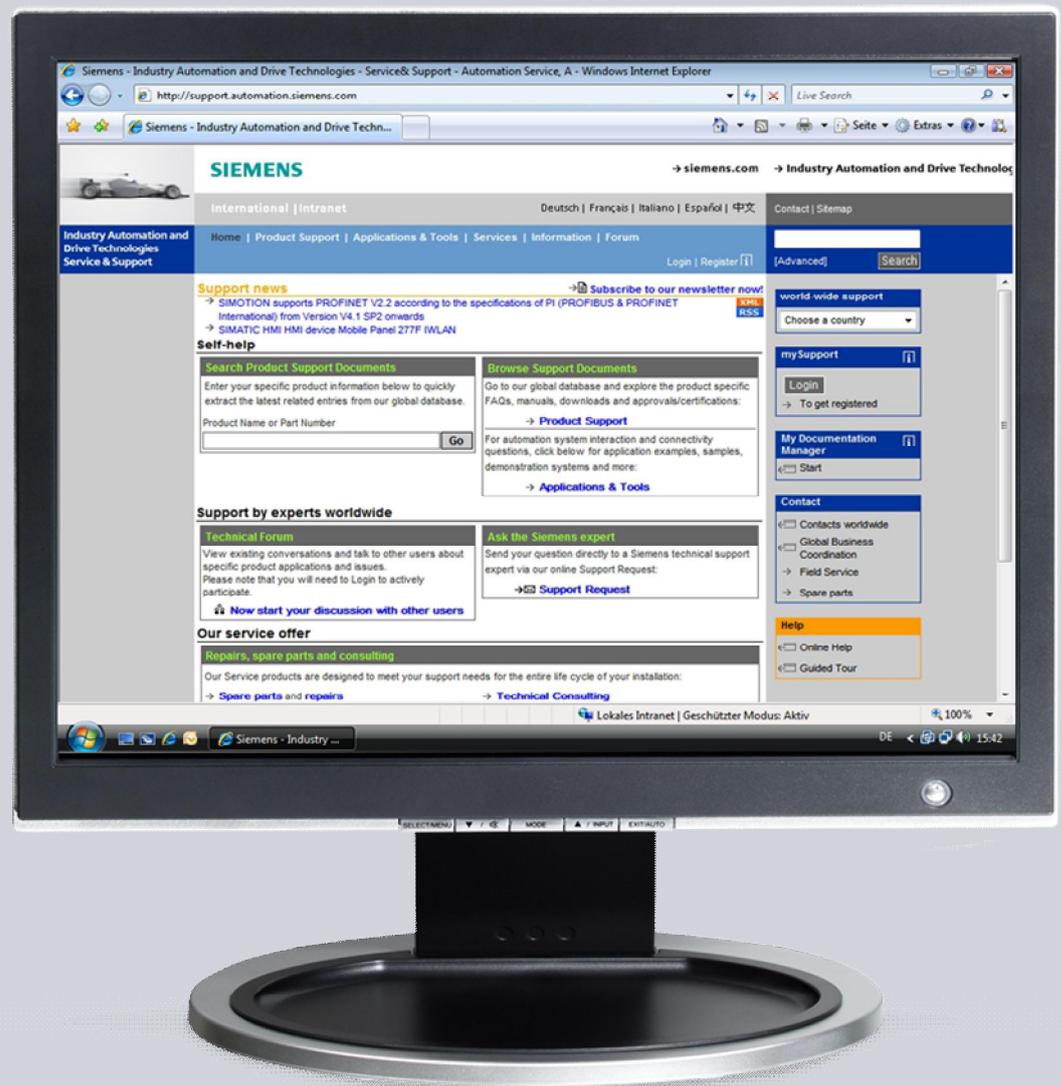


Operating System Update with WinCC (TIA Portal)

WinCC (TIA Portal)

FAQ • July 2014



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Question

How do you do an operating system update (OS update) on operator panels with WinCC (TIA Portal)?

Answer

Follow the instructions and notes listed in this document for a detailed answer to the above question.

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1 Operating System Update with WinCC (TIA Portal)

When you install WinCC (TIA Portal), an Image file is installed as well for each operator panel listed in the hardware catalog of WinCC (TIA Portal). On the configuration PC, there is always only **one** Image file per operator panel. This depends on the version of WinCC (TIA Portal) installed.

