WEINMANNadjust
Manual
WM 96721i
01/2019

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1   WEINMANNadjust

WEINMANNadjust...

- displays therapy parameters.

- allows parameters relevant to therapy to be adjusted.

WEINMANNadjust supports the following devices:

BiLevel ST 22
CPAP 20 (e)
SOMNObalance (e)
SOMNOcomfort 2 (e)
SOMNOcomfort
SOMNOset
SOMNOsmart
SOMNOsmart 2
SOMNOsoft +
SOMNOsoft 2
SOMNOsoft 2 e
SOMNOvent auto-S
SOMNOvent auto-ST
SOMNOvent CR
SOMNOvent S
SOMNOvent ST
VENTIlogic
VENTImotion
VENTImotion 2
WEINMANNbalance JP
WEINMANNsoft 2 JP

1.1   Intended use

WEINMANNadjust is a component of both the SOMNOlab and WEINMANNsupport products.
WEINMANNadjust provides the option of displaying and adjusting therapy parameters.

WEINMANNservice is a component of both the SOMNOlab and WEINMANNsupport products.
WEINMANNservice provides the facility for displaying and resetting service data and usage times from
the device. WEINMANNservice furthermore supports configuration of the analog output signals of the
therapy devices for connection to a polysomnography system.

1.2 Safety instructions

Read this online help/this user manual carefully. They are a component of the devices described and must be available at all times. Use WEINMANNadjust solely for the intended purpose described. For your own safety and for the safety of your patients and to comply with the requirements of Directive 93/42/EEC, observe the following safety instructions:

· The system may only be used by trained persons with adequate specialist knowledge.

· **Caution:**
The PC and the patient may not be connected simultaneously to the therapy device unless there is a sufficient galvanic separation. This is only ensured by using the USB-RS485 converter cable (WM 93318).

· **Caution:**
The WEINMANNadjust software/remote setting module is not an online monitoring system. Do not use the software/remote setting module for monitoring the patient or the device function.

· Please observe the System requirements. Install the software only on a computer which meets the system requirements.

· Protect the CD-ROM from strong sunlight or mechanical effects such as bending or scratching.

· Ensure that when setting or adjusting therapy parameters using WEINMANNsupport (WEINMANNadjust functionality) or WEINMANNadjust that you do not simultaneously make changes to the therapy device. Under certain circumstances, there may be a reciprocal effect.

· Ensure during data import or use of the WEINMANNadjust functionality that the therapy device is not changed on the PC. Under certain circumstances, this might result in confusion of data or faulty settings in the therapy device.

· Do not terminate the data transfer prematurely by removing the power plug on the therapy device or by interrupting the connection between the therapy device and the PC. If the data transfer was not completed properly, you may want to check what the set therapy parameters are.

· To avoid mix-ups when importing using the memory card,
  - Save patient data on the memory card (only if sleep therapy data with
  memory card, see user manual or Online Help);
  - Use the memory cards of the therapy devices only for therapy device data;
  - Use only memory cards formatted with FAT file system, as otherwise the therapy
  devices cannot read the data.

- If third-party items are used, functional failures and restricted fitness for use may result. Biocompatibility requirements may also not be met. In such cases, be aware that any claim under warranty and liability will be voided if neither the accessories nor the genuine replacement parts recommended in the instructions for use are used.

- Connect only one therapy device to a PC and to a converter box. If you want to operate several therapy devices from one PC, contact your local specialist dealer or Löwenstein Medical Technical Service (e-mail: Medelo-service@hul.de).

- Please note that this software is a medical device. Anyone who installs medical devices on a PC, connects them to a PC or incorporates them in a network, is responsible for complying with EN 80001-1.

- Do not delete the files manually via a file explorer program. The deleted records may be permanently lost.

- Do not falsify or switch recording data and do not intervene manually in program files.

- You should be aware that the evaluations and displays relate to the periods selected by the user. The evaluations and displays depend on the therapy device used. The therapy control data may only be assessed and interpreted by the doctor supervising treatment.

- Back up the data on your system regularly to protect it.

- Protect your PC from viruses and malicious software. If you load data from an external storage medium, ensure beforehand that this medium is not infected with viruses. Perform virus scans on your system at regular intervals.

1.3   System requirements

Ensure that the PC and its components are securely installed on a firm surface and cannot tilt or fall off. In order to be able to install the WEINMANNadjust PC software with no problems, you need administrator rights and an IBM-compatible computer with the specification below.

Processor:	Pentium® IV from 1.8 GHz
Free memory:	hard drive with at least 1 GB free memory and 1 GB free memory on the system partition
RAM:	Min. 512 MB RAM (depending on operating system, see operating system)
Connection:	a free USB port
Disk drive:	CD-ROM drive
Graphics card:	supported by Microsoft® Windows®, resolution min. 1024 x 768 (recommended 1280 x 1024) colour quality min. 16 bit (recommended 32 bit)
Printer:	supported by Microsoft® Windows®
Input:	keyboard and mouse or another suitable pointing device supported by Microsoft® Windows®.
Operating system:	"The operating systems listed are supported in the following languages: German, English, French, Italian, Dutch, Russian, Japanese, Chinese. Windows® XP 32 bit SP2 or higher (if compatible) with min. 512 MB RAM, recommended 1 GB RAM Windows 7® with min. 1 GB RAM, recommended 2 GB RAM Windows 8.1® with min. 1 GB RAM, recommended 2 GB RAM For further information about compatibility with more recent operating systems, contact your local specialist dealer or Löwenstein Medical Customer Service (e-mail: Medelo-service@hul.de).
With the following software:	Internet Explorer® 6.0 SP1 or higher (if compatible) Adobe® Acrobat® Reader® 6.0 or higher (if compatible)

Note:
You need power user rights to operate the WEINMANNadjust software.

Microsoft, Microsoft Windows, Windows, Windows Vista, Windows 7 and Internet Explorer are registered trademarks of the Microsoft Corporation in the USA and/or other countries.

Adobe Acrobat Reader is a registered trademark of Adobe Systems Incorporated in the USA and/or other countries.

Pentium is a trade mark of the Intel Corporation in the USA and other countries.

1.4   Markings and symbols

Marking	Description
	Follow the user manual

1.5   Starting WEINMANNadjust

You start WEINMANNadjust by **double-clicking on the Desktop icon "WEINMANNadjust"**.

or

Open the menu items: **Start --> Programs --> Weinmann** in the given order and click **WEINMANNadjust**.

WEINMANNadjust then opens and you see the following window:

Alternatively, you can also start WEINMANNadjust by double-clicking on a *.tps file/*.tpg file in Windows® Explorer.

1.6   Open the User Manual

You cannot open the user manual of WEINMANNadjust directly in WEINMANNadjust, only using the Windows® Start menu or using WEINMANNsupport. Proceed as follows:

Using the Windows® Start menu:

1. Open the following path: **Start --> Programs --> Weinmann**
2. Click the respective user manual instructions.

Using WEINMANNsupport

1. In the **?** menu, select the menu item: **WEINMANNadjust User Manual**.

The content of the user manual is identical to that of the Online Help.

