

Question:

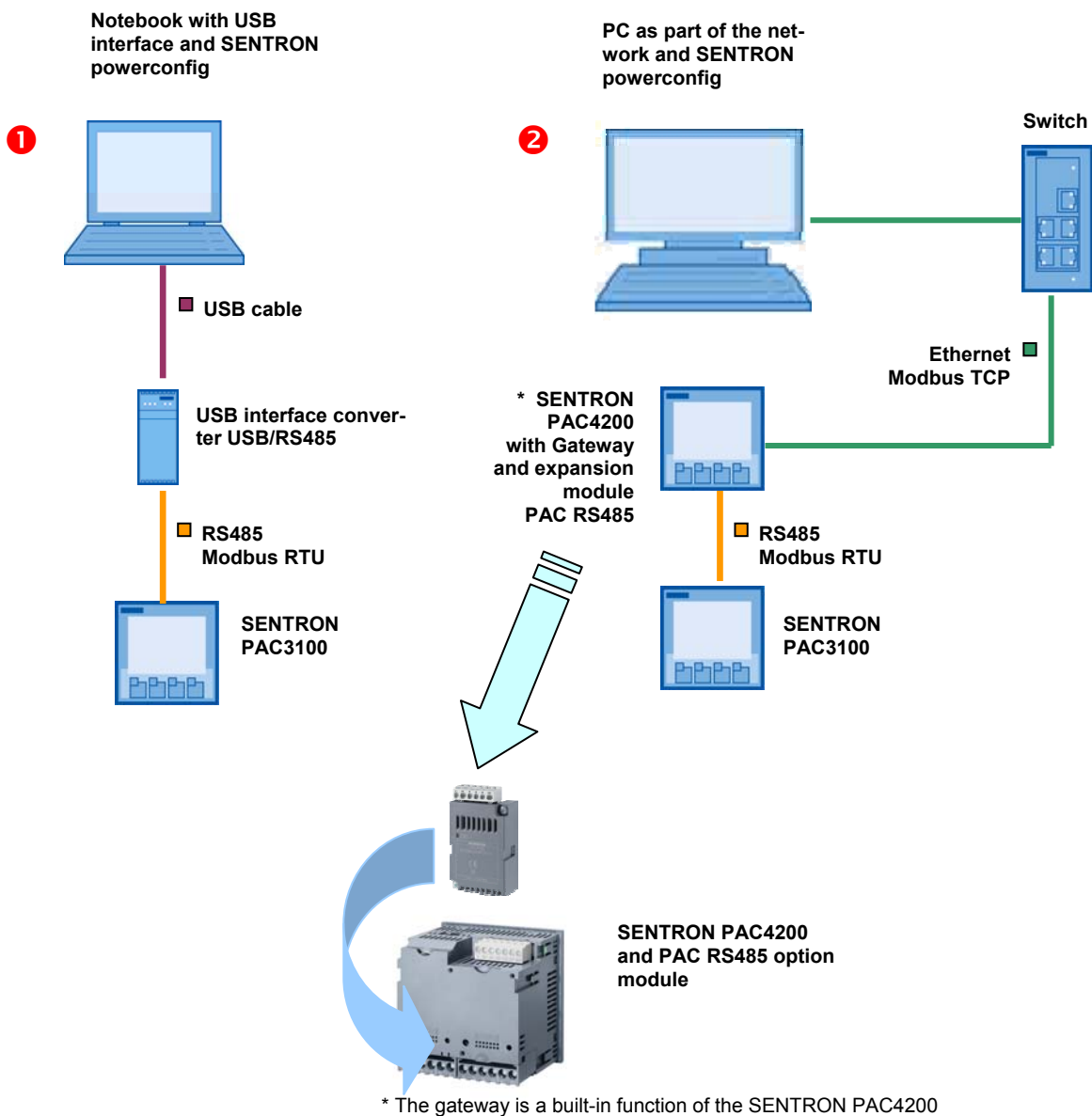
How to update the PAC3100 Firmware?

Answer:

The firmware update of the device can be done via two different communication ways:

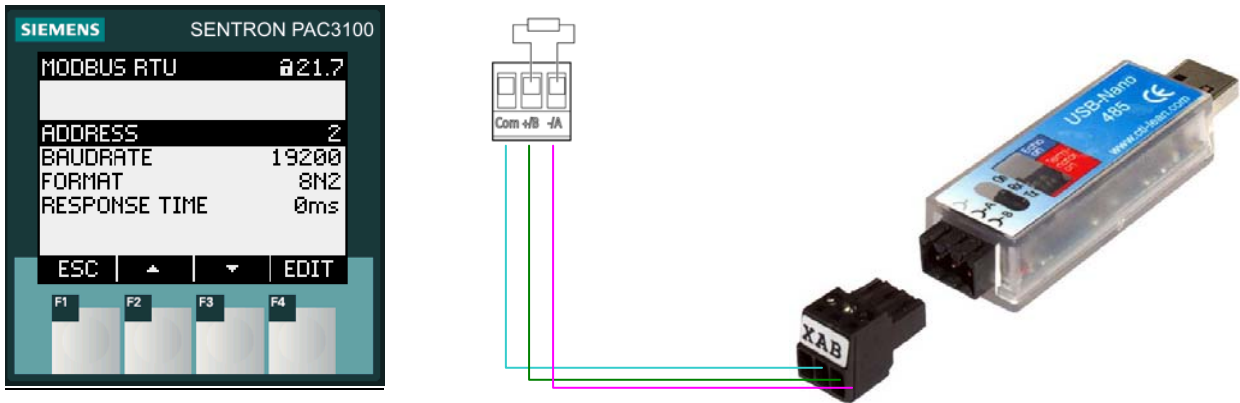
- ① Direct point to point connection using a serial port of your PC
- ② Ethernet Modbus TCP/IP connection via SENTRON PAC4200 with a PAC RS485 option module

