1 60 92 13-13, commercial@fr.pepperl-fuchs.com
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Northern America USA, Canada, Mexico	+1-330-486-0002 sales@us.pepperl-fuchs.com
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Middle-East / India Dubai, UA, Kuwait, Pakistan, Iran, Iraq, India	+971-4-88-38378 info@ae.pepperl-fuchs.com +91-80-28378030 pa-info@in.pepperl-fuchs.com
Asia-Pacific Australia, Singapore, China, Thailand, … Japan	+65-6779-9091 sales@sg.pepperl-fuchs.com +81-45-939 7802 sales@jp.pepperl-fuchs.com

1.2 Safety instructions

⇒ These devices are only allowed to be installed and operated by trained and qualified personnel who have received suitable instruction in their use.

⇒ These devices represent state-of-art technology. They are only allowed to be connected to systems that have been approved by Pepperl+Fuchs GmbH.

⇒ Never open the devices yourself. They are only allowed to be opened by authorized Pepperl+Fuchs GmbH personnel.
Pepperl+Fuchs GmbH is not liable for any resulting damages.

⇒ The devices are not allowed to be modified or otherwise altered in any way. Pepperl+Fuchs GmbH **is not liable for any resulting damages.**

⇒ Please study the "*Technical Manual* " carefully prior to starting up the devices.

⇒ The most recent version of the "*Technical Manual*" is always valid. It is available on the Support page of our web site (Internet address: **http://www.pepperl-fuchs.com**).

⇒ The operating voltage of the devices **must not exceed the limits** indicated in the ***"Technical Manual"*** under **Technical data**.
In the event of failure to comply, **Pepperl+Fuchs GmbH is not liable for any resulting damages.**

⇒ The relevant **specifications for hazardous areas** (e.g. EN 50178, EN 60079, EN 50014 - 50039) and **accident prevention regulations** (e.g. UVV) must be observed.

The technical data specified for the hazardous area corresponds to the certified values for the European Ex approval. The user is responsible for ensuring that the devices are suitable for their intended application and for the prevailing ambient conditions. No warranty can be given by Pepperl+Fuchs GmbH in this connection.

Data subject to change without notice

2 Introduction

2.1 Principle of the Remote Desktop Protocol

Microsoft's Remote Desktop Protocol (RDP) provides the technical framework for implementing terminal services between computer systems. A distinction is made between terminal servers and terminal clients. Terminal servers make their screen contents available to one or more terminal clients, each of which can then "observe" the terminal server workstation or control it remotely. RDP controls the transfer of screen contents and keyboard or mouse inputs via the network.

2.2 Versions / compatibility

The operating systems indicated in the table below are supported as terminal servers. The RDP functionality, for instance the transferred color depth or the encryption strength, varies according to the version.

Microsoft OS	**RDP Version**	**Details**
Windows NT Server 4.0	RDP 4.0	The RDP protocol was introduced with Windows NT Server 4.0, Terminal Server Edition.
Windows 2000 Server	RDP 5.0	▪ Encryption 56-/128 Bit ▪ Bandwidth reduction ▪ Roaming Disconnect ▪ Network Load Balancing
Windows XP SP1	RDP 5.1	▪ SmartCard support ▪ Improved availability of the local resources as interfaces and drivers
Windows Server 2003 Windows XP SP2	RDP 5.2	▪ Support for 24-bit color ▪ Direct access to remote PC (Console session for Windows 2003 server) ▪ Automatic reconnection when line is dropped ▪ Smart card authentication
Windows Vista Windows server 2008	RDP 6.0	▪ Support for 32-bit color ▪ Permits access to one application instead of total desktop ▪ Clear Type characters ▪ RPC over HTTPS, allows to connect to remote computers behind firewalls ▪ Supports multi-monitor-systems

2.3 Windows XP Professional license

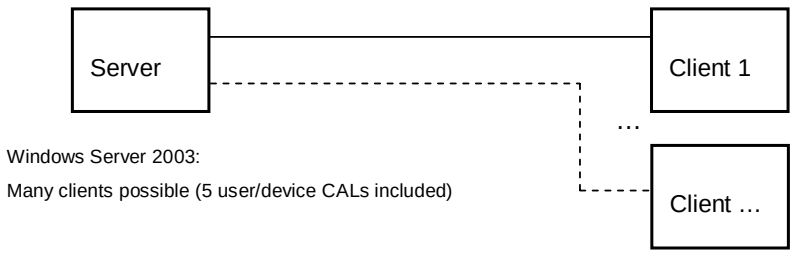
Windows XP is not a server operating system, but it does offer a terminal access for a client for administrative purposes. It is not necessary to purchase a terminal server license. On the other hand, Windows XP cannot be upgraded with additional terminal server licenses.

2.4 Windows Server 2003 terminal server license

Terminal server licenses (terminal server CALs) are required in addition to the ordinary server licenses (Windows 2003 CALs) in order to use Windows Server 2003 as an RDP server.

Notes:

- Terminal server CALs are not a substitute for Windows Server 2003 CALs and must be separately purchased.
- The purchase of a Windows 2003 Server standard license normally includes five Windows 2003 CALs. Additional terminal server licenses are required to operate Windows Server 2003 as an RDP server.



Additional terminal server CALs must be purchased for RDP access!

2.5 Security

Bidirectional encryption of data streams based on the RC4 ciphering algorithm is defined in the default setting.

3 P+F thin client solution, VisuNet RM

The *thin client* variant in the VisuNet product family is a diskless solution called VisuNet RM. As a pure thin client, the panel is used exclusively as a server input and output terminal. The applications themselves run on the server.

Data is transferred over the Ethernet using *Microsoft RDP* (Remote Desktop Protocol). The RDP version 5.2 is supported. Any Microsoft operating system with a *Windows Terminal Services* installation can be used as the server.
The required Ethernet interface and *Remote Desktop Connection* are preinstalled on the VisuNet RM, and a connection is established simply by typing in the server IP address. This step can optionally be automated with the integrated *AutoStart function*.

The RDP shell makes a basic distinction between the following two areas:

- Operator-Mode: this area can be navigated in by an operator.
- Configuration-Mode: this area is used by the system integrator or Administrator to enter settings.

Both desktops have a Start menu in the bottom left-hand corner and show the local IP address in the bottom right.

3.1 Start menu commands

By clicking on the <Start> menu in the bottom left, you open a menu containing the following options:

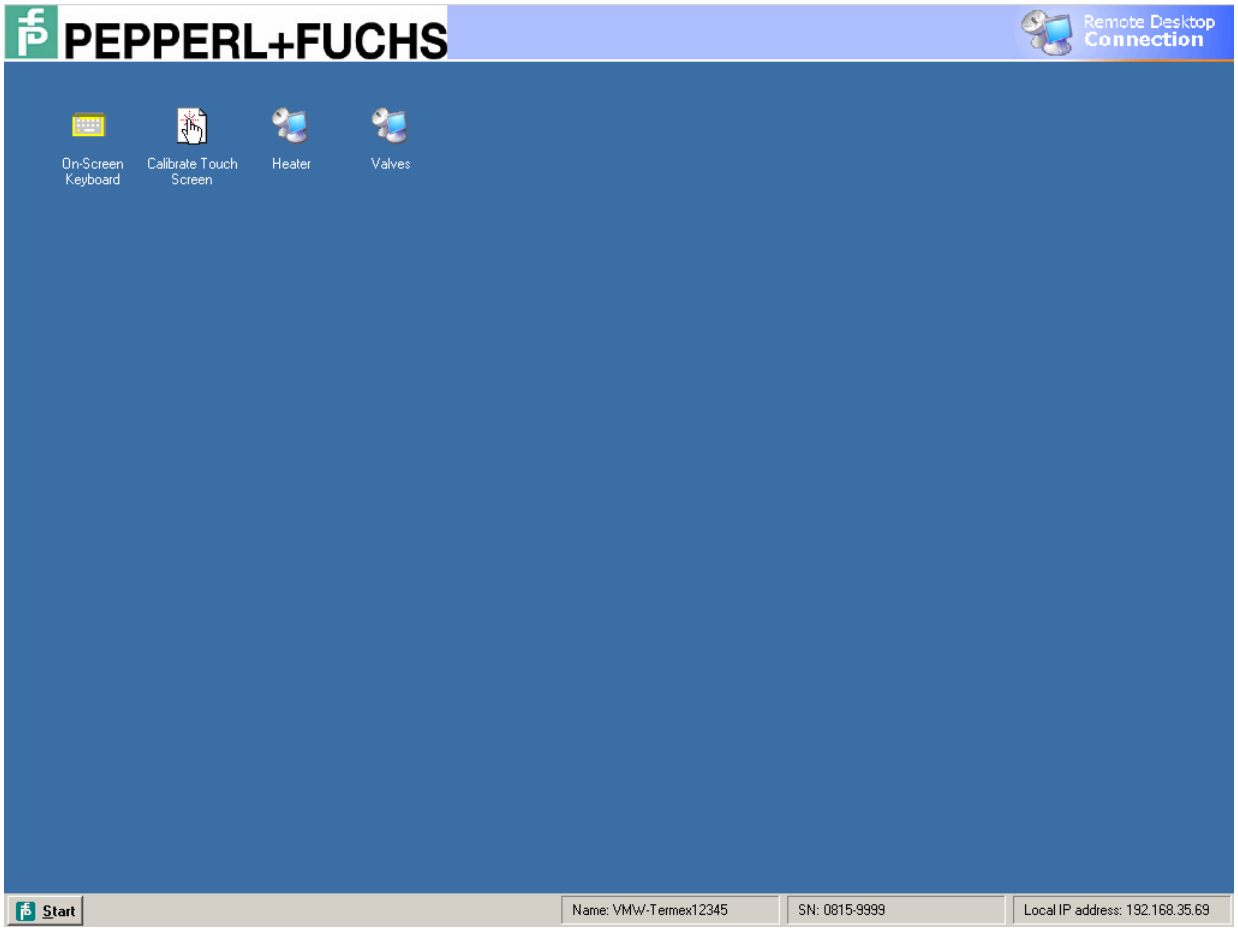
	**Configuration**	Allows you to change the configuration of the Terminal Services client. You must enter the appropriate password before you can switch to Administrator mode.
	**Exit Configuration**	Closes the Administrator desktop and opens the Operator desktop again. You can then try out the effect of the changes you have made.
	**Restart**	Restarts the VisuNet RM. This command can be disabled by the Administrator.

Note:

- If you restart the system in Configuration-Mode by selecting *Restart*, the system will ask whether you want your changes to be permanently saved on the Compact Flash. If you answer No, all changes will be canceled as soon as you shut down.

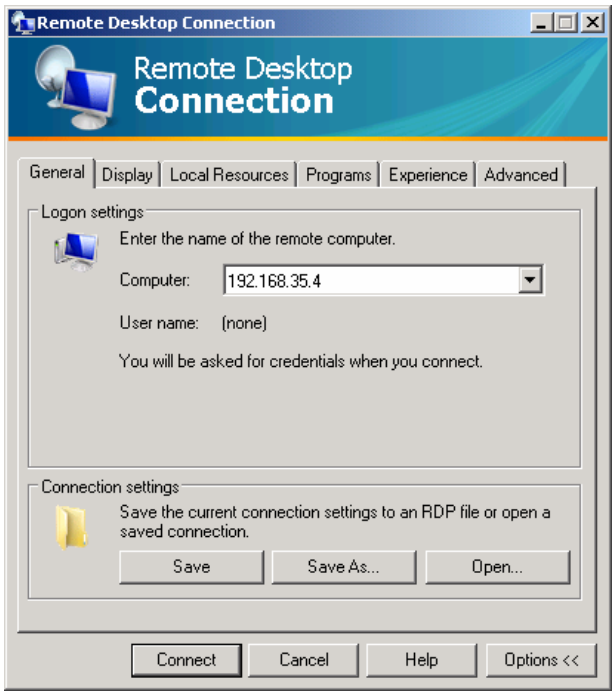
3.2 Operator-Mode

Most elements in the Operator-Mode area can be freely configured by the Administrator.