1.7   Use Online Help

The content of the Online Help is identical to that of the user manual.

Open Online Help

1. Using the button

2. Using the function key F1

Print Help topic

1. Open the relevant Help text.
2. Click the **Print** icon.
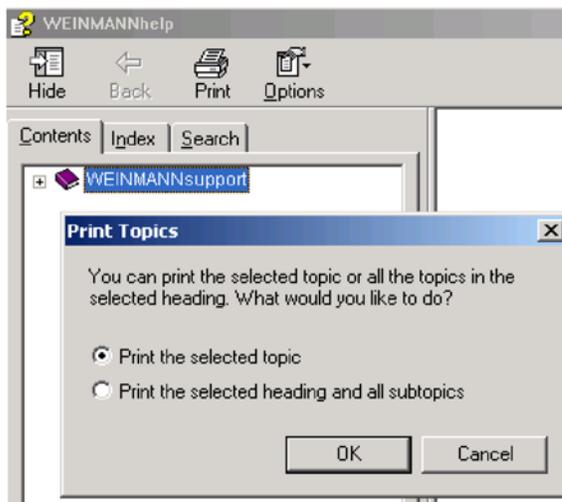
3. Select **Print Selected Topic** in the **Print Topics** dialog and confirm with **OK**.
4. Click **OK** in the printer's dialog field, to start the print job.

2 Screen
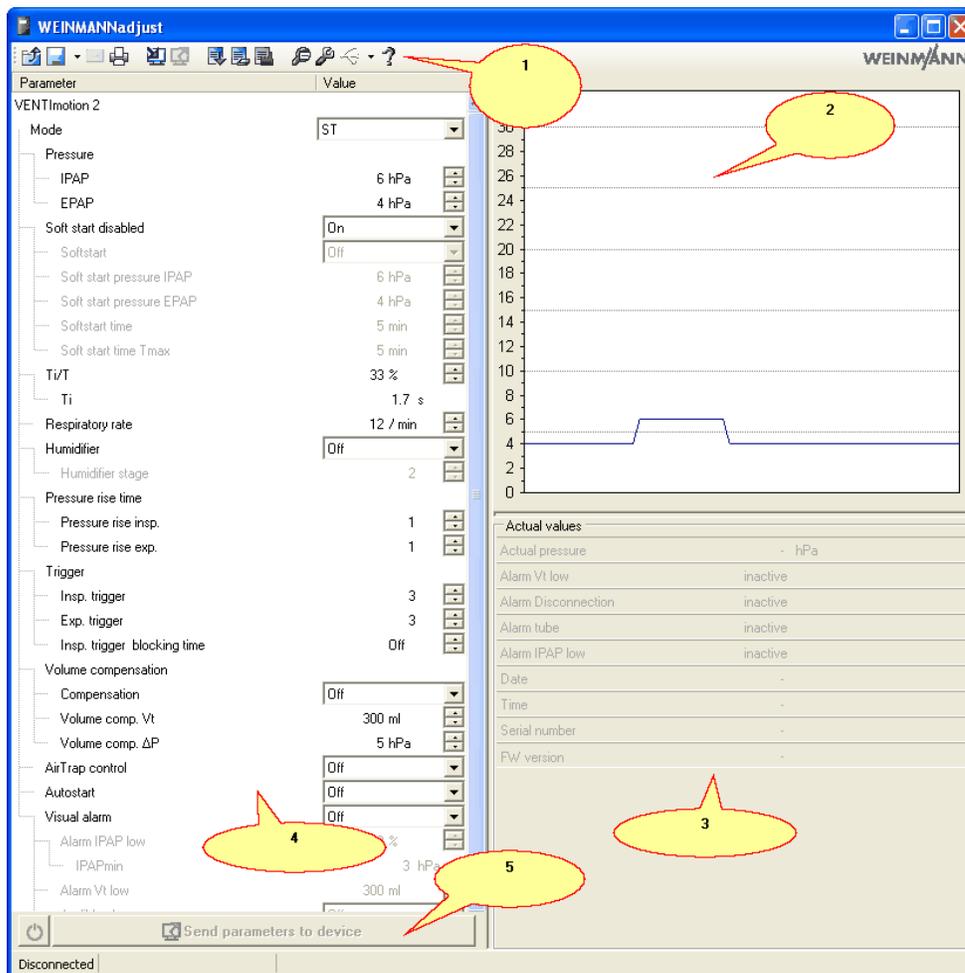
The WEINMANNadjust screen is arranged as follows.

- You can call up records and therapy data via the Button bar (**1**).
- The Diagram (**2**) gives you an idealized graphical overview of a breath.
- Actual values (**3**) displays therapy parameters currently being read out from the connected therapy device (updated every second). You can find out which values are displayed on which individual devices in the section entitled Supported devices.
- Parameter (**4**) displays all the therapy parameters which can be set for the connected therapy device together with their current values in the connected therapy device.
- Underneath the parameters you will find buttons (**5**) to switch the therapy device on and off and to send parameters to the therapy device.

Click on the areas or the hyperlinks for information about the topics you require.

If the WEINMANNadjust window is reduced in size, Diagram and **Actual values** are faded out.

2.1   Button bar

The button bar is at the top:

You can use it to perform the following actions:

[Load parameter set](#)
[Save parameter set](#)
[Send parameters as SD card configuration by e-mail](#)
[Print parameter set](#)
[Import parameters from device](#)
[Send parameters to device](#)
[Set current parameters as defaults](#)
[Load defaults](#)
[Load factory defaults](#)
[Switch display mode](#)
[Start WEINMANNservice](#)
[Make and disconnect a connection](#)
[Help](#)

Click on the buttons or the hyperlinks for information about the topics you require.

2.2   Parameter

Parameter displays the adjustable therapy parameters for the connected therapy device:

You can find the values which can be adjusted on the individual therapy devices in the section entitled [Supported devices](#).

Changed parameters are highlighted in red until they have been sent to the therapy device.

2.3   Diagram

The diagram gives you a graphical overview of the pressure settings for a breath:
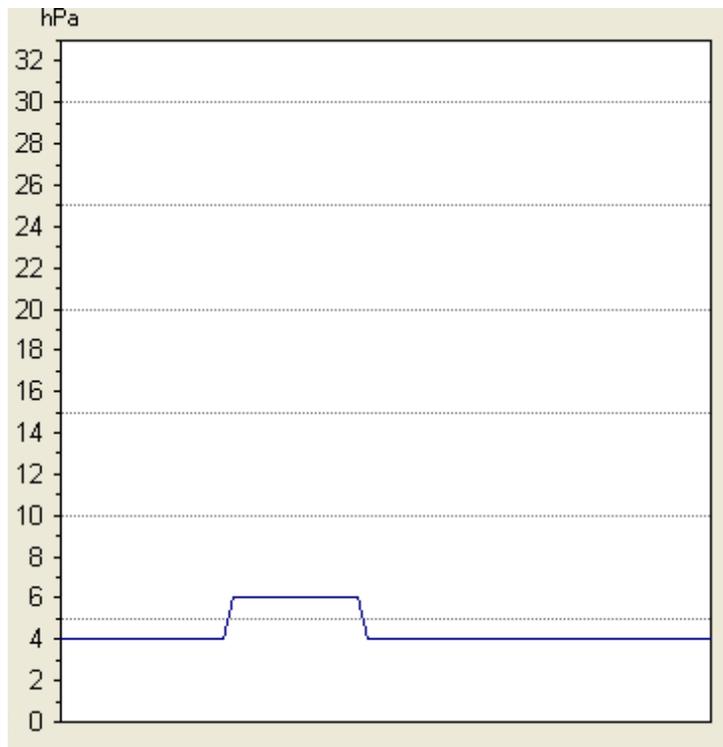
The diagram changes in the event of:

· pressure values being changed
· rate of pressure rise (ramp) being changed

2.4 Actual values

Actual values displays the values currently being read out of the connected therapy device:

Actual values		
Actual pressure		7,975 hPa
Alarm Vt low	⚠	active
Alarm Disconnection		inactive
Alarm tube		inactive
Alarm IPAP low		inactive
Date		11.03.2010
Time		08:32:11
Serial number		001424
FW version		V 6.00

Actual values are updated every second. Alarms occurring on the therapy device are shown in red and given a symbol corresponding to their priority.

The values displayed on the individual therapy devices can be found in the section entitled Supported devices.

If the device is connected to an SD card, the patient data on the SD card or imported from WEINMANNsupport is displayed in the **Actual Values** area:

Actual values	
🔁 Change Patient information	
First name	-
Last name	-
Date of birth	-
ID number	-
Actual pressure	- hPa
Mask test	inactive
Date	-
Time	-
Serial number	-
FW version	-

With the

Change Patient information

button, you can change patients in the following patient selection dialog, without having to switch to WEINMANNsupport.

The patient data is displayed in red, if it has not yet been written to the SD card.

2.5   Connection to the therapy device/Connection to SD card

Below the parameters you will find two buttons you can use to switch the therapy device on and off and to send parameters to the therapy device:

⏻	Send parameters to device

If the therapy device is connected to an SD card, the lettering of the right-hand button changes. You can use the button to write parameters to the SD card:

⏻	Write parameters to SD card

Switch therapy device on/off

The therapy device can be switched on and off using the ⏻ button.

The button is deactivated if

- there is no connection to the therapy device
- the device cannot be switched on and off via WEINMANNadjust
- the user interface is locked
- therapy device is connected to an SD card

⏻ : The therapy device is working. Click the button to switch off the therapy device.

⏻ : The therapy device is off. Click the button to switch on the therapy device.

Send parameters to the therapy device

Using the

Send parameters to device

button, you can send the set therapy parameters to the therapy device. The button is greyed out if there is no connection to the therapy device.

Write parameters to an SD card

With the

button you can write the set therapy parameters to an SD card.

3 General user information

This section uses the buttons in the button bar to explain the basic functions of WEINMANNadjust. Click on the hyperlinks for information about the topics you require.

Load parameter set
Save parameter set
Send parameters as SD card configuration by e-mail
Print parameter set
Import parameters from device / Read parameters from SD card
Send parameters to device / Write parameters to an SD card
Set current parameters as defaults
Load defaults
Load factory defaults
Switch display mode
Start WEINMANNservice
Make and disconnect a connection

3.1 Load parameter set

To load a parameter set already adjusted for a therapy device, press the button:

The WEINMANNadjust File Manager dialog then appears:
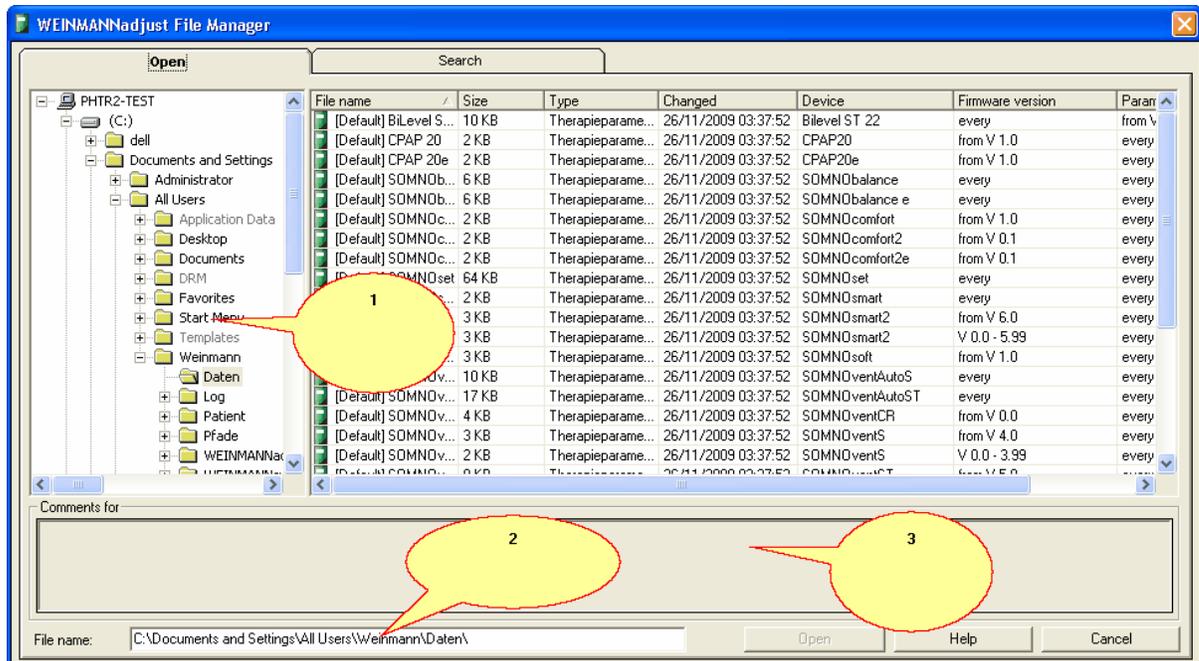
1 = Select the file to be loaded
2 = Enter the filename
3 = In the comments field, the text describing the selected file of parameters is displayed if such a description is available.

Click on the **Open** button to load the corresponding parameter set.