The following diagram shows the hardware components and the communication topology



1 Example for a point to point connection between the device and a USB-Nano 485 interface converter

Please connect the SENTRON PAC3100 with the USB-Nano-485 converter using a 2 wire cable as it is shown below:



Terminal connections

PAC3100		USB-Nano-485
Com	<-->	X
+/-B	<-->	A
-/A	<-->	B

Connect a terminating resistor between terminal A and B of the PAC3100 communication plug if the device works as exclusive communication partner or as the last slave within a serial network. The resistor shall be approximately 300 Ω (not smaller than 60 Ω). The terminating resistors of the USB-Nano-485 device are "on" by default.

Necessary Hard- and Software – Components

- 1** Point to point connection using a serial port of your PC

Component	Num.	MLFB/Ordering code	Note
SENTRON powerconfig V2.1	1 St.		min. Version 2.1
SENTRON PAC3100	1 St.	7KM3133-0BA00-3AA0	
USB/RS485 interface converter	1 St.		

- 2** Ethernet Modbus TCP/IP connection via SENTRON PAC4200 and a PAC RS485 option module

Component	Num.	MLFB/Ordering code	Note
SENTRON powerconfig V2.1	1 St.		min. Version 2.1
SENTRON PAC3100	1 St.	7KM3133-0BA00-3AA0	
SENTRON PAC4200	1 St.	7KM4212-0BA00-3AA0	min. Version 1.2
Expansion module PAC RS485	1 St.	7KM9300-0AM00-0AA0	

Note



Do not switch off the SENRON PAC3100 or disconnect the communication between the PAC3100 and the PC during the firmware update!



Take care that the device address is unique within a RS485 system. The device address could be any value between 1 and 247 if the PAC3100 is not part of a serial network.



Save or write down the device configuration, meter readings and communication settings of the PAC3100. The device will be set to factory defaults after a firmware update.



The “PAC3100 with PAC4200 gateway.zip” and “PAC3100 Point to Point connection.zip” file gives you an overview about the SENTRON PAC device configuration.



Incase of communication problems deactivate the installed security-/ firewall software (Cat Client / virus scanner, windows firewall, et.....) which can limit your network service.

Project planning and initial operation

First steps

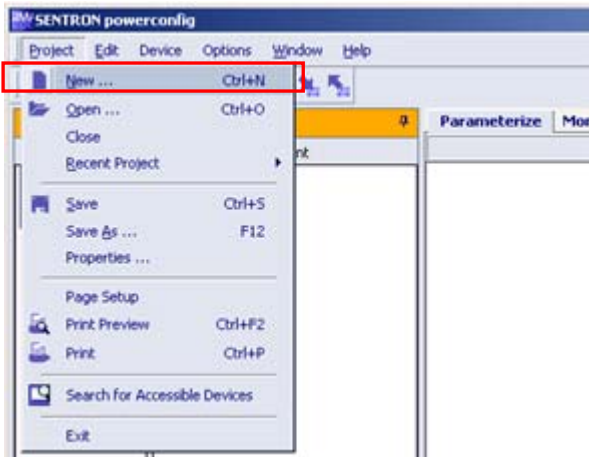
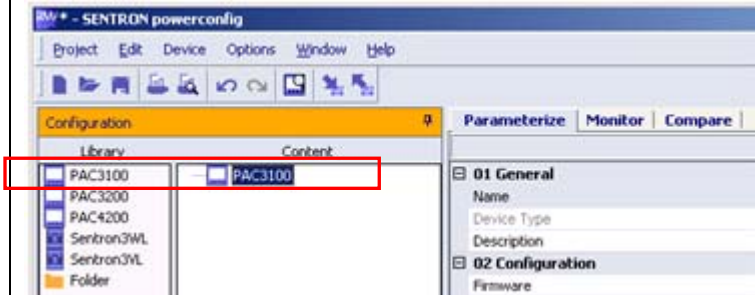
- 1** Point to point connection using a serial port of your PC