The following desktop icons are displayed, depending on the enabled functions:

	**On-Screen Keyboard**	Opens or closes the on-screen keyboard.
	**Calibrate Touch Screen**	Opens the program for calibrating the touch screen.
	**<Profil 1>, <Profil 2>, …, <Profil N>**	Starts the Terminal Services client. The Administrator can assign an RDP file (with preconfigured settings) for starting the client or disable this command. You can also store other RDP profiles. Each profile is represented by a separate desktop icon. By double clicking on an icon, you open the profile and establish a connection to the RDP server.

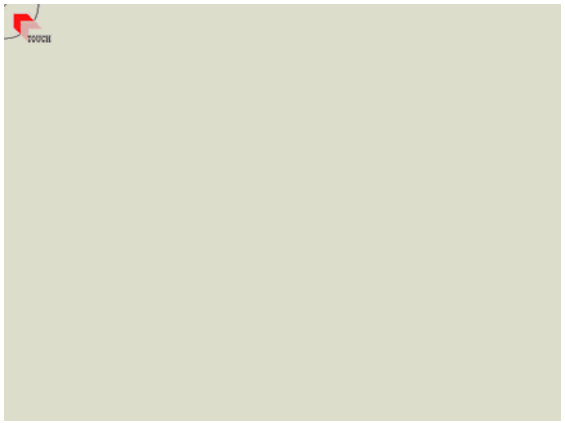


Note:

- All profiles stored in <..\Documents and Settings> are represented by a separate icon in Operator mode. By double clicking on an icon, you establish a connection to the corresponding RDP server.

3.2.1 Calibrate Touch-Screen

The calibration of the touch-screen occurs by selection of the program „**Calibrate Touch Screen**“. It opens a (full-screen) dialogue screen in which a certain amount of screens pixels have to be marked. These pixels have to selected on the touch screen as accurate as possible for approx. 1 second. To use a plastic pointer is recommended.



After closure of the procedure the touch-screen is new calibrated.

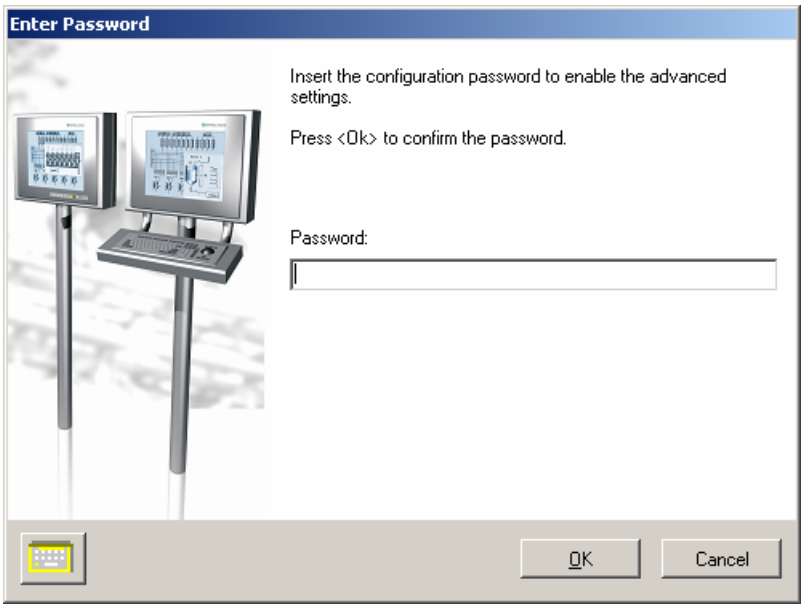
Remark: The calibration procedure may be canceled by pressing the „ESC“-key.

Please RESTART the VisuNet RM to safe changes.

3.3 Configuration-Mode

All RDP client settings are entered in configuration-mode. In addition to creating RDP profiles and calibrating the touch screen, this includes configuring the Operator desktop and assigning IP addresses.

You open configuration-mode from Operator mode by selecting <Configuration> in the Start menu. You then see a dialog in which you are prompted to type in the password for configuration-mode.

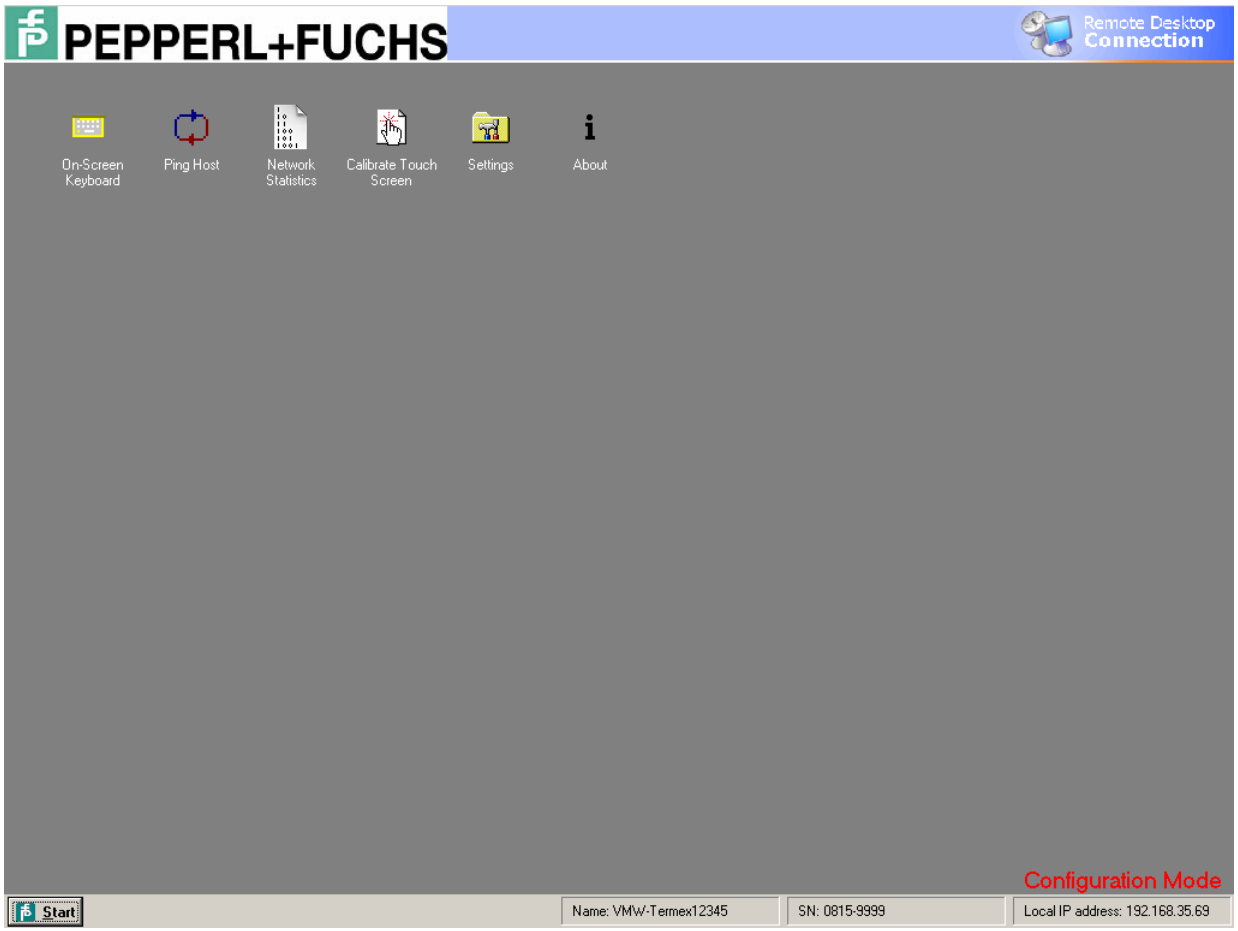


If the thin client is only operated by means of the touch screen – in other words, without an external keyboard – you must enter the password using the on-screen keyboard (activated by clicking the icon in the bottom left).

Notes:

- No password is defined in the delivery condition. The dialog is not displayed then for this reason.
- The Configuration-mode should always be protected with a password in the production environment.
- In order to save entered changes permanently, you must select *Restart* or *Shutdown* and answer <Yes> when the system asks "Save changes?". If not, all changes will be canceled.

If you enter the password correctly, the Configuration-mode is opened.



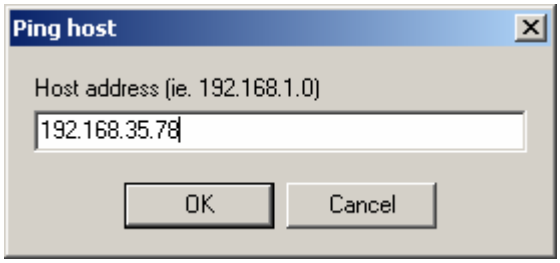
You can select the various functions for configuring the system by clicking the following icons:

	**On-Screen Keyboard**	Opens or closes the on-screen keyboard.
	**Ping Host**	Sends a ping command to the specified IP address.
	**Network Statistics**	Displays information about network traffic that could be useful for diagnosing errors or faults.
	**Calibrate Touch Screen**	Opens the program for calibrating the touch screen.
	**Settings**	Allows you to define settings for the desktop and for starting *Remote Desktop Connection*.
	**About**	Opens a dialog showing copyright information and the current software version.

These commands are described in detail in the next few sections.

3.3.1 Ping Host

You can send a ping command to another PC here. This command can be extremely useful for diagnosing network problems.

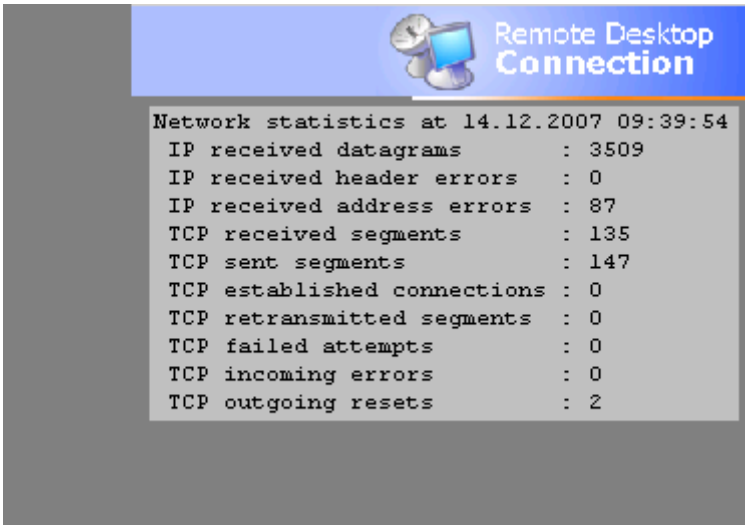


Notes:

- Please note that the firewall of Windows XP SP2 blocks ICMP packages in the default setting. The ping command therefore returns an error because the host system does not respond. This problem can normally be solved by changing the firewall settings on the host system. The firewall can be temporarily deactivated for test purposes.
- You can also ping the VisuNet RM from the host system in order to test the network connection.