If you have loaded a configuration for a therapy device with SD card patient data in WEINMANNadjust and then load a parameter set, whose patient data does not match the data in WEINMANNadjust, the following dialog appears:
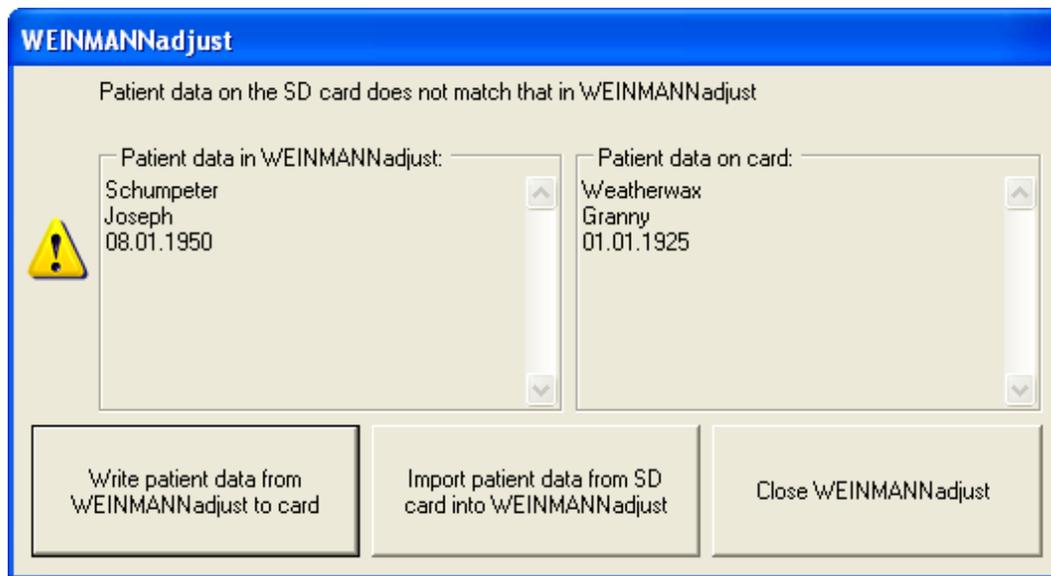
1. Select the patient data you require, or exit WEINMANNadjust.

3.2 Save parameter set

To save the parameters set in WEINMANNadjust, proceed as follows:

Note:
You can only select the type of save if WEINMANNadjust displays the parameter setting of a therapy device with SD card.

1. In the toolbar, click the arrow next to the Save symbol .
2. Select how you want to save your file:
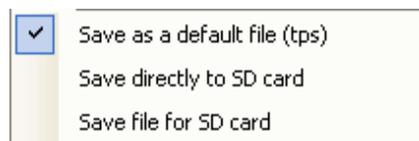
- **Save as a default file (tps):** The data is saved on the hard drive as a parameter set (*.tps).
- **Save directly to SD card:** The data is saved directly to the SD card as a *.tpd file. You can only select this Save option if the device is connected to an SD card.
- **Save file for SD card:** The data is saved as an SD card file (*.tpg) on the hard drive. The name of the file cannot be changed.

3. Click ⊡ . The **WEINMANNadjust File Manager** appears (only if you do not save the data directly on the SD card):
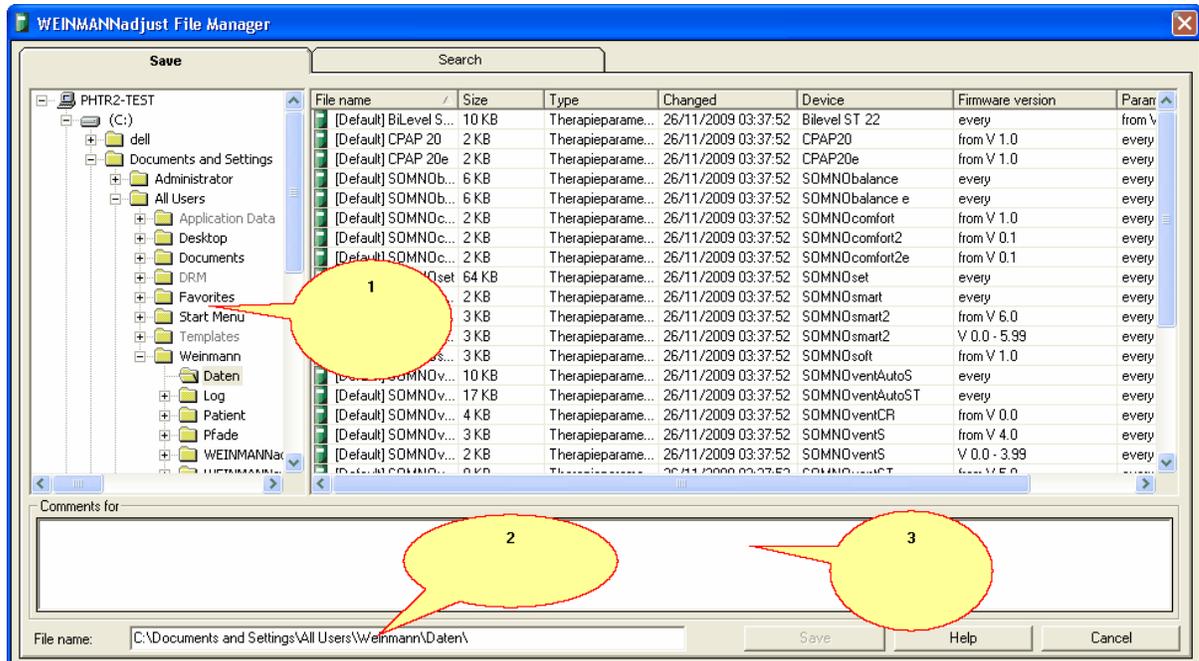
1 = Select folder. Here you select the location for the file to be saved
2 = Enter the filename
3 = You can enter a descriptive text for the parameter settings to be saved in the comments field. You can use a context menu for simple text markings for the comments such as bold and italic.

Note:
If you want to save *.tpg files, the comments field is disabled. If available, patient data is displayed here.

4. Select where you want to save your data:
5. Click **Save**.

3.3   Send parameters as SD card configuration by e-mail

To send a *.tpg file by e-mail, e.g. to a patient, proceed as follows:

1. Click the [icon] symbol in the Toolbar.
   The default window of your e-mail client opens with the attached *.tpg file of the therapy device, which is currently displayed in WEINMANNadjust. The text in the default window is preconfigured:
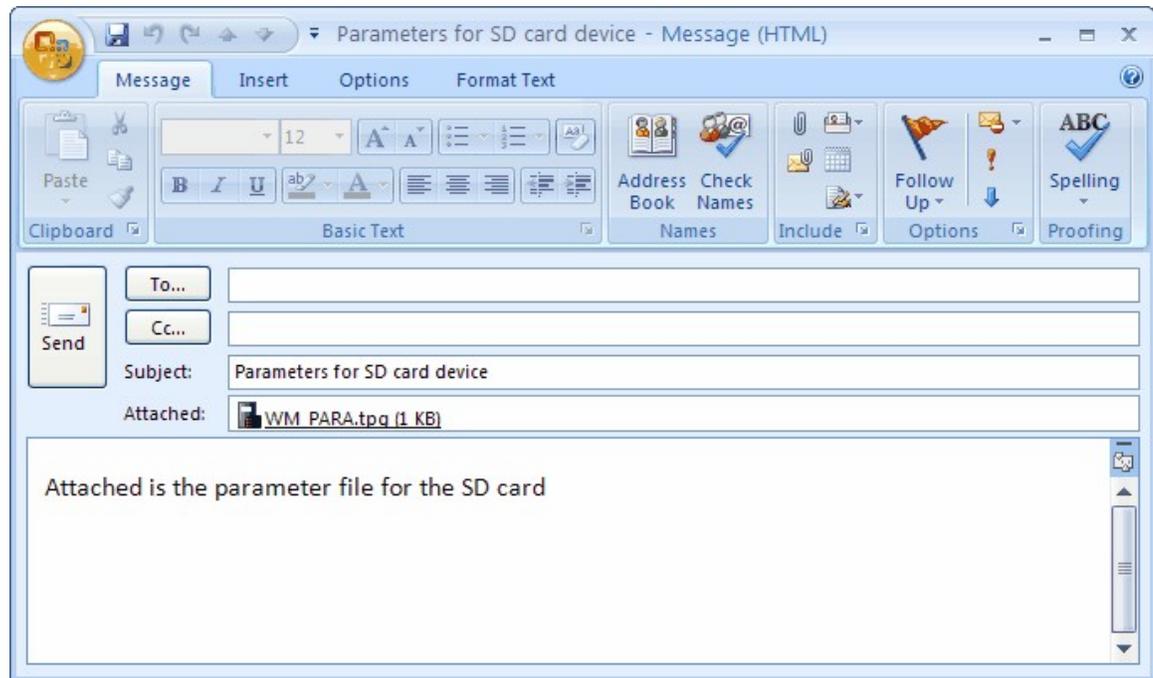
2. Enter the recipient.
3. If necessary: Change the subject and text of the e-mail.
4. Send the e-mail.