1.	Download the latest device firmware of the SENTRON PAC3100 from the Siemens Service & Support portal. Link: http://support.automation.siemens.com/WW/view/de/35378777/133100
2.	Download the latest language pack of the SENTRON PAC3100 from the Siemens Service & Support portal. Link: http://support.automation.siemens.com/WW/view/de/35378777/133100
3.	Install the device driver of the USB/RS485 interface converter.
4.	You will find a detailed technical description of the PAC3100 in the device manual. Link: http://support.automation.siemens.com/WW/view/de/35378777/133300

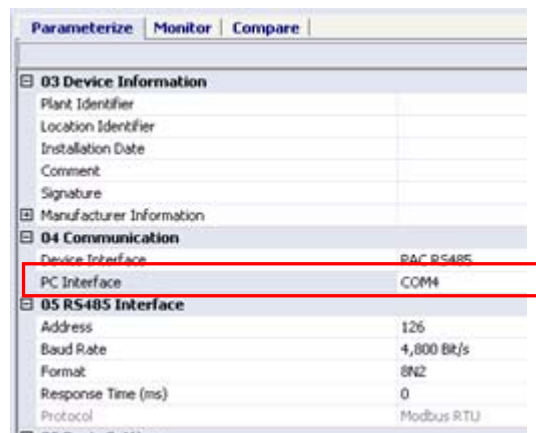
- 2** Ethernet Modbus TCP/IP connection via SENTRON PAC4200 and a PAC RS485 expansion module

1.	Download the latest device firmware of the SENTRON PAC3100 from the Siemens Service & Support portal. Link: http://support.automation.siemens.com/WW/view/de/35378777/133100
2.	Download the latest language pack of the SENTRON PAC3100 from the Siemens Service & Support portal. Link: http://support.automation.siemens.com/WW/view/de/35378777/133100
3.	Ask your network administrator if you have any question on your network topology, addressing within the network and the Ethernet settings of your PC.
4.	You will find a detailed technical description of the PAC3100 in the device manual. Link: http://support.automation.siemens.com/WW/view/de/35378777/133300
5.	You will find a detailed technical description of the PAC4200 in the device manual. Link: http://support.automation.siemens.com/WW/view/de/31675630/133300

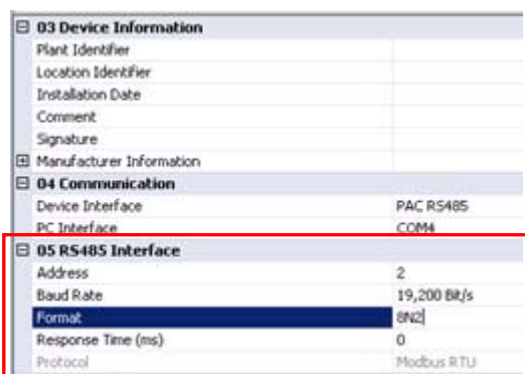
Initial operation of example ❶

Nr.	Action
1.	Connect the USB/RS485 interface converter with your PC. Select a COM-Port (e.g. COM4). Windows start -> system control -> system -> hardware -> device manager -> ports (COM & LPT).
2.	Connect the SENTRON PAC3100 with the USB/RS485 interface converter. Make sure, that the connection A-, B+, Com. is correct.
3.	Start the SENTRON powerconfig V2.1 software
4.	Create a new project in SENTRON powerconfig.
5.	Select "menu" and confirm „new project“.
	 <p>The screenshot shows the 'Project' menu in the SENTRON powerconfig software. The 'New' option is highlighted with a red rectangular box. Other visible options include 'Open', 'Close', 'Recent Project', 'Save', 'Save As', 'Properties', 'Page Setup', 'Print Preview', 'Print', 'Search for Accessible Devices', and 'Exit'.</p>
6.	Drag a PAC3100 from the library and drop it into the device tree.
	 <p>The screenshot shows the 'Configuration' window in the SENTRON powerconfig software. In the 'Library' pane on the left, the 'PAC3100' device is highlighted with a red rectangular box. In the 'Content' pane on the right, the 'PAC3100' device is also highlighted with a red rectangular box. The 'Content' pane shows a tree structure with '01 General' and '02 Configuration' folders.</p>
7.	Mark the PAC3100 in the device tree.

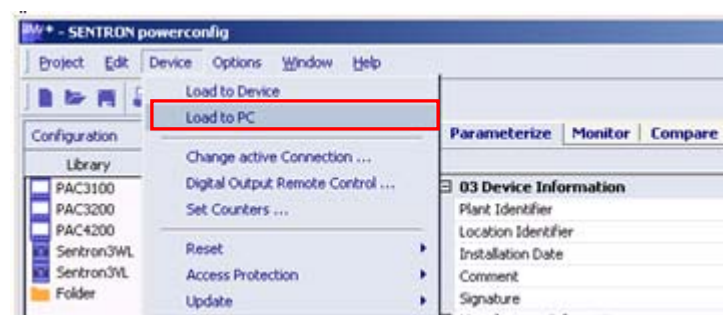
8. Choose the selected COM port in cell "PC interface" under „parameterize“, 04 communication. E.g. COM4 (must be equal with your Windows -> Settings -> Control panel -> System -> Hardware -> Device Manager -> ports (COM & LPT) settings).