3.3.2 Network Statistics

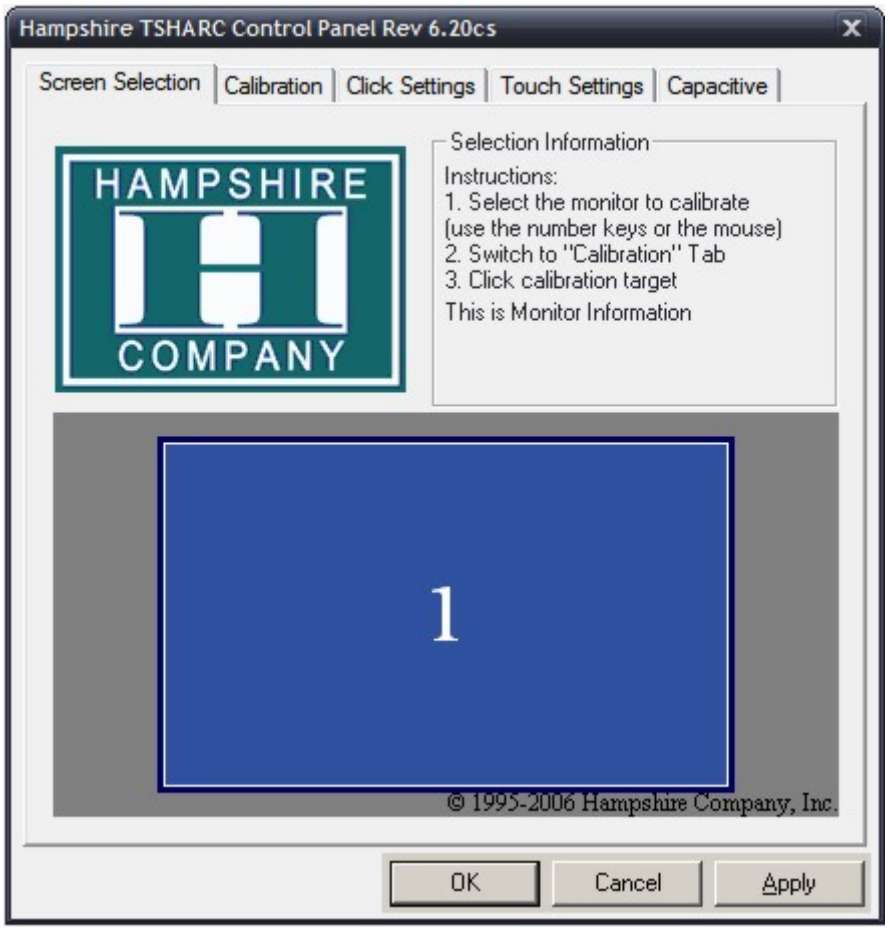
Double click this button to display the values for the TCP/IP stack. These values, which are updated once every second, contain valuable information about network traffic.



3.3.3 Calibrate Touch-Screen

The calibration of the touch-screen occurs by selection on the screen in Configuration mode “Calibrate Touch Screen”.

The calibration program opens with the Screen Selection tab and starts to set the calibration points after a few seconds. You must touch each point in turn.



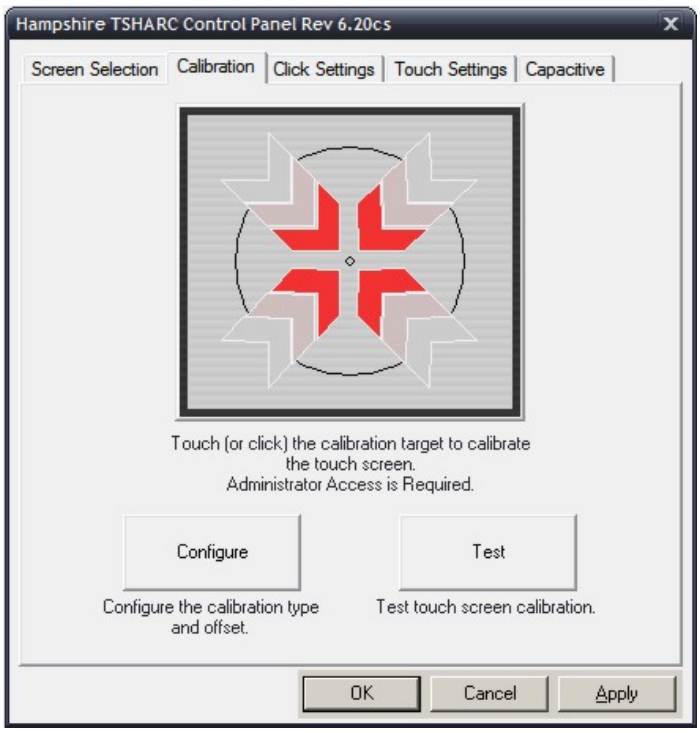
Setting the touch functions

The touch function settings are specified on six tabs. Confirm all changes to the set values by clicking the "Apply" button.

(The settings shown here are the recommended ones.)

Click "OK" to exit the calibration program.

The tabs are explained on the next few pages. Each time you enter a new setting, you must click "Apply" in order to save it!



- "Calibration Options" tab

  You can select the various calibration options on this tab and recalibrate the touch screen.

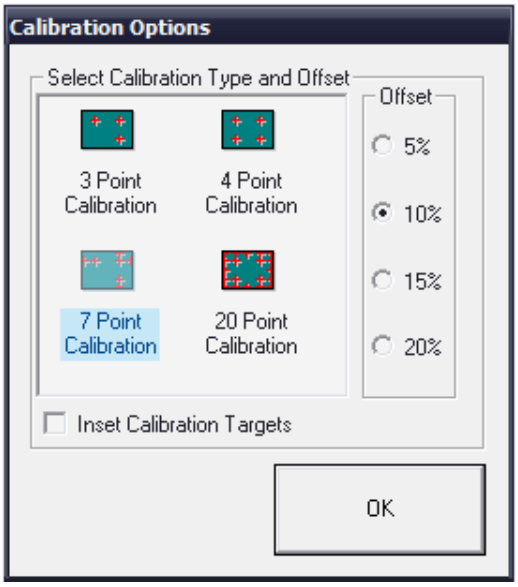
  → Click "Configure" to open a popup menu in which you can set the number of calibration points and their distance to the edge of screen (offset).

	Note: For the largest accuracy calibrate as much points as possible with small offset.

  → Click the large calibration target to start the calibration program.

	Note: With diagonal view to the display a misalignment between fingers and calibration point (parallax error) arises.

  → Click "Test" to test the calibration.



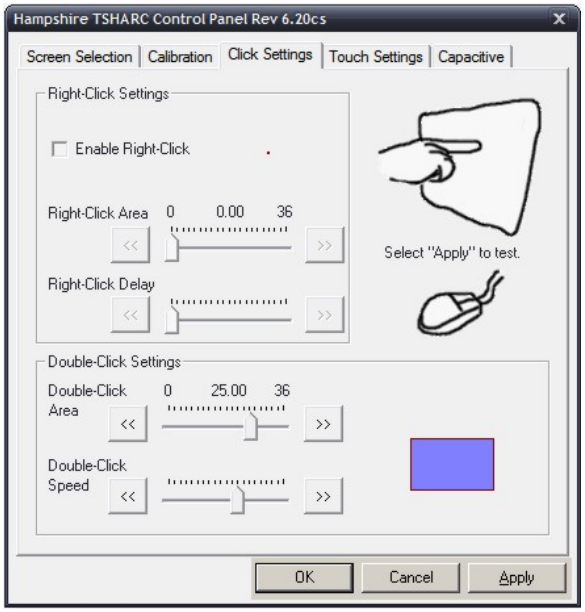
- "Click Settings" tab

You can edit the double click settings on this tab.

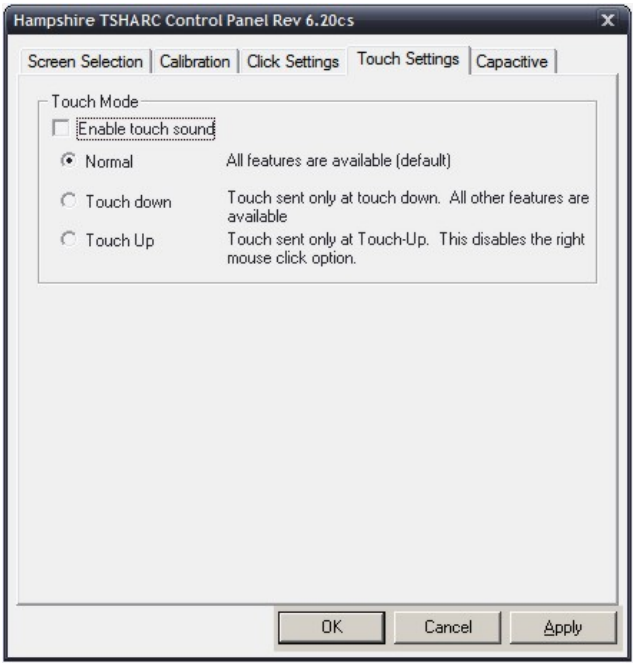
→ The box in the top left (Right Click Emulation) initiates a mouse "right click". Touching the same point on the screen for a predefined period of time is interpreted as a right click. You can set the amount of time needed to produce a right click event with the slider in this box.

→ You can set the double click time and define the event area (the area within which two clicks are necessary to count as a double click) in the bottom box.

You can check your settings in the "hand" box.

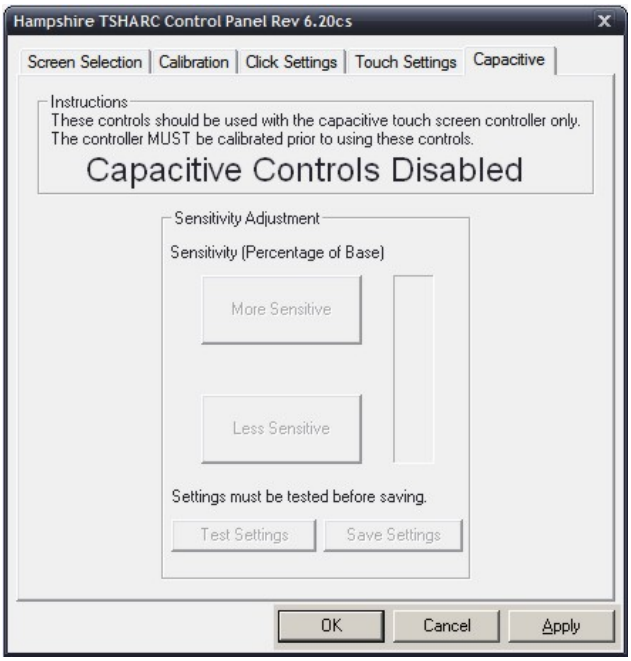


- "Touch Settings" tab



- "Capacitive" tab

- Not required for the VisuNet PC



3.3.4 Settings

You can specify other VisuNet RM settings in the Settings dialog.

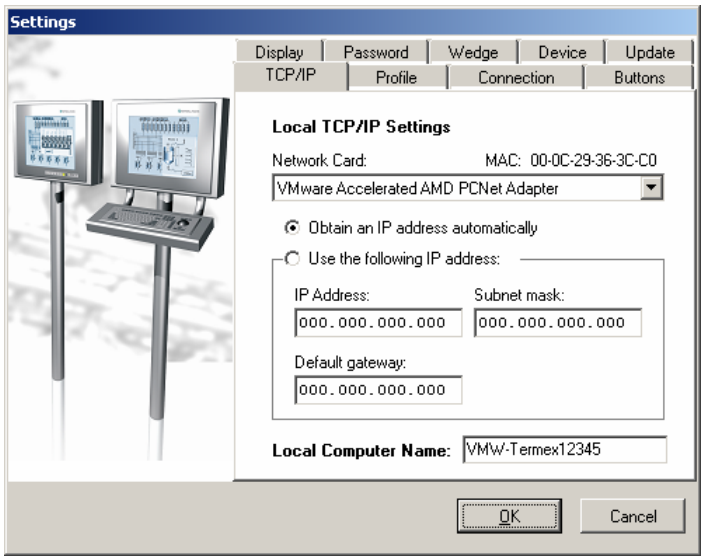
3.3.4.1 TCP/IP

You can specify the settings for the **local** TCP/IP address in this dialog.

The local TCP/IP address can be assigned in either of two ways:

1. Obtain an IP address automatically:
   The IP address is requested from a DHCP server and dynamically assigned. This variant is widely used in networks with a single server and several VisuNet RMs and is recommended.
2. Use the following IP address:
   A specific IP address is statically assigned to the thin client (or rather to its network card). This variant should be selected for point-to-point connections without a DHCP server.

You can change the name of your computer in the Microsoft network under **Local Computer Name**.