When you install a newer or older version of WinCC (TIA Portal), the Image files available are replaced by the currently installed version of WinCC (TIA Portal).

The Image file includes the operating system and system files of the operator panel concerned.

Note

As from WinCC V11 you no longer need an operating system update in the different versions (for example, WinCC V11 SP1, WinCC V11 SP2, etc.). When you transfer a project, all the currently associated system files (DLLs) are also transferred automatically to the operator panel. The **Basic Panels** are the exception here.

Below we provide you with an overview of when you must update an operating system and how to do the update with WinCC (TIA Portal).

- If the operating system of an operator panel is not compatible with the version of WinCC (TIA Portal) currently being used.
- If an Image file version of WinCC flexible is installed on the operator panel. In both cases mentioned above you must update the operating system on the operator panel before transferring the project. Information about this is available in section 1.1 "Operating System Update (OS Update)".
- If there is no operating system running on the operator panel, then you can only update the operating system using the "**Reset to factory settings**" function. Information about this is available in section 1.2 "Resetting the Operator Panel to the Factory Settings (Booting)".
- If you have questions about establishing the connection or problems with the operating system update, please refer to chapters 2 "Additional Information" and 3 "Problem Analysis".

Notes

Updating the operating system deletes all the data on the operator panel.

Therefore, first make a backup of the data below:

(using ProSave or Automation License Manager, for example)

- User administration (ProSave)
- Recipes (ProSave)
- Licenses (**A**utomation **L**icense **M**anager), if you reset the operating system to the factory settings.
Information about this is available in Entry ID: [27005215](#)

1.1 Operating System Update (OS Update)

Before making a project transfer WinCC (TIA Portal) checks the version of the operating system installed on the operator panel connected. If the operating system installed on the operator panel is different to the version of WinCC (TIA Portal) being used, you get the message below. (For example, if a WinCC flexible Image is installed on the operator panel or a Basic Panel is concerned.)

Figure 1-1



If you confirm with the "Yes" button, the version of the operating system on the operator panel is updated automatically and the configuration is transferred.

Notes

Before starting the operating system update, set the operator panel to Transfer mode.

1.2 Resetting the Operator Panel to the Factory Settings (Booting)

If there is no operating system running on the operator panel, then you can only update the operating system using the "Reset to factory settings" function. This is the case, for example, if the following message is displayed when you start up the operator panel: No image found. Waiting for image update...

Another application is when you would like to reset all the settings in the Control Panel of the operator panel to the factory settings. In this case, too, you can use the "Reset to factory settings" function.

Notes

If you reset the operating system to the factory settings, you cannot use all the communication connections and cables.

Information about which cable you can use for which operator panel is available in section 2.1.2 "Resetting the Operator Panel to the Factory Settings (Booting)".

1.2.1 Operator Panel with Defective Operating System

Table 1-1

No.	Procedure
1.	<p>Back Up Licenses and Authorizations</p> <p>If the operator panel no longer boots automatically, then you can no longer access the file system. Then you cannot back up the existing recipes and licenses.</p>
2.	<p>PG/PC: Setting the PG/PC interface</p> <p>You only have to make a setting in the PG/PC interface with the "Ethernet" transfer type.</p> <ul style="list-style-type: none"> • Open the "PG/PC interface" under "Start > Settings > Control panel > Set PG/PC interface". <ul style="list-style-type: none"> - Select S7ONLINE under "Access point of the application". - Under "Interface Parameter Assignment Used" you select "TCP/IP -> <Network Card Name>".
3.	<p>Operator panel: make transfer settings on the operator panel</p> <p>No transfer settings can or need to be made on the operator panel.</p>
4.	<p>Operator panel: power supply</p> <p>Switch off the power supply for the operator panel.</p>
5.	<p>Establish cable connection</p> <p>Connect the operator panel to the PG/PC according to the transfer type selected.</p>