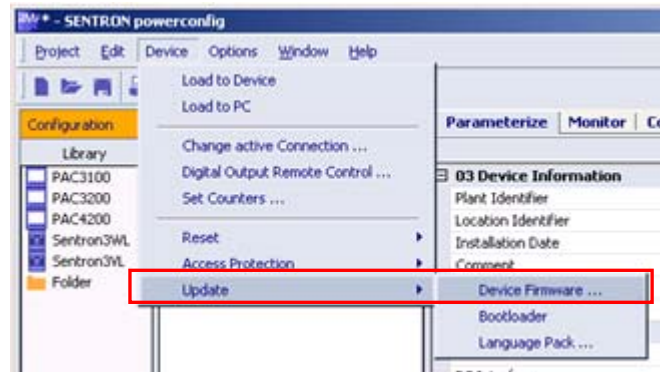
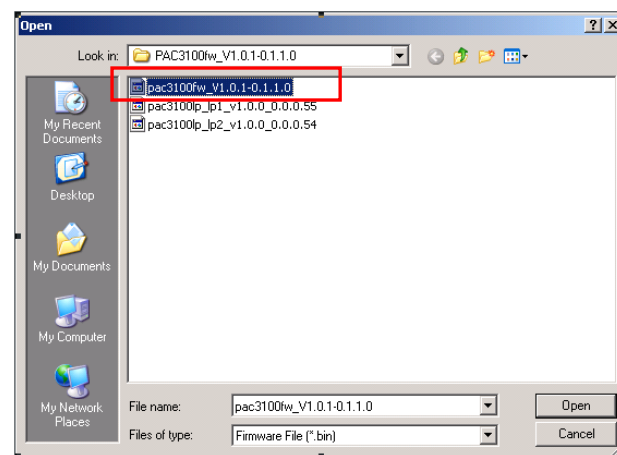
9. Fill in the communication parameters of the device from the menu 21.7 into the SENTRON powerconfig screen „parameterize“, 05 RS485 interface. E.g. address „2“, Baud rate „19200“, format „8N2“, response time „0“. **Ensure that the SENTRON powerconfig setting matches with the device settings.**



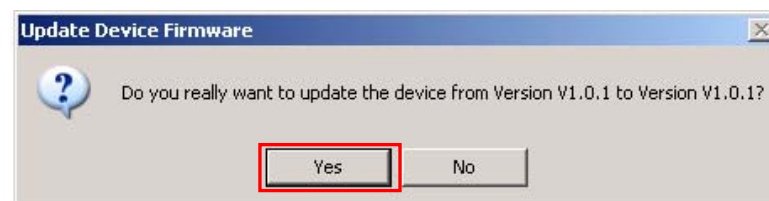
10. Check if the communication works properly by using the command menu „Device > Load to PC“



11. Select the new firmware file which you got from the Siemens Service & Support portal by opening the menu “device” -> “update” -> “device firmware”.
Link Siemens Service & Support Portal:
<http://support.automation.siemens.com/WW/view/de/35378777/133100>



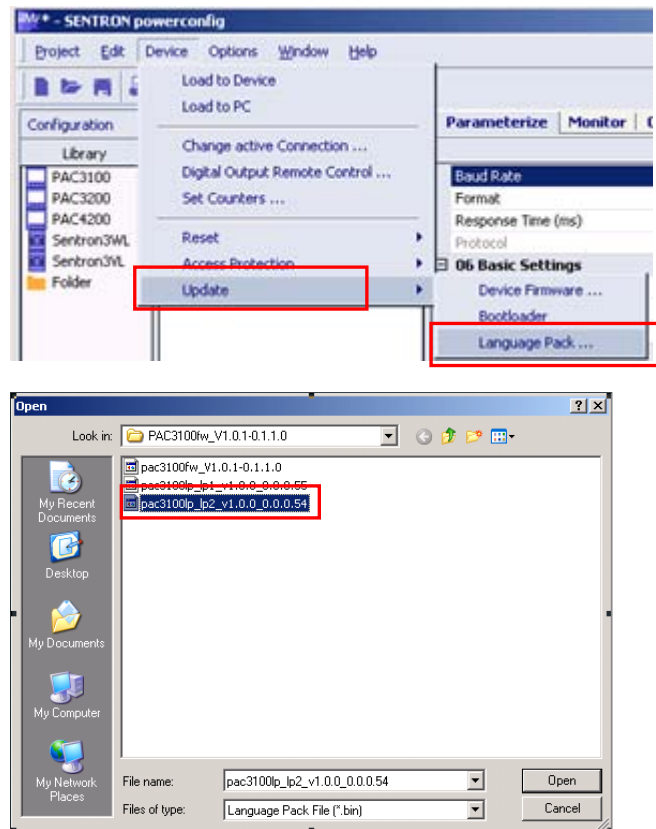
12. Confirm the message „update device firmware“ with “Yes”.