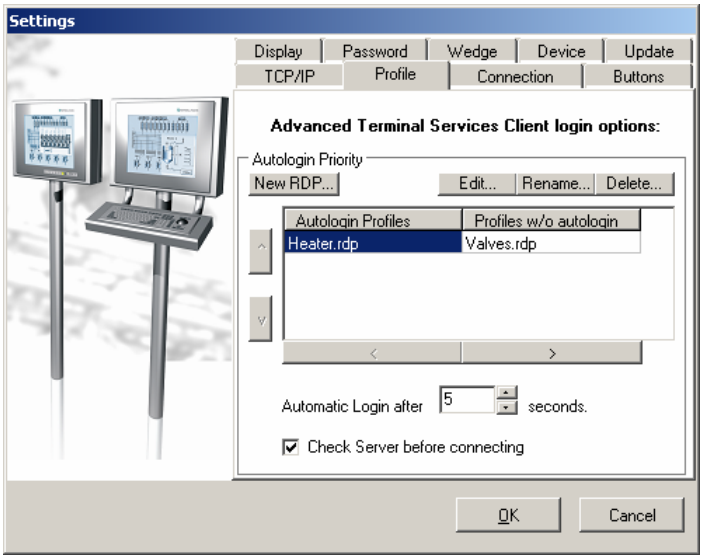


Notes:

- The name specified under Local Computer Name must be unique in the network (otherwise network problems may occur).
- If the IP address is statically assigned, the following conditions must be satisfied (otherwise network problems may occur):
  1. The IP address must be unique in the network
  2. The RDP server must be located in the same subnet
- If a point-to-point connection is established:
  1. The network cable should be crossed (Link LED active)
  2. The subnet mask should be set to 255.255.255.0 (like the RDP server)
- The MAC address of the network card appears above the box.

3.3.4.2 Profile

You can manage the RDP profiles in this network and define the behavior of the VisuNet RM when the system is booted.



In the middle of the window is a two-column list containing all active profiles, i.e. all profiles that are visible in Operator mode.

The left column shows all profiles that are started consecutively whenever the system is booted in order to establish a connection to the RDP server. This prioritized autologin list allows you to implement a kind of redundancy strategy in the event of a server failure.

In the simplest case, the list on the left contains exactly one profile, which is started as soon as you boot the system.

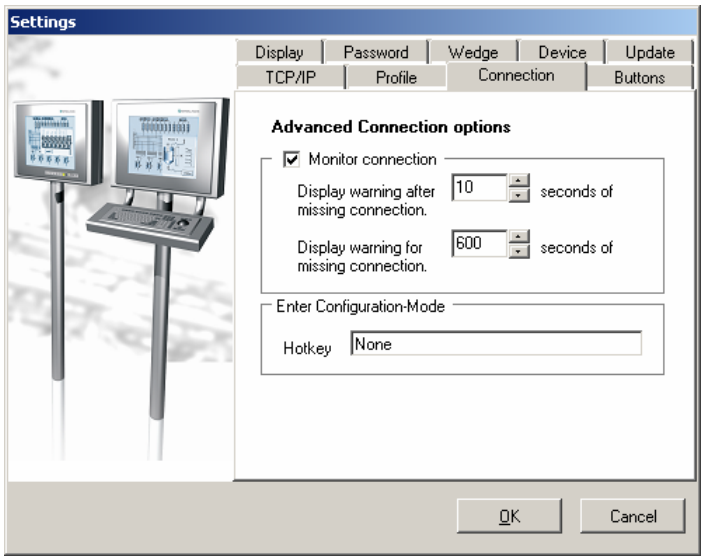
Profiles can be configured with the following input fields:

New RDP…	Creates a new RDP profile. (see chap. 4)
Edit…	Allows you to change the settings for the selected profile. (see chap. 4)
Rename…	Allows you to change the visible name of the selected profile.
Delete…	Deletes the selected profile.
Automatic Login after XX seconds	If you select this check box, a *Remote Desktop Connection* is automatically established to the server using the specified profile after the set time elapses.
Check Server before connecting:	Allows a previously created RDP profile to be assigned with <Select Profile…>. All connection options can be preconfigured in RDP profiles. The Administrator can thus preselect all setting options for the operator.

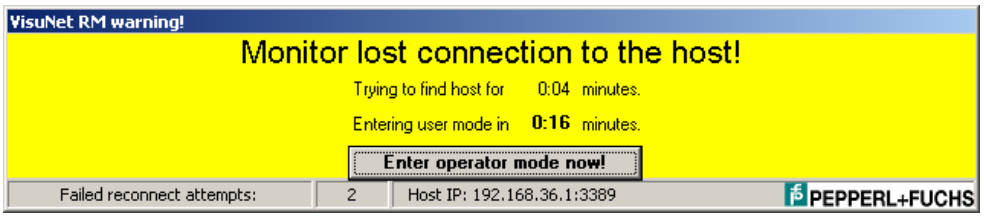
The buttons below the list and to the left of it can be used to configure the autologin profiles. You can activate or deactivate these profiles and change their priority.

3.3.4.3 Connection

You can define the behavior of the VisuNet RM with regard to existing connections in this dialog.



- Monitor connection: The existing connection is monitored
  The VisuNet RM detects a lost connection to the host system extremely reliably and fast (e.g. if a single network component or the complete host system is faulty). You can control the behavior of the VisuNet RM with the following settings:
  - Display warning after XX seconds of missing connection:
    This is the time in seconds after which a warning is displayed if a connection is lost.



    By clicking <Enter Operator Mode now!>, you immediately release the connection to the host system and return to Operator Mode.

  - Display warning for XX seconds of missing connection:
    This is the time in seconds after which a connection to the host system is actively released by the VisuNet RM if the connection is lost. You should choose a relatively long time (5 minutes) if long network connection quality is poor, to give the system a chance to recover.
    After the connection has been released, the VisuNet RM returns to Operator Mode and is reconnected to another host system, possibly with an autostart profile.

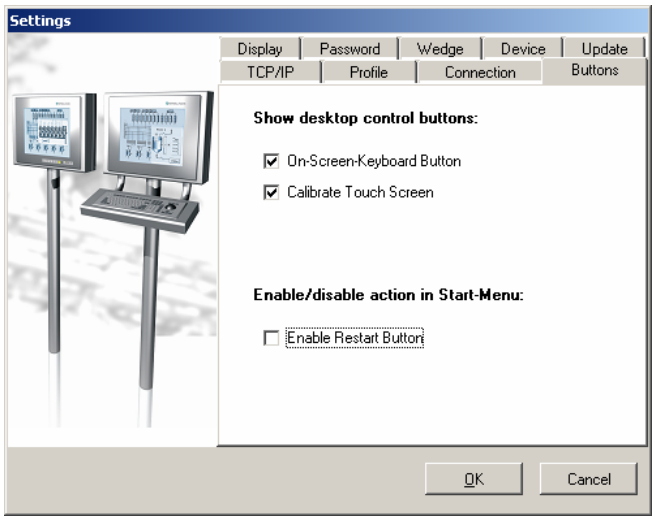
- Enter Configuration Mode: Using a freely definable shortcut, you can change to Configuration Mode at any time without interrupting operation. No shortcut is defined in the delivery condition.

	Note: This function can not be activated in the software version 1.2.5.69 (see to chapters 3,3 About), is not available.

3.3.4.4 Buttons

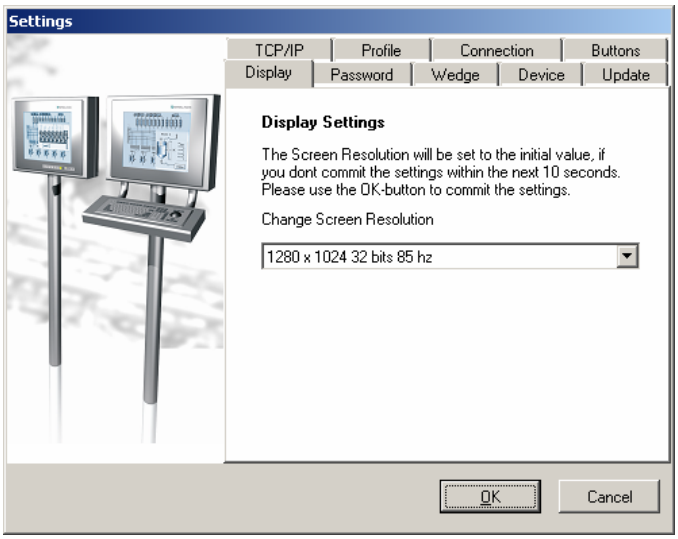
This dialog defines the behavior of the following buttons in Operator mode:

- On-Screen-Keyboard Button: If this check box is selected, the on-Screen-keyboard can be started in operator mode.
- Calibrate Touch Screen: If this check box is selected the touch screen can be calibrated in operator mode.
- Enable Restart Button: If this check box is selected the system can be restarted in operator mode.



3.3.4.5 Display

You can change the display settings of the thin client here. If you change the resolution, the new resolution is displayed for approximately ten seconds. Your input is saved permanently providing you commit the setting by clicking <OK> within this time. If not, the old resolution is restored.



Note:

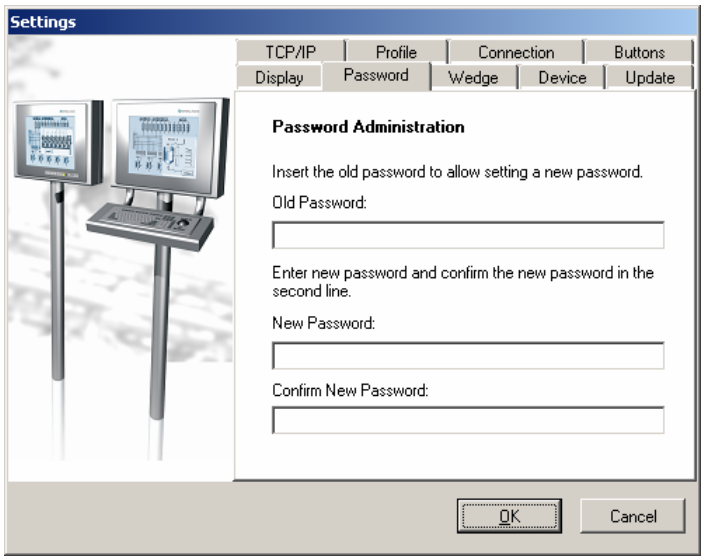
- You may need to change the resolution here if the server PC makes a process image available in a different resolution.

3.3.4.6 Password

Allows the Administrator to set a new password for the configuration-mode. This password must be entered whenever you switch from Operator mode to Configuration mode.

First, type the old password into the <Old Password> box. If a password has not yet been defined, this box must be left empty.

Then type the new password into the <New Password> box and retype it in <Confirm New Password>.



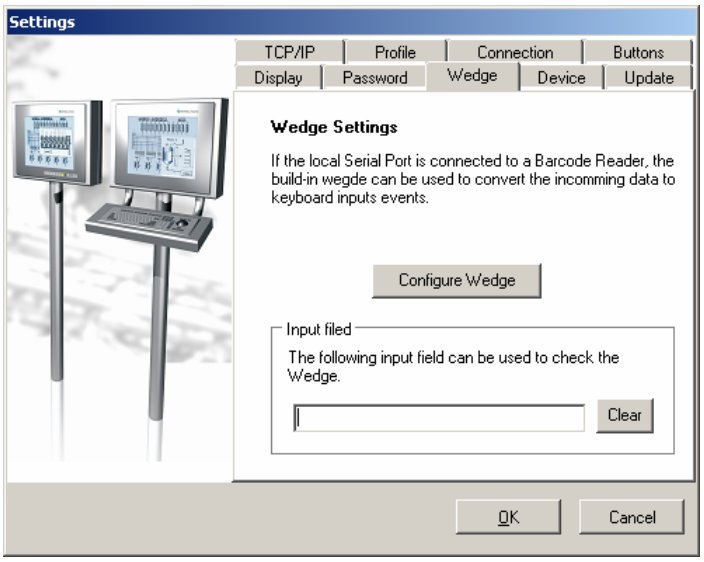
Notes:

- In order to save entered changes permanently on the Compact Flash, you must select *Restart* and answer <Yes> when the system asks "Save changes?". If not, all changes will be canceled.
- The changes made to the system on the configuration mode can have far-reaching consequences. The Configuration mode should therefore always be protected with a password!
- Be careful never to forget the Administrator password. Without it, you will no longer be able to access the system settings!

3.3.4.7 Wedge

S2K-Wedge is a keyboard emulation program that reads character strings from the serial port and “simulates” the corresponding keystrokes on your PC.

It is specially designed for connecting Pepperl+Fuchs scanners. It allows a scanner connected to the serial port to be used as an input device in a variety of applications.



3.3.4.7.1 Entering profile settings

S2K-Wedge converts the incoming data at the serial port directly to keystrokes on the local system. The corresponding serial port on the terminal server is consequently available for other peripheral devices.