No.	Procedure
6.	<p>WinCC (TIA Portal): set transfer mode</p> <p>You select the PG/PC interface depending on the communication connection selected - serial, USB/PPI or Ethernet.</p> <ul style="list-style-type: none"> • In the project navigation, mark the operator panel of which the Image file is to be updated. • In the menu bar you select "Online > Extended download to device...". • Make the relevant settings in the dialog displayed. <ul style="list-style-type: none"> - Ethernet: An Ethernet address does not have to be specified. You can apply a configured Ethernet address (Config IP). - Serial: You can specify a baud rate of your choice. <p>Note: For project transfer with the RS232/PPI multi-master cable you must set the fifth DIP switch to the ZERO position (PPI/Freeport). Use the DIP switches to set the highest baud rate on the cable.</p> <ul style="list-style-type: none"> • Click the "Load" button. The "Load preview" window opens. • "Load preview" window. When the "Load preview" window opens, the configuration is compiled and the system applies the transfer settings made. Close the window with the "Cancel" button. <p>Note: From now on you cannot change the transfer type.</p>
7.	<p>WinCC (TIA Portal): reset to the factory settings</p> <ul style="list-style-type: none"> • In the "Online > HMI operator panel maintenance" menu bar you select the "Update operating system" command. The SIMATIC ProSave [OS Update] dialog opens. The path with the image of the operating system is already preset. (You can also choose a different path for the image of the operating system). • Enable the "Reset to factory settings" option. The input field is displayed for the MAC address with the "Ethernet" transfer type. In this case, you enter the operator panel's "MAC address". Refer to section 2.3 for how to determine the MAC address. • Click the "Update OS" button. You will then receive a security warning. Read the note. Acknowledge the message with "Yes" and you will be requested to reboot the operator panel. • Switch the operator panel on again. The Image file update starts. (This procedure start can take quite a long time). <p>Note If the "Reset to factory settings" check box is not displayed, refer to section 3.2.</p>
8.	<p>Transfer project</p> <p>After the installation has been completed, the operator panel remains in Transfer mode.</p> <p>For a subsequent project transfer, you first make the required transfer settings on the operator panel.</p> <p>For Touch operator panels, you should calibrate the screen beforehand under "Control Panel > OP > Touch".</p>

1.2.2 Operator Panel with Intact Operating System

Below we take the example of a TP700 Comfort to show how to reset an operator panel to the factory settings via Ethernet.

Table 1-2

No.	Procedure
1.	<p>PG/PC: back up licenses, recipes, etc.</p> <p>Before resetting your operator panel to the factory settings, make sure that there are no licenses, recipes, etc. on the operator panel. The "Reset to factory settings" function deletes all the data on the operator panel.</p> <p>Therefore, first make a backup of the data below (using ProSave or Automation License Manager, for example).</p> <ul style="list-style-type: none"> • User administration (ProSave) • Recipes (ProSave) • Licenses (Automation License Manager) <p>More information about this is available in Entry ID: 27005215</p>
2.	<p>PG/PC: set the PG/PC interface</p> <p>You only have to make a setting in the PG/PC interface with the "Ethernet" transfer type.</p> <ul style="list-style-type: none"> • Open the "PG/PC interface" under "Start > Settings > Control panel > Set PG/PC interface". <ul style="list-style-type: none"> - Select S7ONLINE under "Access point of the application". - Under "Interface Parameter Assignment Used" you select "TCP/IP -> <Network Card Name>".
3.	<p>Operator panel: MAC address of the operator panel</p> <p>To continue you need the MAC address of the operator panel. Please refer to section 2.3 to determine the MAC address.</p>
4.	<p>Operator panel: boot settings on the operator panel</p> <ul style="list-style-type: none"> • In the Control Panel of the operator panel you open the "OP" dialog and select the "Device" tab. • Click the "Reboot" button. Another window opens with two "boot options". <ul style="list-style-type: none"> - Reboot - Prepare for Reset <p>Leave this window open for the time being.</p>
5.	<p>Establish cable connection</p> <p>Connect the operator panel and the PG/PC using an Ethernet cable (cross-over or patch cable).</p>