13. The device display gets dark and the progress bar shows the actual status of the firmware update between 0...100%.
Do not switch off the PAC3100 or disconnect the communication between the device and the PC during the update process!
The process may take up to 5 minutes. After a successful update the PAC3100 restarts and the progress bar disappears.

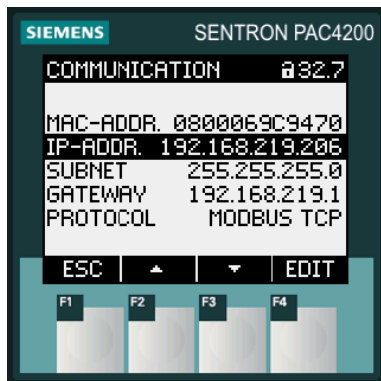
14. After a successful update the message “install texts” appears in the device display. It means that a language pack update is necessary too.

15. Select the new language pack file which you got from the Siemens Service & Support portal by opening the menu “device” -> “update” -> “language pack”.
Link Siemens Service & Support Portal:
<http://support.automation.siemens.com/WW/view/de/35378777/133100>

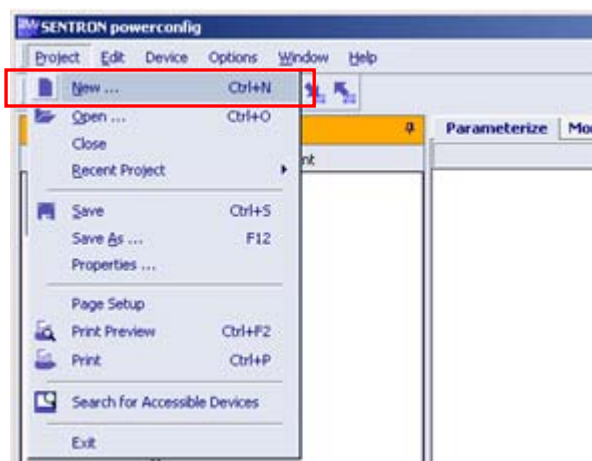


16. The command „open“ starts the update process automatically. The progress bar goes from 0...100%.
Do not switch off the PAC3100 or disconnect the communication between the device and the PC during the update process!
The process may take up to 5 minutes.
17. The update procedure is satisfactorily completed.

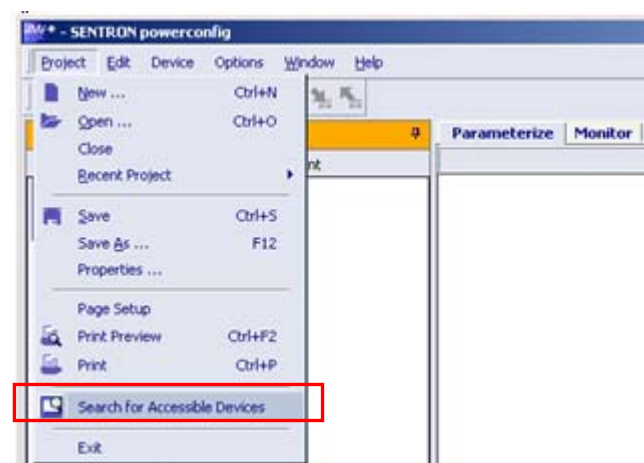
Initial operation of example 2

Nr.	Action									
	Parameterization PAC4200									
1.	Within an existing energy management system with SENTRON PAC4200 and PAC3100 the point 2-16 is invalid, because all communication parameters are already set. Search for accessible devices, take it into the device tree and continue with step 17.									
2.	Ensure that the Ethernet Modbus-TCP settings (menu 32.7 at the PAC4200) are correct. E.g. IP-ADR: 192.168.219.206, Subnet: 255.255.255.0, Gateway: 192.168.219.1, Protokoll: MODBUS TCP. <div></div>									
3.	Connect the Ethernet port of the SENTRON PAC4200 with the network.									
4.	Connect the PAC3100 with the PAC RS485 option module which is mounted on the back of the PAC4200. Make sure, that the connection A-, B+, Com. is correct. <table><tr><td>-/A</td><td><--></td><td>-/A</td></tr><tr><td>+/B</td><td><--></td><td>+/B</td></tr><tr><td>Com</td><td><--></td><td>Com</td></tr></table>	-/A	<-->	-/A	+/B	<-->	+/B	Com	<-->	Com
-/A	<-->	-/A								
+/B	<-->	+/B								
Com	<-->	Com								
5.	Start the SENTRON powerconfig V2.1 software									
6.	Create a new project in SENTRON powerconfig.									