Notes:

- Upper-case letters and special characters (entered using an ALT shortcut) will only be correctly reproduced on the remote system (RDP server), however, if the 'Keyboard' option on the 'Local Resources' tab is set to 'On the local computer' for the RDP profile concerned (see Fig. 1).
- The serial ports should likewise remain on the local VisuNet RM (see Fig 1 next page).

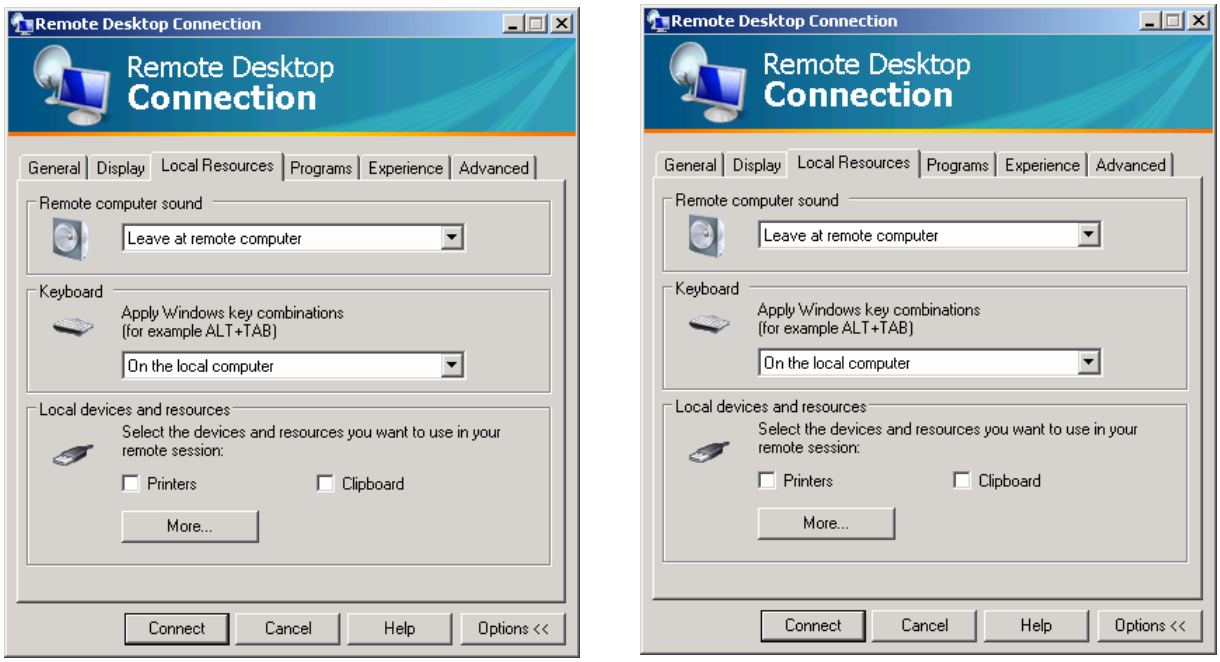
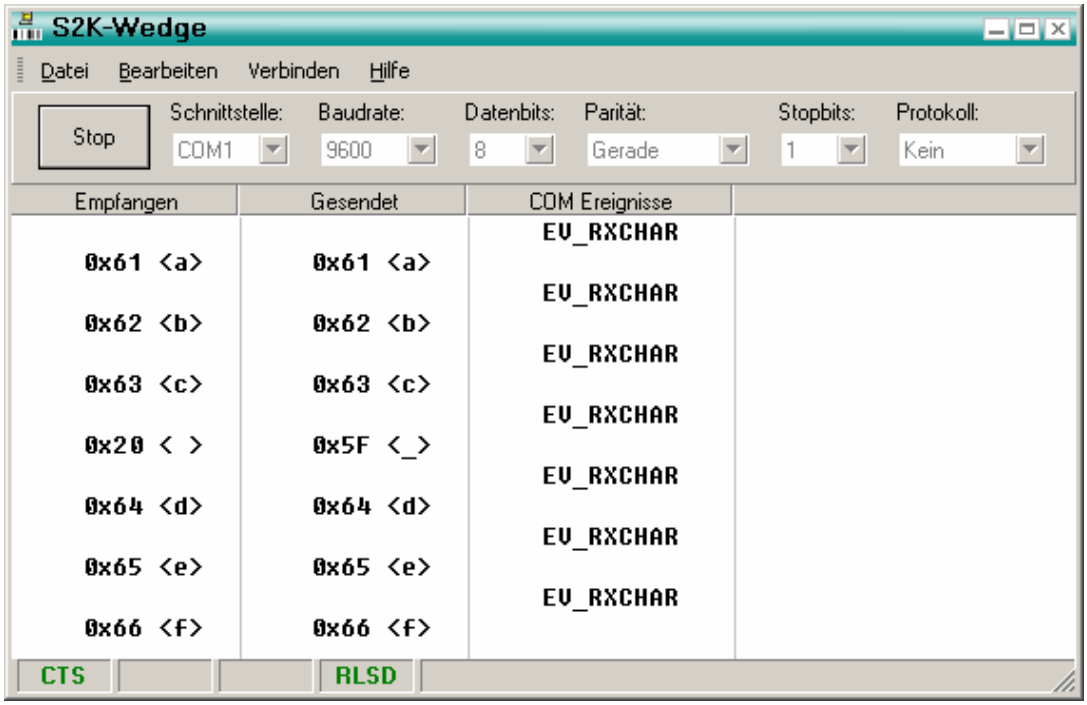


Fig. 1: Recommended settings for S2K-Wedge

3.3.4.7.2 Short description of the operator interface

S2K-Wedge is started when clicking the configuration button. This mode is used for configuration and diagnostic purposes: you can monitor all incoming hex data and its internal conversion directly.



3.3.4.7.3 Configuring the serial port

You cannot change the settings if the serial port is open.

- **Important:** Make sure that the settings you select here match those for the connected device.

Port

You can select a serial port for communication on the PC in this box. All ports known to the operating system, including those already occupied by other programs, are offered. The standard settings for barcode reader on the VisuNet RM is COM6

Baud rate

Specify the data transfer speed here. The default setting for the barcode reader is 9600 baud.

Data bits

Specify the number of data bits here. 5, 6, 7 and 8 are permissible values. There are usually 8 data bits.

Parity

This box specifies whether or not the parity check bit should be computed, and if so how. The parity of the barcode reader is normally <*Even*>.

Stop bits

Specify the number of stop bits here. There is usually one stop bit.

Protocol

This box determines the protocol that is used to transfer data. Both software and hardware handshakes are supported. For barcode readers “no protocol” is selected.

3.3.4.7.4 Setting up a connection

After you have entered the correct settings for the serial port, you can set up a connection to the terminal by clicking on the red Start button. The serial port has been opened successfully if the color of the button changes to grey.

3.3.4.7.5 COM events

The Events window shows the chronological sequence of incoming data at the serial port as well as its line states.

Incoming characters appear in the left column and port events in the right column. The middle column lists all emulated keystrokes that have been sent to the operating system. The received characters are normally identical to the emulated keystrokes.

By editing the ASCII transformation table (see 3.3.4.7.13), however, it is possible to redefine characters received at the serial port in order to emulate other keyboard events.

Example 1:

In Picture 1, the following characters are received at COM1 in the indicated order: <a, b, c, blank, d, e, f>. The emulated keys are as follows, however: <a, b, c, _, d, e, f>.

3.3.4.7.6 *Port* states

The current line state of the serial port is shown in the status bar.

Control signals

A green text means that the control signal concerned is present.

CTS	The CTS (clear to send) signal is on.
DSR	The DSR (data set ready) signal is on.
RING	The ring indicator signal is on.
RLSD	The RLSD (receive line signal detect) signal is on.

3.3.4.7.7 *Command* line parameter

The user interface 'S2KServicePanel.exe' can be started with the following parameters in the command line:

- /start: the S2KWedge service will be started
- /stop: the S2KWedge service will be stopped / paused
- /update: the S2KWedge service will be stopped and afterwards be started again

3.3.4.7.8 *Functions* in the menus

The functions listed below can be selected in the main menu.

3.3.4.7.9 *File*

Save	Saves the current settings.
Exit	Closes S2K-Wedge. You are advised to save any settings that are not yet saved.

3.3.4.7.10 *Edit*

Cut	Copies the current selection into the clipboard and deletes the selection.
Copy	Copies the current selection into the clipboard.
Delete	Deletes the current selection
Select all	Selects all characters in the view
Delete all	Deletes all characters in the view
Open ASCII-Table...	Opens the ASCII-Transformationtable were incomming characters can be redefined.
Blocksynchronisation...	Opens a window for setting the block length and the character timeout.

3.3.4.7.11 *Connect*

Start	Opens the serial port and connects to the serial device. All incomming ASCII-characters are transfomed by the ASCII-Transformationtable and were send to the keyboard driver.
Stop	Closes the serial port and disconnects the serial device.

3.3.4.7.12 Help

S2K-Wedge Help:	Opens the online documentation.
About:	Opens a dialog box containing additional information about S2K-Wedge.

3.3.4.7.13 Fine Tuning

As mentioned above, you can redefine received characters with the help of the ASCII transformation table. This table can be edited by selecting <*Edit/Open ASCII Table...*>.

The font and the font size can be selected in the title bar. By clicking <Clear All Assignments>, you restore the original table assignments and all received characters are emulated 1:1 (untransformed) with the corresponding keystrokes.

By clicking <Deactivate Character>, you deactivate the character selected on the right. If this character is received, in other words, it is simply ignored and no keystrokes are emulated.

By clicking <Clear Assignment>, you restore the original definition of the selected character. From now on, this character is converted using the default assignment again (see left-hand table).

The left half of the window shows the original ASCII assignment for the active font. The right window half contains the redefined substitution table.

Redefining characters is very easy: simply drag the character you want to reassign from the left window half and drop it onto the character you want to redefine it as in the right window half. All redefined characters appear in the right window half in a different color.

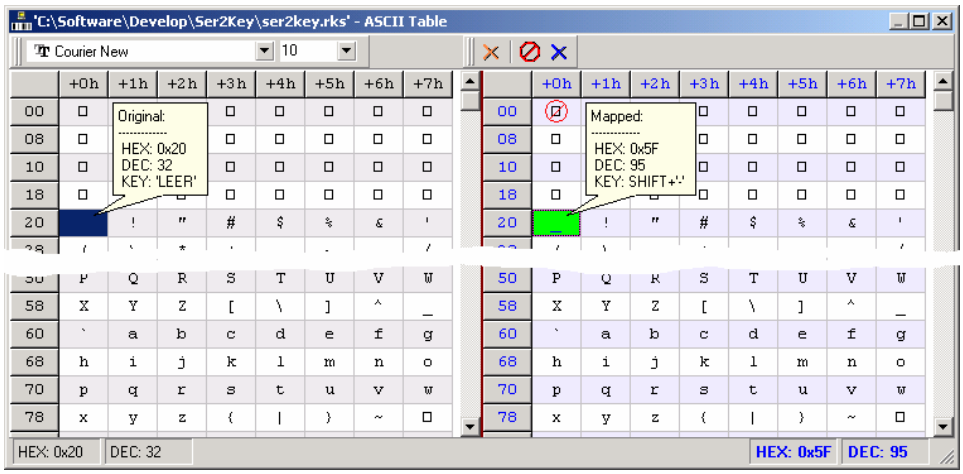


Figure 2: ASCII-Transformationtable

Example 2:

Let us assume you want an incoming blank (hex: 0x20) to be emulated as a keyboard input by the underscore character (hex: 0x5F). In Fig. 2 you can see the redefined ASCII-Transformationtable.

Remark: To simulate the ENTER-key the character 0x0D must be read.

3.3.4.7.14 *Block synchronization*

You can select <*Edit/Block Synchronization...*>. This command opens a dialog (see Fig. 3), in which you can edit the “Telegram length” and “Character timeout” parameters.

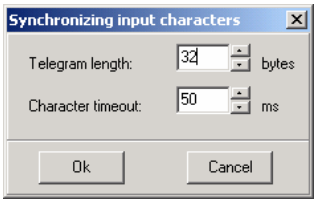


Figure 3: Block synchronization

These settings control the construction of blocks of simulated keyboard inputs. This is necessary to prevent local user inputs from interrupting continuous input sequences.