Note:
If you double-click the *.tpg file in the e-mail, WEINMANNadjust opens.

You can use the following programs to send the *.tpg files by e-mail:

· Microsoft® Outlook® Express
· Microsoft® Outlook® 2003/2005/2007
· Mozilla® Thunderbird® 2/3
· IBM® Lotus Notes® 6
· Any e-mail client that supports Simple MAPI

3.4 Print parameter set

To **print the current parameter set**, press this button:

The WEINMANNadjust print preview then appears:
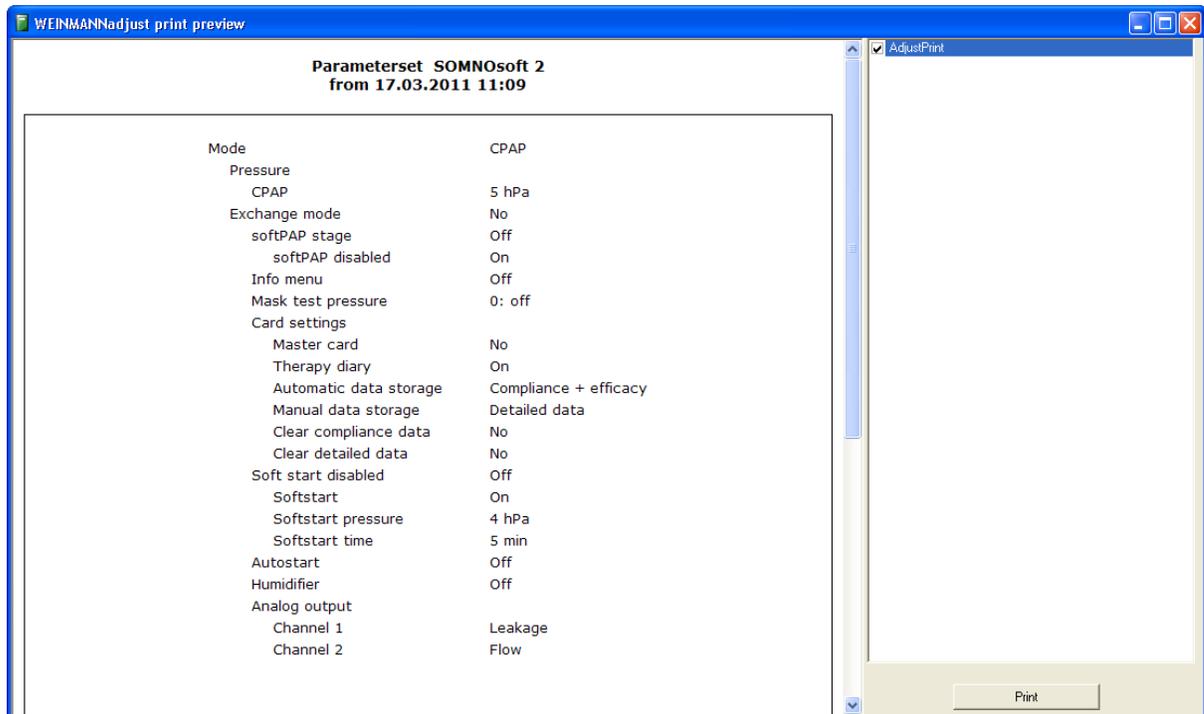
Click on the **Print** button to start the printing process.

3.5 Import parameters from device/Read parameters from SD card

By pressing the

button you can:

· Import therapy parameter settings located on the connected device.
· Import patient data and therapy parameter settings from an SD card

This updates the display in Parameters.

3.6   Send parameters to device/Write parameters to SD card

Requirement: The therapy device is connected to the mains supply.

The therapy settings only take effect in the therapy device if you send them to the therapy device.

To do so, click on the button.

The set therapy parameters are sent to the connected therapy device. If there is no connection to the therapy device, this is created.

Alternatively, you can also transfer the set therapy parameters to the connected therapy device via the
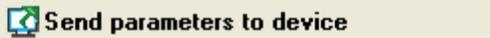
Send parameters to device

button at the bottom left in **Parameters**.

It is not possible to set parameters using WEINMANNadjust if you are setting the parameters for the device yourself (Physician menu open).

Write parameters to SD card

To write therapy parameters to an underline SD card, you must prepare it for the patient or device:

1. Load the default parameter settings or one of your default parameter settings for the required therapy device.

2. Adjust the therapy parameters to the needs of the patient.
3. Select the patient using the
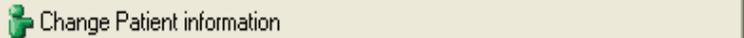
Change Patient information

   button in Actual Values.
4. Click on the button.
5. Answer the question "Initialize card?" with **Yes**.

When you have prepared the empty SD card or if therapy parameters already existed on the SD card:

1. Click the button to write the set therapy parameters to the SD card.

Alternatively, you can also write the set therapy parameters to the SD card using the
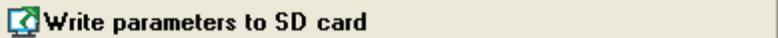
Write parameters to SD card

button in the bottom left-hand **Parameters** area.

WEINMANNadjust issues messages if it detects conflicts on writing to the SD card.

Insufficient memory on the SD card:

If, on writing to the SD card, WEINMANNadjust detects that there is less than 10 MB unused memory available or more than 400 MB is stored on the SD card, the following error message appears:
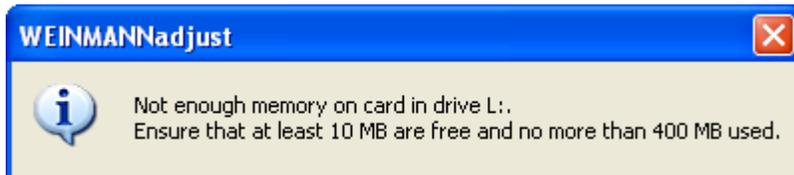
1. Check whether sufficient memory is available on the SD card.
2. If necessary: Delete the files from the SD card (using Windows® Explorer®).
3. Click **Repeat**.
4. If necessary: Click **Cancel**, to cancel the write function.