7. Select menu and confirm „new > project“.

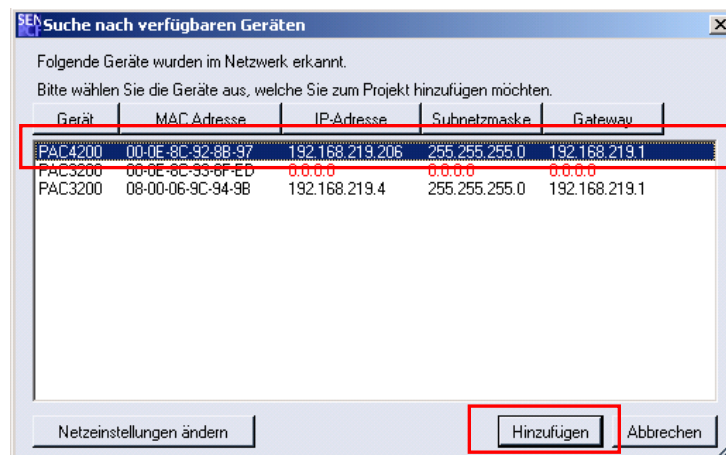


8. Choose “project > „Search for Accessible Devices“. The “Search for Accessible Devices” dialog appears.

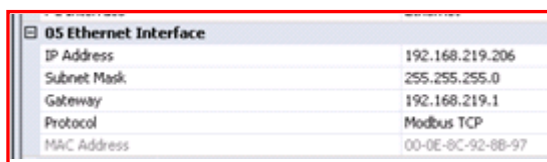


9. If the system does not detect a device, check the communication parameter of the PAC4200.

10. Select the device that is directly connected from the list. Click “OK”



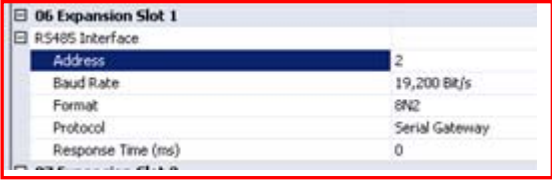
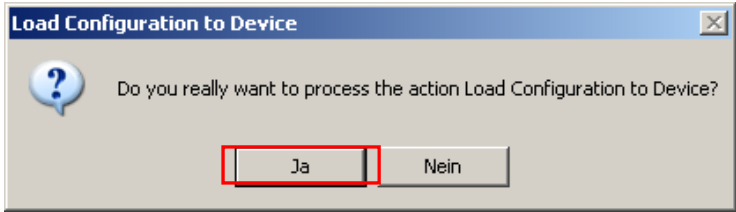
11. Ensure that the Ethernet settings (IP-Adr., Subnet, Gateway) matches with the device setting of the PAC4200.

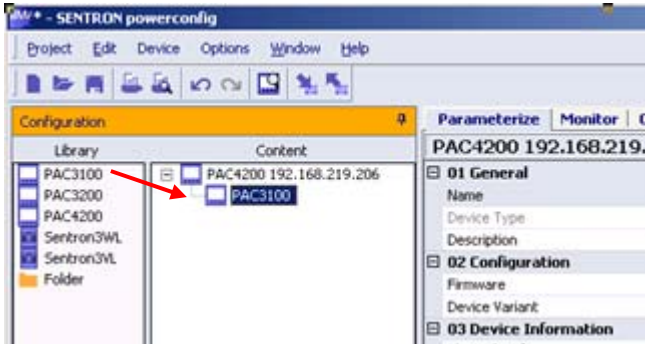
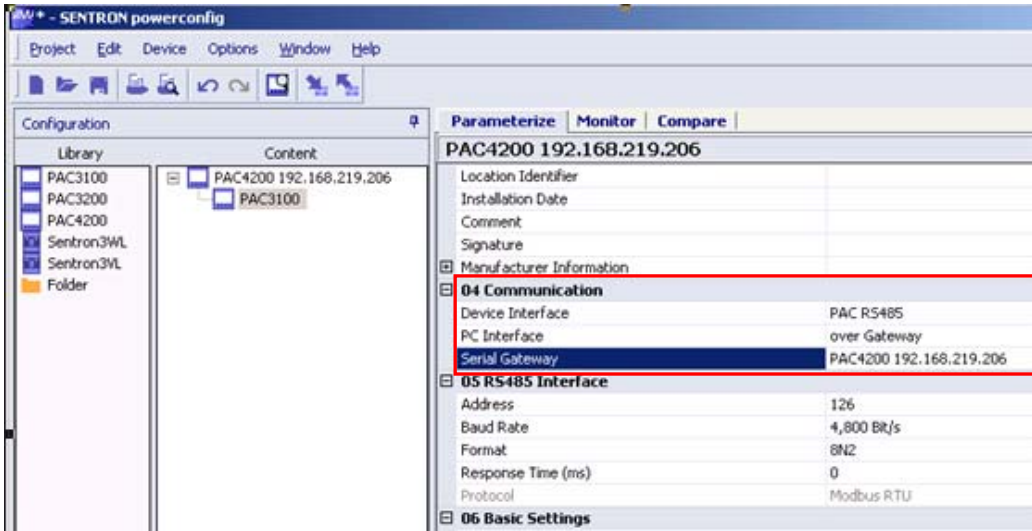