Telegram length: Number of characters that must be buffered. The buffer is sent when this number is reached.

Character timeout: Timeout per character. The buffer is sent if this timeout elapses.

Remark: The buffer is sent if one of the events has occurred. In this case the counting of the telegram length begins at zero again.

3.3.4.7.15 Possible *causes* of errors

☑ **The connection to the device is not correct:**

- Wrong serial port selected: Check whether your device is connected to the right serial port on the PC.
- Problems with the connecting cable: Check whether the cable is connected correctly. Check the connector label on the cable.

☑ **The configuration of S2K-Wedge is not correct:**

Wrong transfer parameters: compare the settings of the serial device with those in the S2K-Wedge. Check above all whether the parity is set correctly.

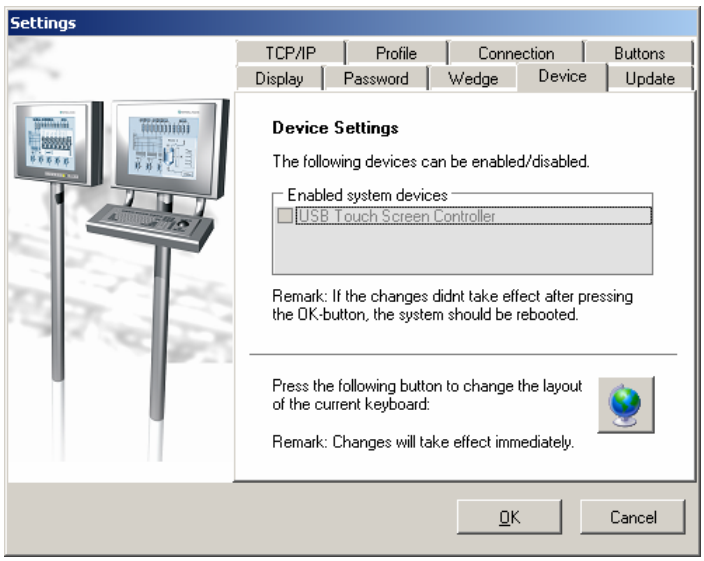
Characters are not show correctly: Check the internal ASCII-Transformation table.

The serial port can not be opened: Please make sure that
i) it is not already opened by another program (may be reboot),
ii) the serial port settings are supported by the operating system (use standard settings)
iii) the serial port is physically present, activated in the BIOS and not damaged.

3.3.4.8 Devices

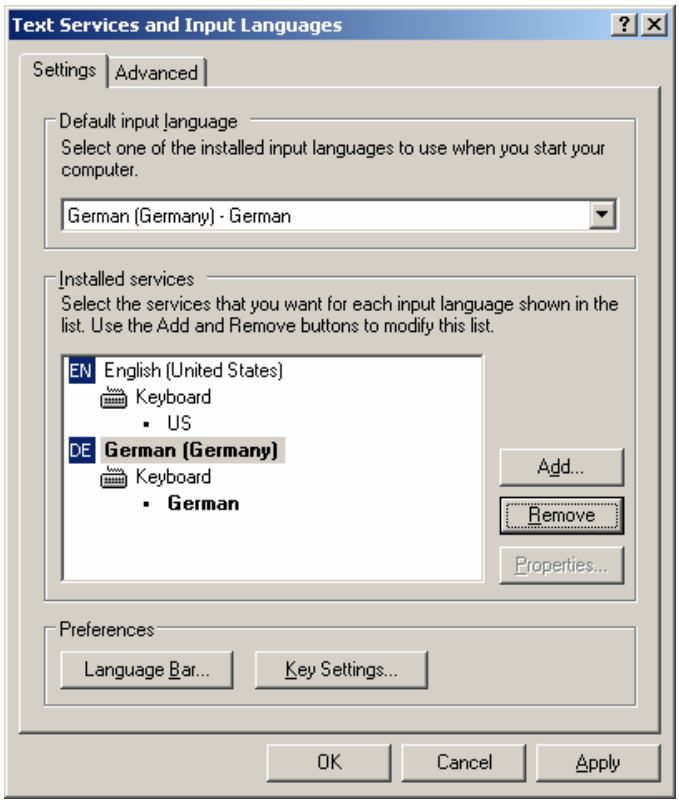
In this dialogue certain selected devices can be activated and/or deactivated.

In this way e.g. a Touch screen can be activated and/or deactivated.



1.) Change keyboard layout.

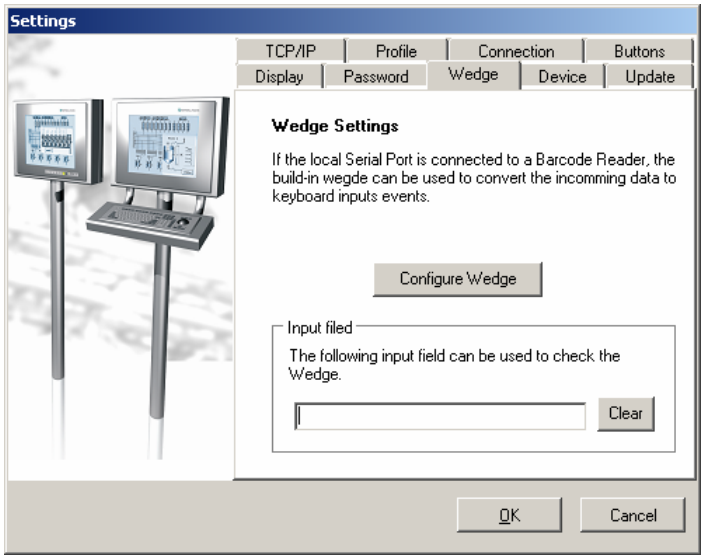
By clicking the “Globe” icon at the bottom of the dialog, you can change the local keyboard layout (1). You then see another dialog in which you can select a new layout (3). You must add the new layout first by clicking “Add…” (2).



3.) Select new layout.

2.) Add new layout.

The new layout of the keyboard can be verified with the dialog „Wedge“ (4).



4.) Verify new layout.

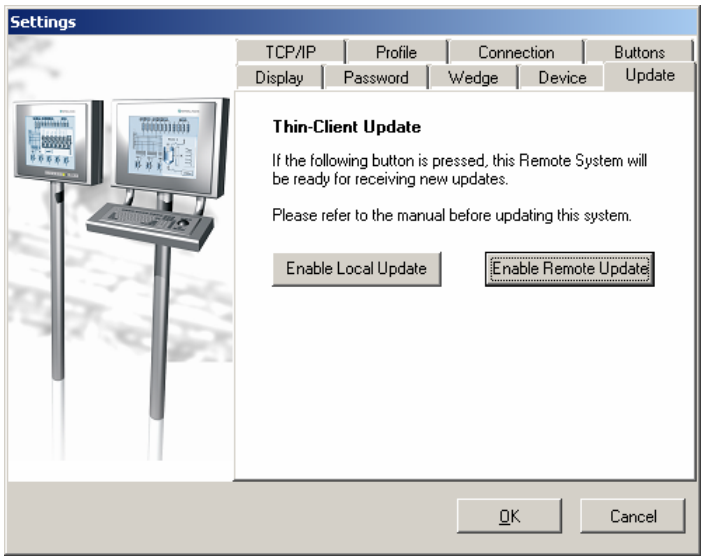
Notes:

- The local keyboard layout only affects the local system. It is used to configure the VisuNet RM.
- If the VisuNet RM is connected to an RDP server, the keyboard layout selected on this server is used instead. The local layout is ignored!
- The following local keyboard layouts are currently supported:

Danish	English
German	Italian
Norwegian	Portuguese
Spanish	Swedish

3.3.4.9 Update

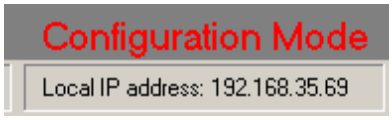
To receive new updates click one of the buttons „Enable local update“ or “Enable remote update“



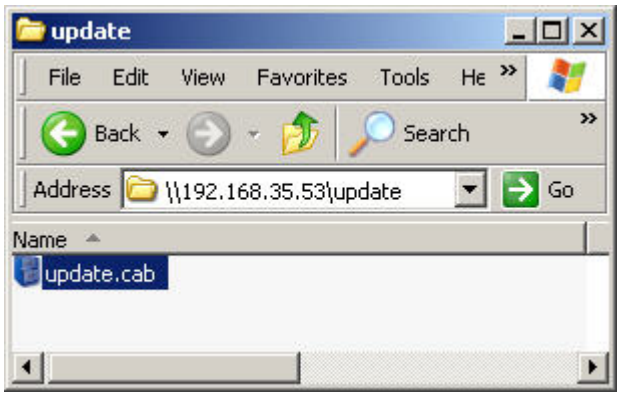
Click Enable Local Update to update the system via the USB port.

Click Enable Remote Update to update the system via the local network.

This releases a directory called "update" in the local network that can be accessed externally via \\<local-ip-address>\update. <local-ip-address> corresponds to the IP address of the thin client that appears in the bottom right-hand corner of the screen.



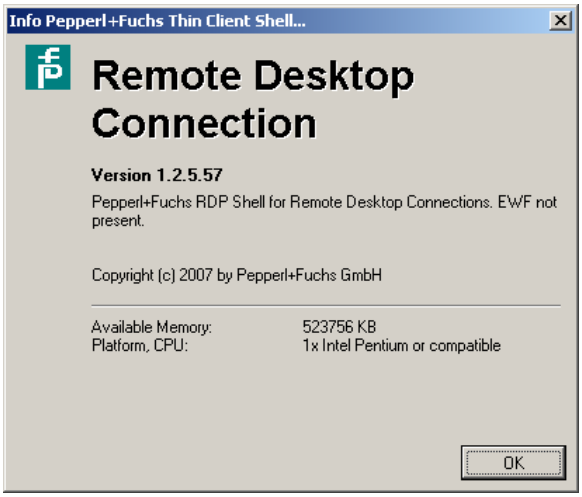
You can access the released directory by typing the address in the address line in Windows Explorer and then pressing the Enter key or clicking "Go".



Now copy the update file ("update.cab") to this directory. After a few seconds, the update is automatically installed and the system is rebooted twice.

3.3.5 About

This dialog shows copyright information and the version number of the RDP shell.



Note: The version number is extremely useful for support purposes, and you should have it ready in case you contact our Support team.

3.4 The VisuNet Control Center

The VisuNet Control Center (also known as VisuNetCC) is a separate Windows program that allows all VisuNet RMs in the network to be administered from one computer.

You can download the software from the P+F website at <*VisuNet/Software/VisuNet Control Center*>.

After double clicking VisuNetCC.exe, you initially see an empty window. Run a “Network Scan” (in the main menu under “Run/Network Scan”) to display a list of all available VisuNet RMs (see **Fig. 2**).