SD card is write-protected:

If, on writing to the SD card, WEINMANNadjust detects that the SD card is write-protected, the following error message appears:
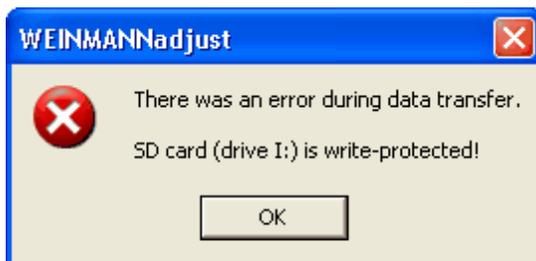
1. Remove the write protection by pushing up the lock switch on the SD card.
2. Click **OK**.

3.7   Set current parameters as defaults

You can save the set therapy parameter set as a default for the type of therapy device connected.

To do this, press this button .

3.8   Load defaults

If there is a <u>user-defined standard</u> for the type of therapy device currently displayed, you can load this

using the [icon] button.

Caution:
This does **not** yet transfer the parameters to the device! For transfer, you must first send the parameters to the therapy device. For more details on exporting parameters, see the section entitled <u>Send parameters to the device</u>.

3.9   Load factory defaults

The term "factory defaults" is understood to mean a parameter set predefined by the manufacturer. The therapy parameter set can be reset to factory defaults for the connected type of therapy device.

This is effected by this button [icon] .

Caution:
This does **not** yet transfer the parameters to the device! For transfer, you must first send the parameters to the therapy device. For more details on exporting parameters, see the section entitled <u>Send parameters to the device</u>.

3.10   Switch display mode

You can switch between two display modes in WEINMANNadjust:

- normal display
- compact display

Compact display

Press the ![button] button in the button bar of the normal display to switch to the compact display:
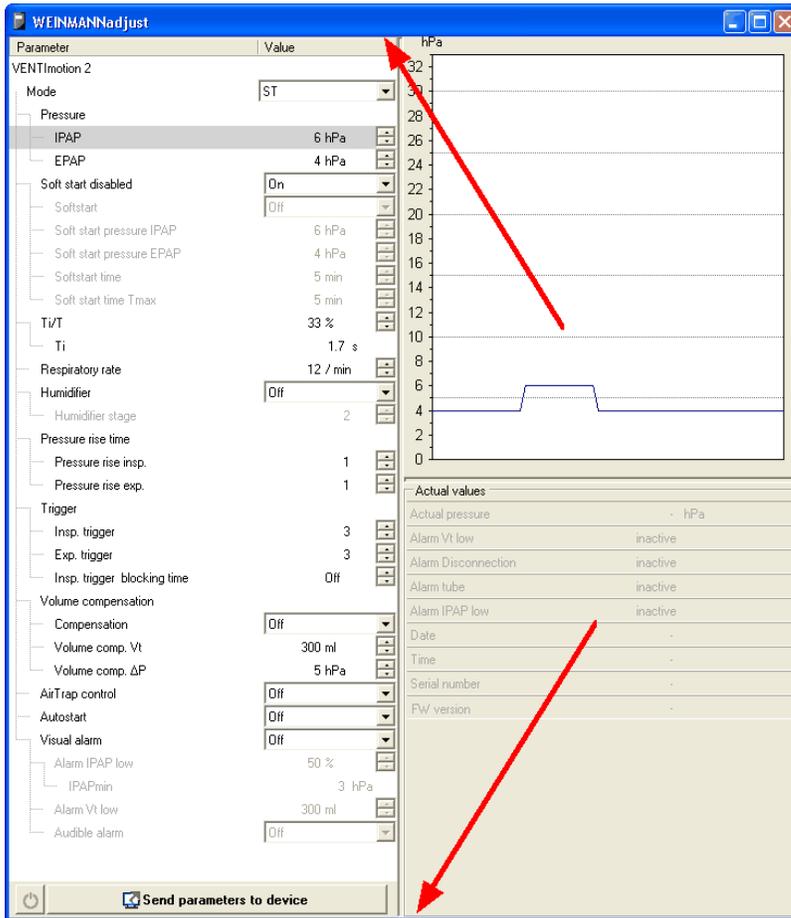
In the compact display, the button bar and the status bar are faded out, appearing only if you move the mouse over the top or bottom edges of the window. The compact display makes it easier to use WEINMANNadjust and SOMNOlab simultaneously during a measuring night.

Normal display

Press the [icon] button in the button bar of the compact display to switch to the normal display:
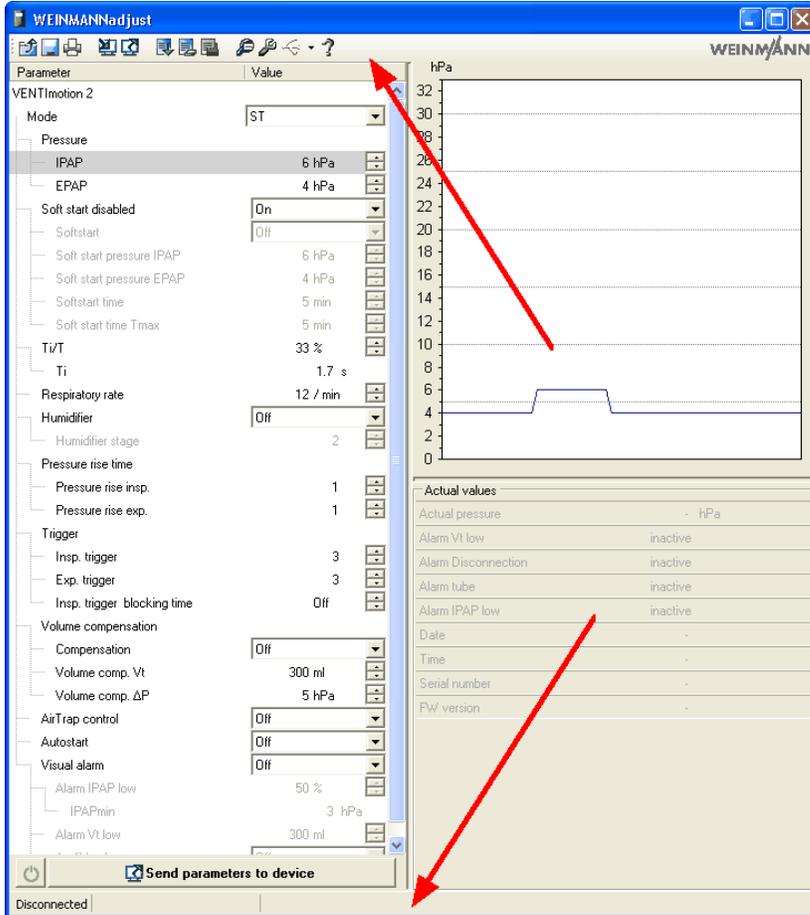
In the normal display, the button bar and the status bar are faded in. The normal display appears automatically when you start WEINMANNadjust.