No.	Procedure
6.	<p>WinCC (TIA Portal): set transfer mode</p> <p>If "Ethernet" is not preset for the transfer mode, then proceed as follows.</p> <ul style="list-style-type: none"> • In the project navigation, mark the operator panel of which the operating system is to be updated. • In the menu bar you select "Online > Extended download to device...". • Make the relevant settings in the dialog displayed. <ul style="list-style-type: none"> - PG/PC interface type: Ethernet - PG/PC interface: Ethernet • Click the "Load" button. The "Load preview" window opens. • "Load preview" window. When the "Load preview" window opens, the configuration is compiled and the system applies the transfer settings made. Close the window with the "Cancel" button. <p>Note: From now on you cannot change the transfer type.</p>
7.	<p>Operator panel: reset to the factory settings</p> <ul style="list-style-type: none"> • In the "Online > HMI operator panel maintenance" menu bar you select the "Update operating system" command. The "SIMATIC ProSave [OS Update]" dialog opens. The path with the image of the operating system is already preset. (You can also choose a different path for the image file). • Enable the "Reset to factory settings" option. An input field is displayed for the MAC address. • Enter the operator panel's "MAC address". Refer to section 2.3 for how to determine the MAC address. • Click the "Update OS" button. You will then receive a security warning. Read the note. Acknowledge the message with "Yes" and you will be requested to reboot the operator panel. • On the operator panel you click the "Prepare for Reset" (see link). The operator panel boots automatically and is reset to the factory settings. (This procedure start can take quite a long time). <p>Note If the "Reset to factory settings" check box is not displayed, refer to section 3.2.</p>
8.	<p>Transfer project</p> <p>After the installation has been completed, the operator panel remains in Transfer mode.</p> <p>For a subsequent project transfer, you first make the required transfer settings on the operator panel.</p> <p>For Touch operator panels, you should calibrate the screen beforehand under "Control Panel > OP > Touch".</p>

2 Additional Information

2.1 Cable Connection between PC and Operator Panel

2.1.1 Operating System Update

When performing an operating system update, you can use **all** the communication connections supported by your operator panel.

2.1.2 Resetting the Operator Panel to the Factory Settings (Booting)

If you reset the operating system to the factory settings, you **cannot** use all the communication connections and cables.

Information on this is available in the table below.
The settings were made in ProSave version V9.0.0.0.

Table 2-1

Operator Panel	RS 232 Zero modem cable	RS232/PPI Multi-master cable	USB/PPI Multi-master cable	PN PtP Cross	PN Ethernet
	6ES7 901- 1BF00-0XA0	6ES7 901- 3CB30-0XA0	6ES7 901- 3DB30-0XA0	6XV1 870- 3RH20 * ¹)	Standard Ethernet CAT5
KP300 Basic mono PN	--	--	--	X	X
KTP400 Basic mono PN	--	--	--	X	X
KTP600 Basic DP	--	X	X	--	--
KTP600 Basic PN	--	--	--	X	X
KTP600 Basic mono PN	--	--	--	X	X
KTP1000 Basic DP	--	X	X	--	--
KTP1000 Basic PN	--	--	--	X	X
TP1500 Basic PN	--	--	--	X	X
OP 73	--	X	X	--	--
OP 77A	--	X	X	--	--
OP 77B	X	--	--	--	--
TP 177A	--	X	X	--	--
TP 177B PN/DP	--	X	X ^{*2})	--	--
TP 177B mono DP	--	X	X ^{*2})	--	--
TP 177B 4" color PN/DP	--	--	--	X	X
OP 177B PN/DP	--	X	X ^{*2})	--	--

Operator Panel	RS 232 Zero modem cable	RS232/PPI Multi-master cable	USB/PPI Multi-master cable	PN PtP Cross	PN Ethernet
OP 177B mono DP	--	X	X ^{*2)}	--	--
TP 277	--	X	X ^{*2)}	--	--
OP 277	--	X	X ^{*2)}	--	--
KP400 Comfort	--	--	--	X	X
KTP400 Comfort	--	--	--	X	X
KP700 Comfort	--	--	--	X	X
TP700 Comfort	--	--	--	X	X
KP900 Comfort	--	--	--	X	X
TP900 Comfort	--	--	--	X	X
KP1200 Comfort	--	--	--	X	X
TP1200 Comfort	--	--	--	X	X
MP177	--	X	X ^{*2)}	--	--
MP 277	--	X	X ^{*2)}	--	--
MP 377	--	--	--	X	X
Mobile Panel 177 DP	--	X	X ^{*2)}	--	--
Mobile Panel 177 PN	--	X	X ^{*2)}	--	--
Mobile Panel 277	--	X	X ^{*2)}	--	--

*1) For the RS232/PPI multi-master cable you set DIP switches 1 to 3 according to the baud rate selected in ProSave.

DIP switches 4 to 8 must all be set to ZERO.

*2) With this cable connection you cannot deselect the "Reset to factory settings" option.

2.2 Set the Image Path / File in ProSave

In the following case, you must change the Image path or the Image file accordingly.

After you have set the WinCC flexible Image path for the operator panel displayed, you must set the Image path for WinCC (TIA Portal) if you now wish to use the same operator panel in WinCC (TIA Portal).