12. Check if the communication works properly by using the command „Device > Load to PC”

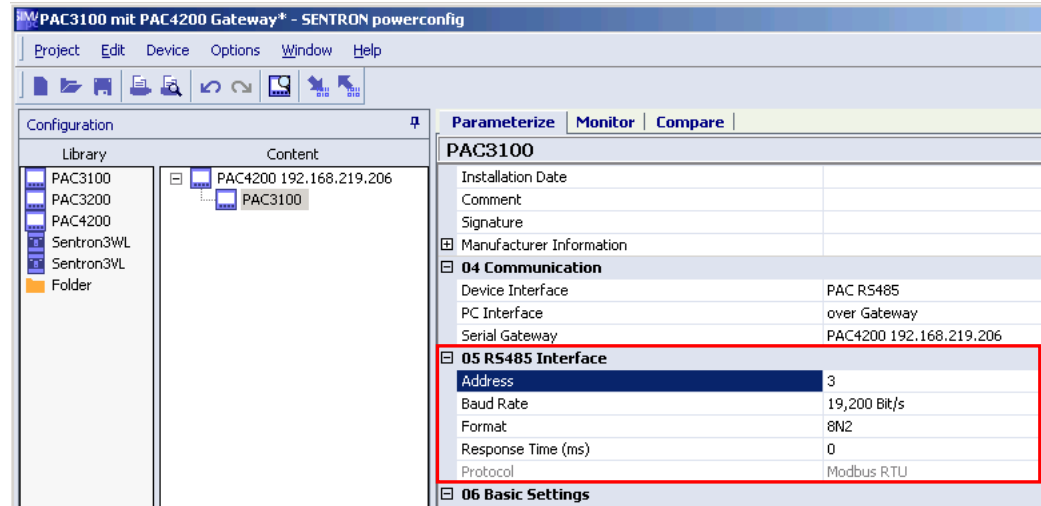


13. Mark the PAC4200 in the device tree.

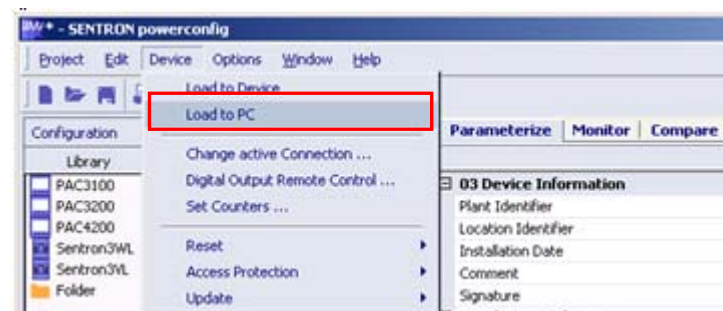
14.	<p>Fill in the Modbus RTU communication parameters of the device into the SENTRON powerconfig screen „parameterize“, 06 module interface 1. E.g. address „2“, Baud rate „19200“, format „8N2“. Change the protocol to “serial gateway”.</p> <p>The expansion slot (MOD1 or MOD2) must be configured depending on where the PAC RS485 module is mounted.</p> <p>MOD1 = 06 module slot 1 MOD2 = 07 module slot 2</p> 
15.	<p>Transfer the communication parameter into the PAC4200. Select „menu -> device“ -> „Load to Device“.</p> 
16.	<p>Confirm the message „Load Configuration to Device“ with “Ja”</p> 

	Parameterization PAC3100
17.	Ensure that Modbus RTU communication parameters from the menu 21.7 of the PAC3100 are completely configured. E.g. address „3“, Baudrate „19200“, format „8N2“, response time „0“.
18.	<p>Drag the PAC3100 from the “Library” and drop it under the “Devices” tree below SENTRON PAC4200 .</p> 
19.	In the “Devices” tree, select the SENTRON PAC3100.
20.	<p>Choose „parameterize”, field “04 communication” PC interface “via Gateway”. Select as „serial gateway” the SENTRON PAC4200 which is connected to the SENTRON PAC3100. E.g., PAC4200 192.168.219.206.</p> 

21. Fill in the communication parameters of the PAC3100 from the menu 21.7 into the SENTRON powerconfig screen „parameterize“, 05 RS485 interface. E.g. address „3“, Baud rate „19200“, format „8N2“, response time „0“. **Ensure that the SENTRON powerconfig setting matches with the device settings.**

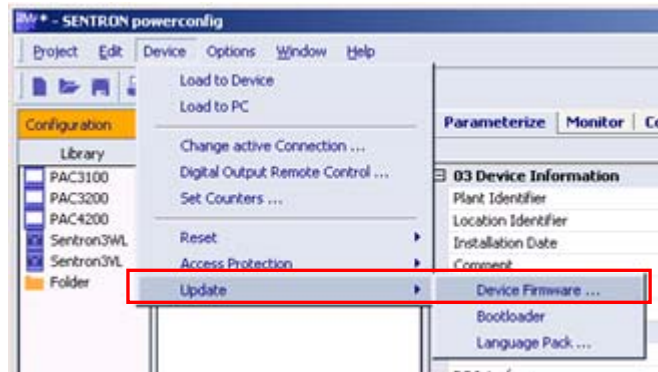
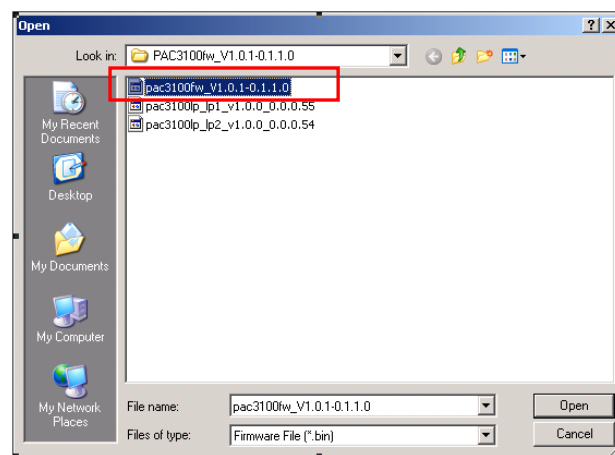