3.11 Start WEINMANNservice

Start WEINMANNservice by pressing this button ![icon]. The button is greyed out if the device is connected to an SD card (WEINMANNservice is disabled).

For more information about WEINMANNservice, see the section entitled **WEINMANNservice**.

3.12 Make and disconnect a connection

The connection to the therapy device or to an SD card can be made using the ![icon] button or disconnected using the ![icon] button. If the card is connected to the therapy device, **Connected** is displayed in the Status bar. The Status bar also displays the COM port and the name of the connected therapy device (Connection to an SD card: Name of the therapy device whose parameter settings are on the SD card).
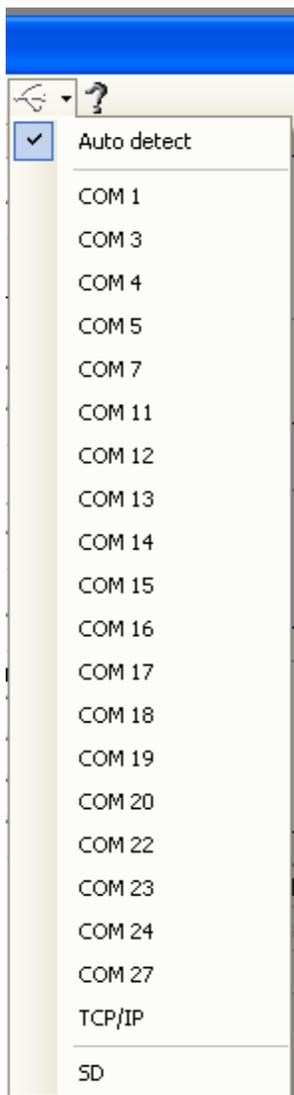
You can use the arrow on the right next to the button to determine how to make the connection to the therapy device:

- by means of **Auto detect** (WEINMANNadjust detects the port automatically)
- via COM port (**COM x**, depending on the number of COM ports available)
- via Transferbox 2 (**TCP/IP** selected in WEINMANNsupport) (this type of connection is only available if you have permanently set a Transferbox 2 in WEINMANNsupport)
- via SD card (**SD**)

During automatic interface search, WEINMANNadjust searches first for a valid SD card and only then for a cable connection. Both the connection and the automatic interface search can be cancelled by simply closing WEINMANNadjust.

Connect therapy device to an SD card

WEINMANNadjust issues messages if it detects conflicts on making the connection.

SD card empty:

If, while making the connection, WEINMANNadjust detects an empty SD card (no device connected), the following dialog appears:
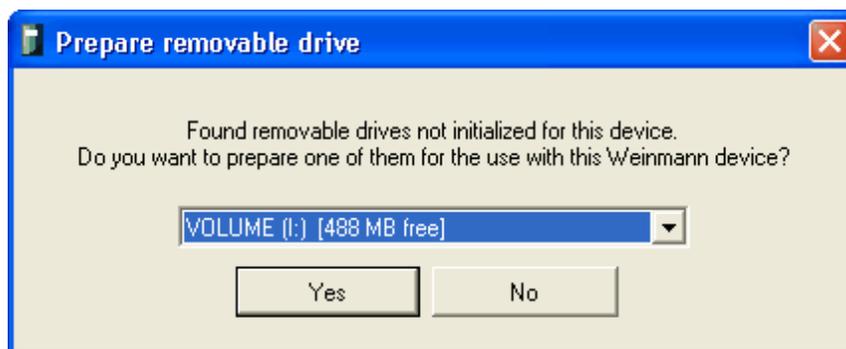
All available SD cards are displayed with their available unused memory. You have the following options:

- **Yes**: The configuration currently loaded and displayed in WEINMANNadjust, including the patient data, is saved on the SD card. WEINMANNadjust is then connected to this SD card.
- **No**: Nothing is saved on the SD card and WEINMANNadjust remains unconnected.

SD card is write-protected:

If, while making the connection to the SD card, WEINMANNadjust detects that the SD card is write-protected, the following error message appears:

1. Remove the write protection by pushing up the lock switch on the SD card.
2. Click **OK**.
   The connection is made.

SD card already contains a configuration:

If the patient/therapy device type you selected in WEINMANNadjust is different to that saved on the SD card, the following dialog appears:
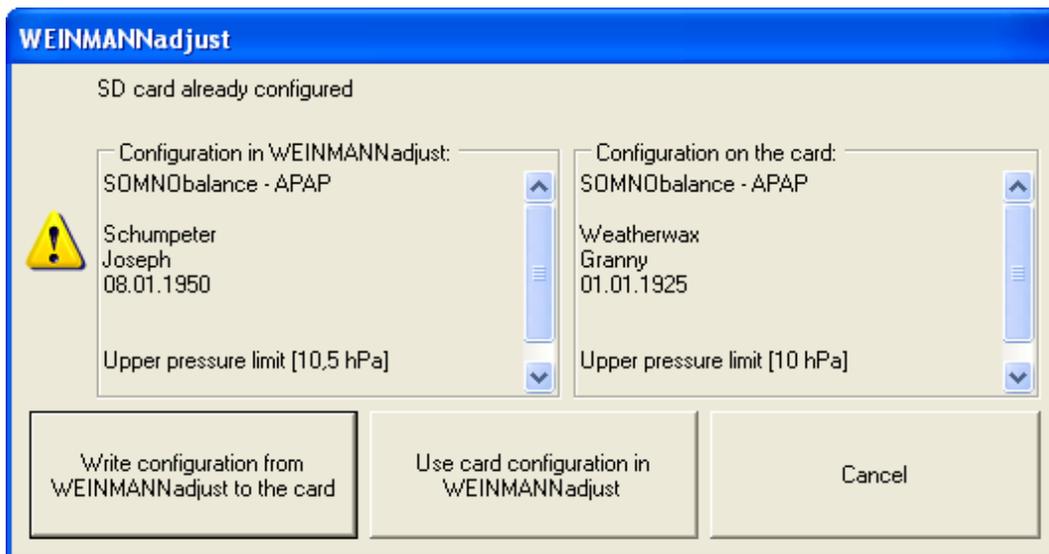
4   Supported devices

BiLevel ST 22
CPAP20
CPAP20e
SOMNObalance
SOMNObalance e
SOMNOcomfort
SOMNOcomfort 2
SOMNOcomfort 2e
SOMNOset
SOMNOsmart
SOMNOsmart 2 up to and incl. FW 5.0
SOMNOsmart 2 from FW 6.0
SOMNOsoft +
SOMNOsoft 2
SOMNOsoft 2e
SOMNOvent auto-S
SOMNOvent auto-ST
SOMNOvent CR
SOMNOvent S up to and incl. FW 3.0
SOMNOvent S from FW 4.0
SOMNOvent ST up to and incl. FW 4.0
SOMNOvent ST from FW 5.0
VENTImotion up to and incl. FW 5.0
VENTImotion from FW 6.0
VENTImotion 2
VENTIlogic
WEINMANNbalance JP
WEINMANNsoft 2 JP

For more detailed information about the therapy parameters which can be set, limit values, therapy modes and increments, see the instructions for use for the therapy device. You can find these on the manufacturer's home page or they were supplied to you with the therapy device.