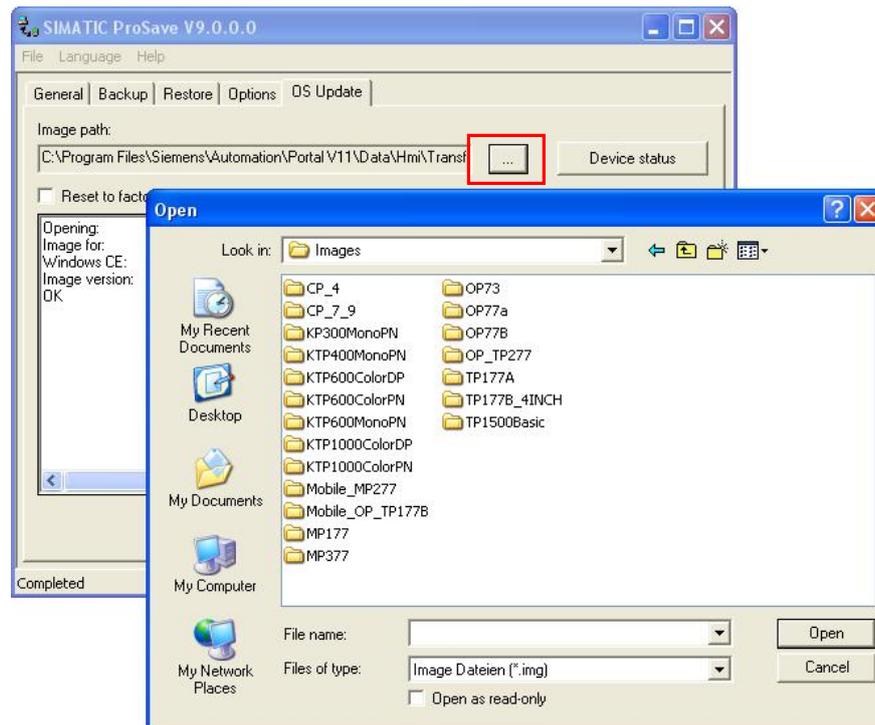
Notes

- The image path setting is device-related. The setting is retained for the selected panel type after ProSave is closed.
- Beforehand, make sure that the correct Image path is set. This applies, in particular, if WinCC flexible and WinCC (TIA Portal) are installed jointly on your computer.

In order to set the image path in ProSave, click the button to the right of the Image path and browse through the folder tree to specify the folder path in which the Image files are located.

In the folders you find the image files required for the respective operator panel.

Figure 2-1



2.2.1 Image Path in WinCC (TIA Portal)

Sample Image path in WinCC (TIA Portal)

C:\Program Files\Siemens\Automation\Portal V11\Data\Hmi\Transfer\11.0\Images\OperatorPanel*.img

2.2.2 Image Path in WinCC flexible 2008

Sample Image path in WinCC flexible 2008

C:\Program Files\Siemens\SIMATIC WinCC flexible\WinCC flexible Images\Operator Panel*.img

2.3 Determine the MAC Address

You can determine the operator panel's MAC address as follows.

- The MAC address is printed on the back of the operator panel (for example, MAC-ADD.: 00-0E-8C-F8-6A-18).
- When you switch on the operator panel, the MAC address is displayed during startup.
- By way of the "Control Panel" of the operator panel. In the Control Panel you open the "OP" dialog and select the "Device" tab. This tab contains the device-specific data like the MAC address.

3 Problem Analysis

3.1 Disconnection with the RS232/PPI Multi--Master- Cable

If the connection is disconnected when updating the operating system, set a lower baud rate.

If you are using high baud rates, then you must use the RS232/PPI multi-master cable with "E-Stand 03" (development status 03) or higher.

3.2 Check Box Not Available in ProSave

If the "Reset to factory settings" check box is not displayed, then recheck the connection settings made ([Link](#)). It is possible that the operator panel does not support the transfer type required for this option.

Refer here to Table 2-1 in section 2.1.2 "Resetting the Operator Panel to the Factory Settings (Bootng)".

3.3 Check Box Cannot be Deselected in ProSave

If you use the "USB/PPI Multi-Master Cable" transfer type, then, depending on the system, on some operator panels it might not be possible to deselect the "Reset to factory settings" option.

In this case, you cannot make an operating system update (OS Update) using the cable, but can only do a "Reset to factory settings" (reboot).