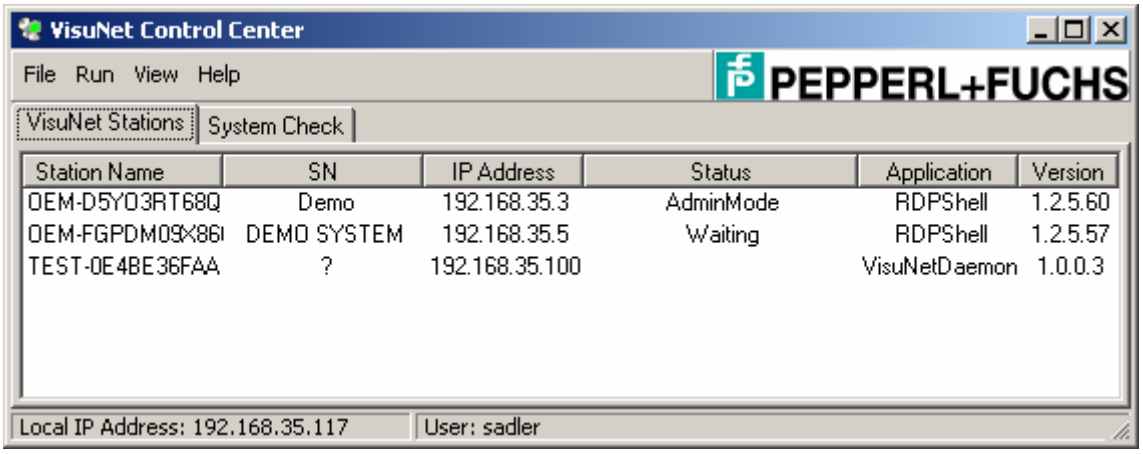


Fig. 2: The VisuNet Control Center lists all VisuNet RMs in the network

3.4.1 The main menu

The main menu commands are described in brief below:

File	
Close	Closes the VisuNet Control Center

Run	
Network Scan	Scans the network for all VisuNet RMs
System Check	Shows a summary of the most important local settings an

View	
Message Log	Shows low-level messages for diagnostic purposes

Help	
About	Shows copyright and version information

3.4.2 The popup menu

After selecting a VisuNet RM, you can open the following popup menu:

Connect VisuNet RM…	Connects the VisuNet RM to a defined profile
Disconnect VisuNet RM…	Disconnects the VisuNet RM from the current profile
Autostart pause…	Autostart with a profile is deactivated (for servicing)
Autostart resume…	Autostart with a profile is reactivated
Lock/unlock input…	Locks / unlocks local inputs
Keyboard enable/disable…	Enables / disables keyboard inputs
Mouse enable/disable…	Enables / disables mouse actions
Read configuration…	Reads VisuNet RM settings and saves them locally
Write configuration…	Writes VisuNet RM settings and saves them remotely
Update VisuNet RM…	Downloads an update to the VisuNet RM
Send command…	Sends a command direct to the VisuNet RM
Reboot saving changes…	Reboots the VisuNet RM and saves all changes
Reboot cancel changes…	Reboots the VisuNet RM without saving changes

3.4.3 The command line

The VisuNet Control Center is the central interface to the VisuNet RMs installed in the field. You can communicate with other programs (e.g. SCADA software) using the command line.

The RDP shell commands (Version 1.2.5.62) are described below.

Command=	Description
Broadcast	Displays a list of all VisuNet RMs in the network
Connect (profil.rdp)	Establishes a connection to the specified profile
Disconnect	Releases the current connection
InputDisable	Disables local inputs
InputEnable	Enables local inputs again
AutostartPause	Autostart with a profile is deactivated
AutostartResume	Autostart with a profile is reactivated
ReadConfiguration	Reads and outputs VisuNet RM settings
RebootSavingChanges	Reboots the VisuNet RM and saves all changes
RebootCancelChanges	Reboots the VisuNet RM without saving changes
KeyboardDisable	Disables keyboard inputs
KeyboardEnable	Enables keyboard inputs again
MouseDisable	Disables mouse actions
MouseEnable	Enables mouse actions again
GetLastEvent	Return status of the last mouse/keyboard event
VNCArbitration(XX)	VNC arbitration: locks all inputs for XXX seconds

By additionally specifying the IP address, you can send the above commands direct to a specific VisuNet RM. In this case, the commands are ignored by all other VisuNet RMs!

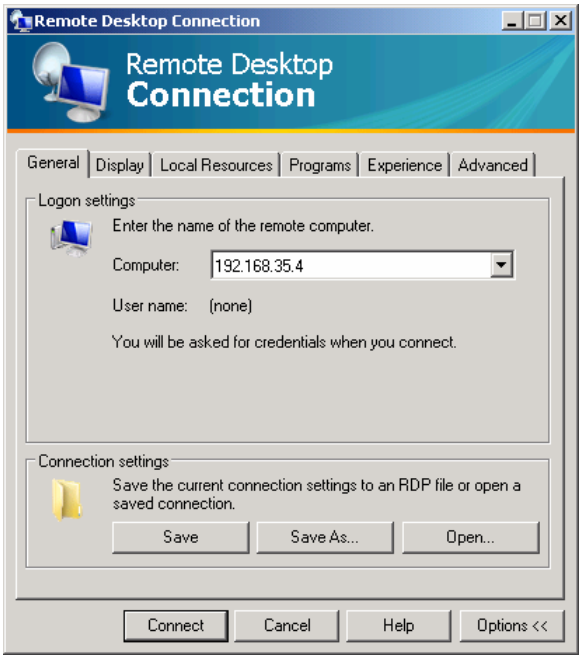
Examples:

1. To reboot the device with IP address 192.168.101.25:
   ```
   > VisuNetCC.exe Command=RebootCancelChanges IP=192.168.101.25
   ```

4 Configuring Remote Desktop Connection (client)

4.1 How to provide information for automatic logon

1. In the *Remote Desktop Connection* dialog, type the IP address of the host system next to Computer.
2. You can specify advanced settings by clicking *Options*.
3. Click *Connect*.
4. You are now prompted to specify your user name and password. By checking the *'Save my password'* box, you save the user data in the profile.

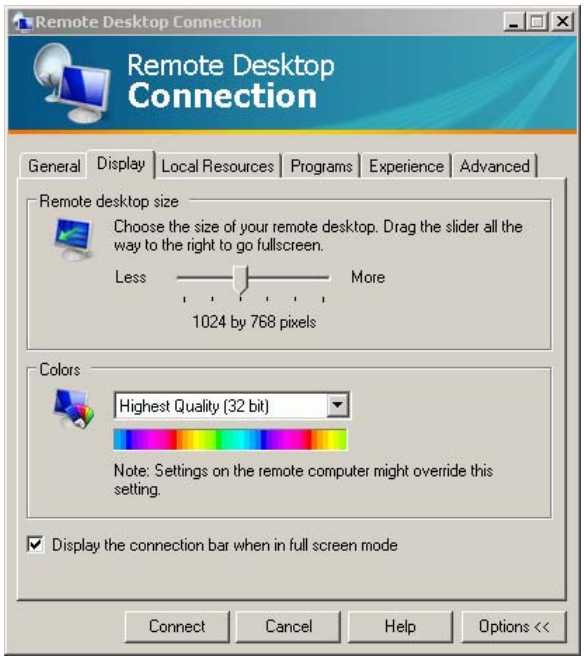


Notes:

- To open the *Remote Desktop Connection* dialog, open the 'Settings'/'Profiles' dialog in Configuration Mode and select 'New…' or 'Edit…'.
- You might be prompted to supply your password upon connection, even if you saved it for automatic logon when you entered it in the Remote Desktop Connection dialog. This depends on the policies of your network or the configuration of the terminal server to which you want to connect.

4.2 How to change the screen size and color settings for connections

1. In the Remote Desktop Connection window, click Options.
2. On the **Display tab**, under Remote desktop size and color list, drag the slider to choose the size of your remote desktop. Drag the slider all the way to the right for full screen.
3. Click Connect.

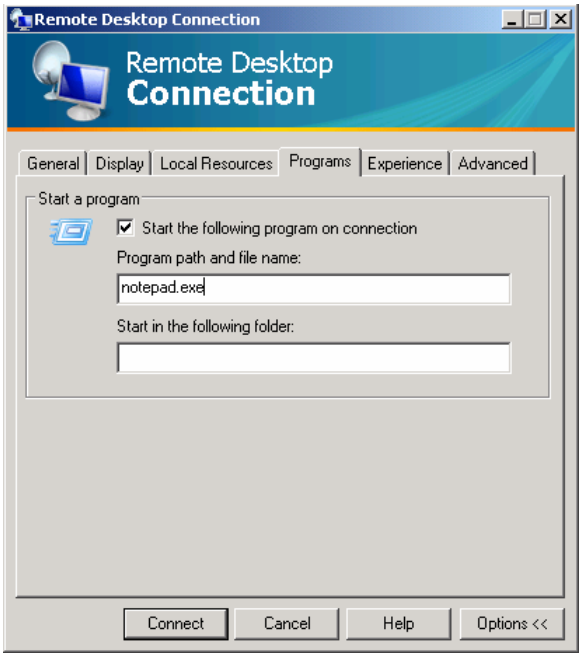


Note:

- To open the *Remote Desktop Connection* dialog, open the 'Settings'/'Profiles' dialog in Configuration Mode and select 'New…' or 'Edit…'.
- Depending on the policies of your network or the configuration of the terminal server to which you want to connect, the maximum color resolution for your remote connection might be limited. If the color resolution you select is higher than the allowable setting, Remote Desktop Connection creates the connection at the maximum allowable color resolution

4.3 How to specify a program to start on connection

1. In the Remote Desktop Connection window, click Options.
2. On the **Programs tab**, under Start a program, click Start the following program on connection.
3. In the Program path and file name box, type the path and file name of the program that you want to run after the connection is created.
4. Optionally, in the Start in the following folder box, type the path to the working directory of the program.
5. Click Connect.



Note:

- To open the *Remote Desktop Connection* dialog, open the 'Settings'/'Profiles' dialog in Configuration Mode and select 'New…' or 'Edit…'.
- If this option is checked, only the specified program runs on the host system when a connection is established.

- There are two ways to end a session:
  1. By closing the program. This ends the session and releases the connection to the host system. Windows XP Professional and Windows 2003 servers behave identically in this respect.
  2. To simply disconnect the session and leave the program running on the remote computer, click the computer icon in the top right-hand corner of the Remote Desktop window with the right mouse button, then select Close in the popup menu.
     However, this option works only if you are connected to a terminal server.
- To specify a path, type the drive letter followed by a colon (:) and a backslash (\). Then type the names of the folders and subfolders that contain the file, separating each name with a backslash. Finally, type the name of the file or folder you want to open.

4.4 How to make your local serial port available in a session

1. In the Remote Desktop Connection window, click Options.
2. On the *Local Resources* tab, select *Local devices and resources*, then click *More*.
3. You then see a dialog in which you must check the ‚Serial ports' box (Fig. 4)
4. Click Connect.

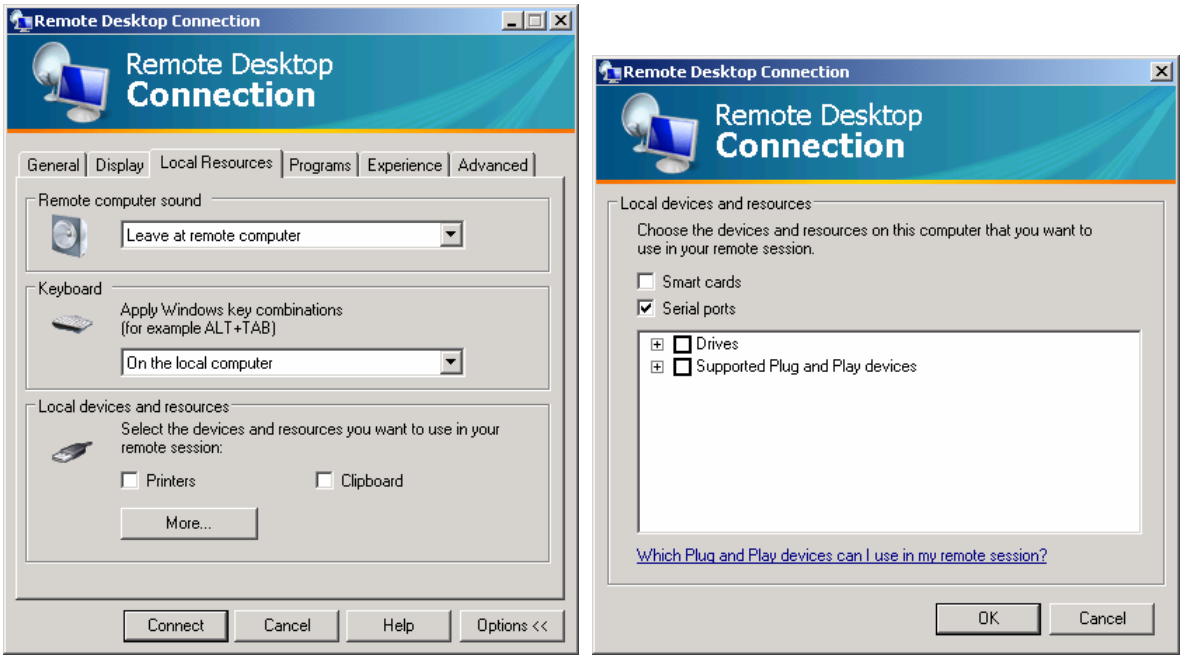
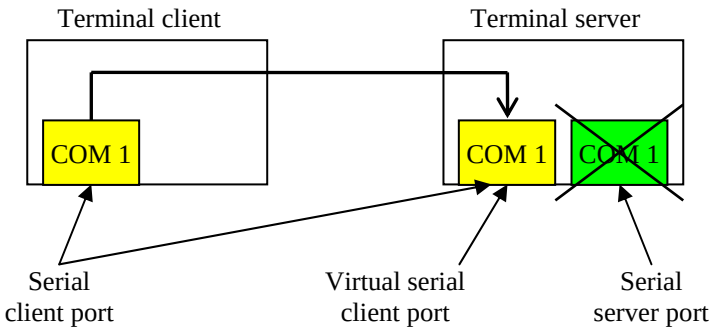