22. Check if the communication works properly by using the command „Device > Load to PC“

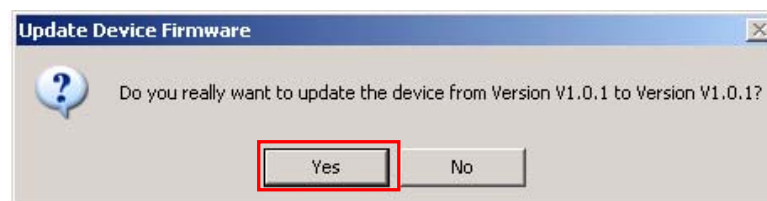


23. Mark the PAC3100 in the device tree.

24. Select the new firmware file which you got from the Siemens Service & Support portal by opening the menu “device” -> “update” -> “device firmware”.
Link Siemens Service & Support Portal:
<http://support.automation.siemens.com/WW/view/de/35378777/133100>



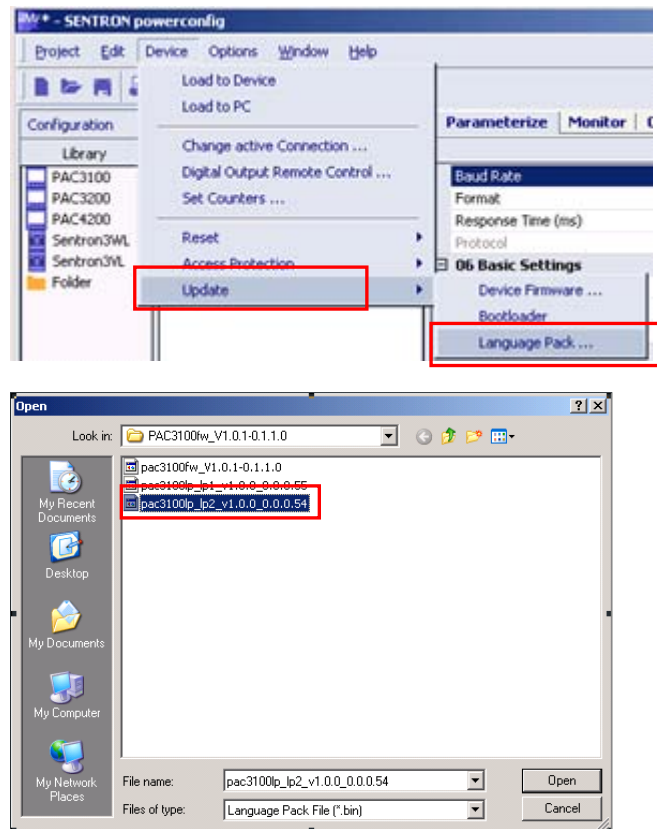
25. Confirm the message „update device firmware“ with “Yes”.



26. The device display gets dark and the progress bar shows the actual status of the firmware update between 0...100%.
Do not switch off the PAC3100 or disconnect the communication between the device and the PC during the update process!
The process may take up to 5 minutes. After a successful update the PAC3100 restarts and the progress bar disappears.

27. After a successful update the message “install texts” appears in the device display. It means that a language pack update is necessary too.

28. Select the new language pack file which you got from the Siemens Service & Support portal by opening the menu “device” -> “update” -> “language pack”.
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<http://support.automation.siemens.com/WW/view/de/35378777/133100>



29. The command „open“ starts the update process automatically. The progress bar goes from 0...100%.
Do not switch off the PAC3100 or disconnect the communication between the device and the PC during the update process!
The process may take up to 5 minutes.

30. The update procedure is satisfactorily completed.

Note:



"Search for accessible devices"

This function lists all PAC devices which are part of a broadcast domain (layer 2). It differs from other IP based services like "ping". For a successful communication between the SENTRON powerconfig software and the PAC device you have to set at least

- the IP address
- the protocol which is set on the device



The "Search for accessible devices" function is not able to detect PAC devices which are outside of this broadcast domain.

In this case, please set the communication parameter of the PAC device manually.

**For further assistance please contact our technical support via Internet
Internet address of the technical support:**

(<http://www.siemens.com/lowvoltage/technical-support>)

***No responsibility is taken for the correctness of this information.
Subject to change.***