Refer here to Table 2-1 in section 2.1.2 "Resetting the Operator Panel to the Factory Settings (Bootng)".

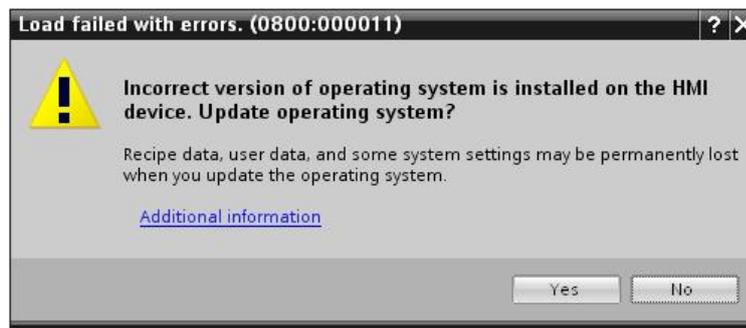
3.4 Error Message during the Transfer of the Configuration

You have changed the operating system of your operator panel and during transfer of the configuration you receive the message that the operating system version of the operator panel does not match the software version used.

In this case, prior to updating the operating system, check that the Image path has been set correctly and that you have selected the correct Image file. See section 2.2 "Set the Image Path / File in ProSave" for this.

Sample error message in WinCC (TIA Portal).

Figure 3-1



3.5 A Connection to the Operator Panel Cannot be Established

Some points are given below, which you should check if no connection is established between the operator panel and the configuration computer.

3.5.1 Check Transmission Type and Address on the Operator Panel

Compare the transfer settings on the operator panel with those on the configuration computer.

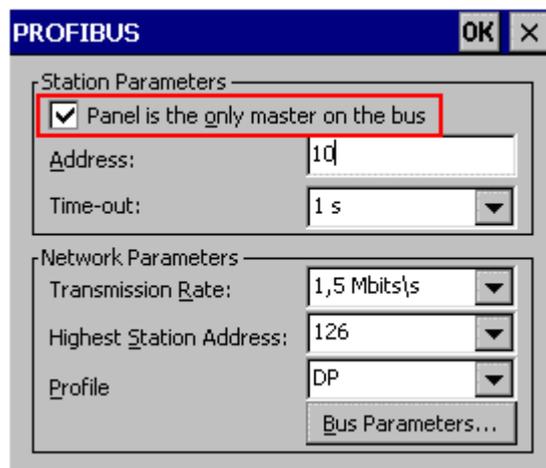
Example:

Specification of configuration computer

- Transfer via PROFIBUS
- Panel address 10

Make sure that "Panel is the only master on the bus" is checked for the transfer settings on the operator panel.

Figure 3-2



More information on the topic of "Transfer Settings" is available in Entry ID: [23802404](https://www.tia-portal.com/entry/23802404)

3.5.2 Check Cable Connection and Connector

MPI/PROFIBUS cable

Please check the following points:

- Cable connection between the operator panel and the configuration computer.
- Check the cable for damage.
- Bus connector especially the connection of the terminating resistors.
 - Terminating resistors ON/OFF.

The following guideline value applies:

- Bus terminating resistor OFF:
 - Bus connector with "two" cables connected.
- Bus terminating resistor ON:
 - Bus connector with "one" cable connected.

More information on the topic of "Bus terminating resistor" is available in Entry ID: [187276](#)

RS232/PPI multi-master cable

When using an "RS232/PPI multi-master cable", please note the switch settings.

More information on this topic is available in Entry ID: [16532946](#).

Ethernet cable

Use a "crossed" Ethernet cable for the connection between a PG/PC and an operator panel.

If you use a "patch" cable, you need a switch in addition.

Note

Operator panels with two "Ethernet interfaces" have an integrated switch.

3.5.3 Check the PG/PC Interface on the Configuration Computer

Check the PG/PC Interface on the Configuration Computer

In Windows XP:

- "Start > SIMATIC > SIMATIC NET > Set PG-PC interface".
- and
- "Start > Settings > Control Panel > Setting the PG/PC Interface"

Check the following settings of the PG/PC interface

- When setting the interface parameters in MPI or PROFIBUS, make sure that the node address is set to "0".
- We also recommend that you select the "PG/PC is the only master on the bus" option.
- Check the "Transmission rate".
- Check the "Highest station address".

Figure 3-3