Fig.4: Settings for using the serial port on the host system

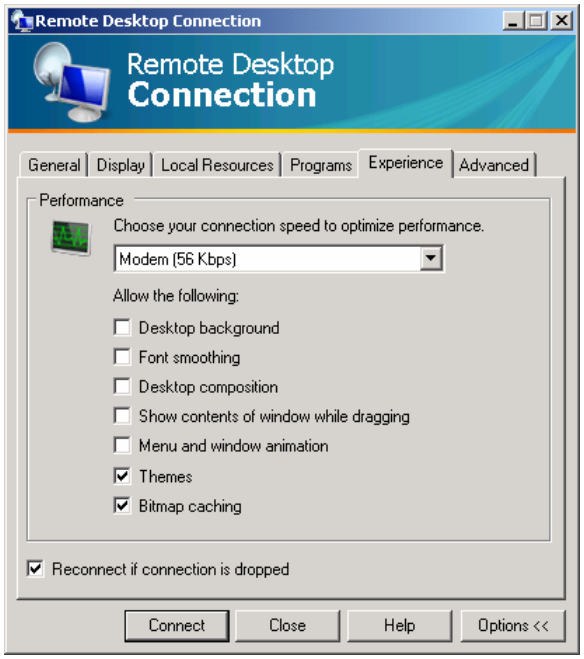
Notes:

- To open the *Remote Desktop Connection* dialog, open the ‘Settings’/’Profiles’ dialog in Configuration Mode and select ‘New…’ or ‘Edit…’.
- Depending on the policies of your network, local serial port mapping might be disabled for some or all remote connections.
- You may see a warning message upon connection telling you that the client port has been redirected. To suppress this message in the future, you must uncheck the 'Don’t prompt me again for connections to this remote computer' option.
- The serial ports on the terminal server are replaced with the newly available client ports. The serial ports on the terminal server can then no longer be accessed.
- The behavior of the serial ports made available in this way may deviate from that of normal serial ports. This could impact the functionality of some applications that access these serial ports.



4.5 How to configure bitmap caching

1. In the Remote Desktop Connection window, click Options.
2. On the **Experience tab**, verify that the Bitmap caching check box is selected. Or, to disable bitmap caching, clear the Bitmap caching check box.
3. Click Connect.

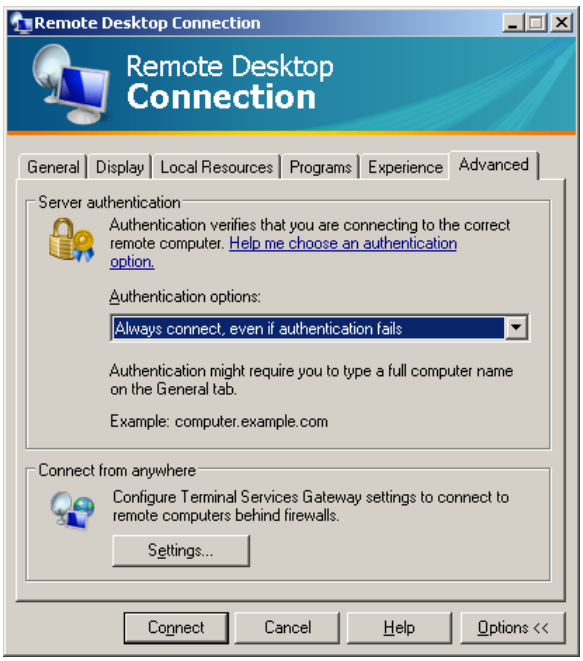


Notes:

- To open the *Remote Desktop Connection* dialog, open the 'Settings'/'Profiles' dialog in Configuration Mode and select 'New…' or 'Edit…'.
- Bitmap caching can speed up your connection by storing frequently used images on your memory. By default, bitmap caching is enabled for Remote Desktop connections. It is recommended that you use bitmap caching unless instructed otherwise by your network administrator.

4.6 How to configure the advanced connection settings

1. In the *Remote Desktop Connection* window, click *Options*.
2. Select the ***Advanced*** tab.
3. You can now specify the connection behavior of the RDP client if an authentication fails in the 'Authentication options' box. You can choose from the following options:
   - *Always connect, even if authentication fails*
   - *Warn me if authentication fails*
   - *Do not connect if authentication fails*
4. By clicking '*Settings'*, you can enter settings for Terminal Services Gateway servers.



Notes:

- To open the *Remote Desktop Connection* dialog, open the 'Settings'/'Profiles' dialog in Configuration Mode and select 'New…' or 'Edit…'.

4.7 How to disconnect without ending a session

1. In the Remote Desktop Connection window, click Start, and then click Shut Down. The Shut Down Windows dialog box appears.
2. Click Disconnect, and then click OK.

Notes:

- To open the *Remote Desktop Connection* dialog, open the 'Settings'/'Profiles' dialog in Configuration Mode and select 'New…' or 'Edit…'.
- You can also disconnect from a session by closing the Remote Desktop Connection window.
- Remote Desktop Connection automatically reconnects to this session the next time you connect to this computer (if the remote computer is configured to allow reconnection of disconnected sessions).

4.8 How to log off and end the session

1. In the Remote Desktop Connection window, click Start, and then click Shut Down. The Shut Down Windows dialog box appears.
2. Click Log Off <username>, and then click OK.

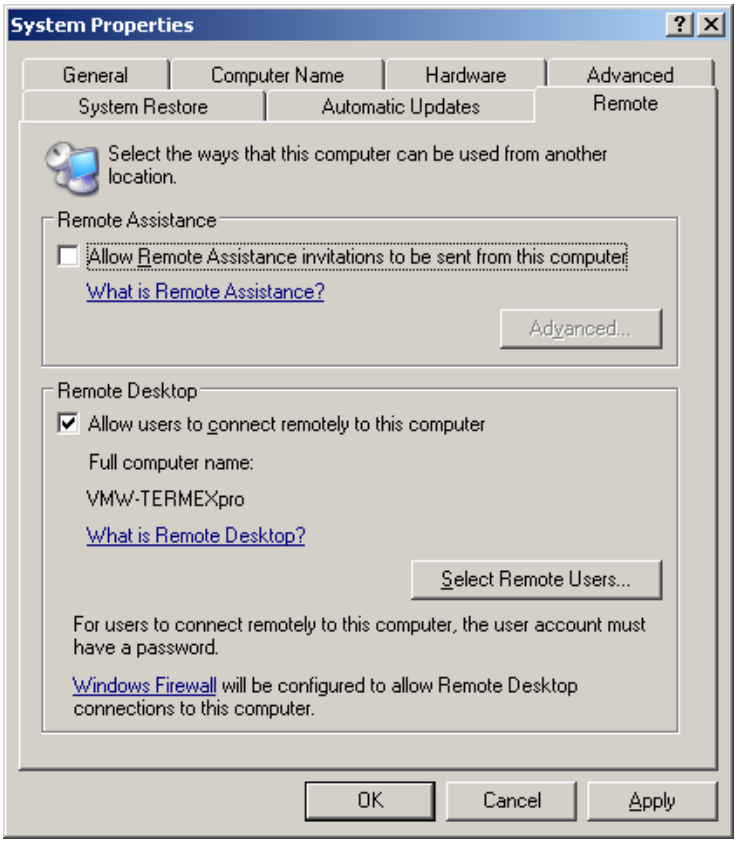
Note:

- To open the *Remote Desktop Connection* dialog, open the 'Settings'/'Profiles' dialog in Configuration Mode and select 'New…' or 'Edit…'.

5 Remote access settings (host)

5.1 How to enable the computer for Remote Desktop

1. In the Control Panel, open *System*.
2. On the ***Remote* tab**, select the *Allow users to connect remotely to this computer* check box.



3. Make sure you have the necessary access privileges to connect to the computer remotely, then click OK. You must be either an Administrator or a member of the *Remote Desktop Users* group for your computer. For more information, refer to *How to let other users use your computer*.

Notes:

- You must be logged on as an Administrator or a member of the Administrators group in order to enable the Remote Desktop function.
- To open an object in the Control Panel, click Start, then point to Settings, select Control Panel, and double click the desired icon.
- To act as the host system, you need at least **Windows XP Professional** (Home is not enough).

5.2 How to disable Remote Desktop

1. In the Control Panel, open System.
2. Clear the Allow users to connect remotely to this computer check box on the Remote tab, then click OK.

Notes:

- You must be logged on as an Administrator or a member of the Administrators group in order to disable the Remote Desktop function.
- To open an object in the Control Panel, click Start, then point to Settings, select Control Panel, and double click the desired icon.

5.3 How to let other users use your computer

1. In the Control Panel, open System.
2. Select the Remote tab.
3. In the Remote Desktop area, click Select remote users.
4. In the Remote desktop users dialog, click Add.
5. In the Select users dialog box, click Locations... to specify the search location.
6. Click Object types... to specify the types of objects you want to search for.
7. Type the names of the objects you want to search for in the Enter the object names to select (examples): box.
8. Click Check names.
9. When the name is located, click OK. This name now appears in the list of users in the Remote desktop users dialog.

Notes:

- To open an object in the Control Panel, click Start, then point to Settings, select Control Panel, and double click the desired icon.
- You must be logged on as an Administrator or a member of the Administrators group in order to add a user to the Remote Desktop Users group.

5.4 Customizing the screen saver

To customize the screen saver on the server while a session is in progress, carry out the following steps:

1. In the Control Panel, open Display.
2. Select the Screen Saver tab.
3. Mark the required screen saver and specify the time after which this screen saver should be activated.

During an RDP session you only see a black screen and possibly an hourglass instead of the screen saver.

Notes:

- If you change the screen saver settings during a session, the new settings are not limited to the current session but also affect the server.

5.5 Security

5.5.1 Best practices for security

- Add yourself to the Remote Desktop Users group for your computer. When you do this, you do not have to log on as an Administrator to access your computer remotely. You should not add yourself to the Administrators group, and you should avoid running your computer while you are logged on as an Administrator unless you are doing tasks that are restricted to Administrators. For most computer activity, log on as a member of the Users or Power Users group. If you need to perform an Administrator-only task, log on as an Administrator, perform the task, and then log off.
- You should require all users who make remote connections to use a strong password. This is especially important if your computer connects directly to the Internet via a cable modem or broadband.

5.5.2 Generally

- It is not integrated a AntiVirus software package.
- The operating system runs off completely in RAM. Changes and/or manipulations by viruses disappeared with the next reboot then again. That is substantially better than antivirus software packages which cannot be updated in a plant constantly.
- Because there is only used a (genuine) subset of a normal XP operating system, offers themselves also only a genuine subset of attack region for potential viruses. That means, that on the system only the services run and the ports are open which are actually used.

PROCESS AUTOMATION – PROTECTING YOUR PROCESS

Worldwide Headquarters
Pepperl+Fuchs GmbH
68307 Mannheim · Germany
Tel. +49 621 776-0
E-mail: info@de.pepperl-fuchs.com

USA Headquarters
Pepperl+Fuchs Inc.
Twinsburg, Ohio 44087 · USA
Tel. +1 330 4253555
E-mail: sales@us.pepperl-fuchs.com

Asia Pacific Headquarters
Pepperl+Fuchs Pte Ltd.
Company Registration No. 199003130E
Singapore 139942
Tel. +65 67799091
E-mail: sales@sg.pepperl-fuchs.com

www.pepperl-fuchs.com

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