4.1   BiLevel ST 22

Adjustable parameters

The following parameters can be adjusted:

Displayed and adjustable therapy parameters	Valid for mode			
	CPAP	**S**	**T**	**ST**
Switch therapy device on/off	●	●	●	●
Softstart CPAP pressure	4-20 hPa			
Softstart IPAP pressure		6-22 hPa	6-22 hPa	6-22 hPa
Softstart EPAP pressure		4-20 hPa	4-20 hPa	4-20 hPa
CPAP pressure	4-20 hPa			
IPAP		6-22 hPa	6-22 hPa	6-22 hPa
EPAP		4-20 hPa	4-20 hPa	4-20 hPa
Switch Softstart on/off	●	●	●	●
Softstart disabled - switch on/off	●	●	●	●
Softstart time	5-30 min	5-30 min	5-30 min	5-30 min
Softstart time Tmax	5-30 min	5-30 min	5-30 min	5-30 min
Ti/T			20-67%	20-67%
Switch humidifier on/off	●	●	●	●
Humidifier stage	1-6	1-6	1-6	1-6
Pressure rise on exhalation		1-6	1-6	1-6
Pressure rise on inspiration		1-6	1-6	1-6
Switch Autostart on/off	●	●	●	●
Insp. trigger		1-6		1-6
Exhal. trigger		1-6		0-6
Respiratory frequency			6-45/min	6-45/min

Current values

The following current values are displayed:

- · Actual pressure
- · Disconnection alarm
- · Tube alarm
- · Device date
- · Device time
- · Serial number
- · Firmware version

4.2   CPAP20 / CPAP20e

Adjustable parameters

The following parameters can be adjusted:

Displayed and adjustable therapy parameters	Valid for mode
Switch therapy device on/off	●
Softstart pressure	4-20 hPa
CPAP pressure	4-20 hPa
Switch Softstart on/off	●
Softstart time	5-30 min
Switch humidifier on/off	●
Humidifier stage	1-6

Current values

The following current values are displayed:

· Actual pressure
· Device date
· Device time
· Serial number
· Firmware version

4.3   SOMNObalance / SOMNObalance e / WEINMANNbalance JP

Adjustable parameters

The following therapy parameters can be visualized and adjusted depending on therapy mode:

Displayed and adjustable therapy parameters	SOMNObalance Valid for mode		SOMNObalance e / WEINMANNbalance JP Valid for mode	
	CPAP	**APAP**	**CPAP**	**APAP**
Therapy mode	●	●	●	●
Switch therapy device on/off	●	●	●	●
Softstart pressure	4-18 hPa	4-18 hPa	4-20 hPa	4-20 hPa
CPAP pressure	4-18 hPa		4-20 hPa	
Upper pressure limit		4-18 hPa		4-20 hPa
Lower pressure limit		4-18 hPa		4-20 hPa
Switch Softstart on/off	●	●	●	●
Softstart disabled - switch on/off	●	●	●	●
Softstart time	5-30 min	5-30 min	5-30 min	5-30 min
Switch humidifier on/off	●	●	●	●
Humidifier stage	1-6	1-6	1-6	1-6
Switch Autostart on/off	●	●	●	●
Speed of pressure rise		0.1-0.4 hPa/s		0.1-0.4 hPa/s

Displayed and adjustable therapy parameters	SOMNObalance Valid for mode		SOMNObalance e / WEINMANNbalance JP Valid for mode	
softPAP stage	Off Gentle Normal	Off Gentle Normal	Off Gentle Normal	Off Gentle Normal
softPAP disabled - switch on/off	●	●	●	●
Mask test pressure	0: Off 8 hPa 10 hPa 12 hPa 14 hPa	0: Off 8 hPa 10 hPa 12 hPa 14 hPa	0: Off 8 hPa 10 hPa 12 hPa 14 hPa	0: Off 8 hPa 10 hPa 12 hPa 14 hPa
Analog output	●	●	●	●
Switch Info menu on/off	●	●	●	●
The following parameters can only be adjusted with SD card support (a):				
Exchange mode (b)	Yes No			
Master card (c)	Yes No			
Therapy diary	On Off			
Automatic data storage	Compliance Compliance + efficacy Detailed data			
Manual data storage (d)	Compliance Compliance + efficacy Detailed data			
Clear compliance data	Yes No			
Clear detailed data	Yes No			

(a) Requirements for SD card support:
· More than 10 MB unused memory on the SD card
· Less than 400 MB on the SD card used by other data

(b) If exchange mode is switched on, you cannot change the other parameters.

(c) Only adjustable if the device is connected to an SD card.

(d) To save manually, the quantity of data to be saved must be greater or equal to the data quantity set for Automatic data storage.

Note:
· The therapy device does not save any therapy data to the SD card while it is being configured via the SOMNOadjust remote adjustment or via WEINMANNadjust.
· If WEINMANNadjust or WEINMANNsupport communicate with the therapy device, the therapy devices interrupts the saving of data to the SD card.
· The therapy device can only read a parameter file on an SD card once: As soon as the therapy device has read the parameter file it becomes invalid.

Current values

The following current values are displayed if the card is connected to a therapy device:

· Actual pressure
· Current leakage (from FW 12.0)
· Device date
· Device time
· Mask test
· Serial number
· Firmware version

If the device is connected to an SD card, only patient data in the **Actual Values** area is displayed.

4.4   SOMNOcomfort / SOMNOcomfort 2 / SOMNOcomfort 2e

Adjustable parameters

The following therapy parameters can be visualized and set:

Displayed and adjustable therapy parameters	Valid for SOMNOcomfort	Valid for SOMNOcomfort 2	Valid for SOMNOcomfort 2e
Switch therapy device on/off	●	●	●
Softstart pressure	3-18 hPa	4-18 hPa	4-20 hPa
CPAP pressure	4-18 hPa	4-18 hPa	4-20 hPa
Switch Softstart on/off	●	●	●
Softstart time	5-30 min	5-30 min	5-30 min
Switch humidifier on/off	●	●	●
Humidifier stage	1-6	1-6	1-6
Autostart	●	●	●

Current values

The following current values are displayed:

· Actual pressure
· Device date
· Device time
· Serial number
· Firmware version

4.5 SOMNOset

Adjustable parameters

The following therapy parameters can be visualized and adjusted depending on therapy mode:

Displayed and adjustable therapy parameters	Valid for mode	
	CPAP	APAP
Therapy mode	●	●
Switch therapy device on/off	●	●
Softstart pressure	4-18 hPa	4-18 hPa
CPAP pressure	4-18 hPa	
Upper pressure limit		4-18 hPa
Lower pressure limit		4-18 hPa
Switch Softstart on/off	●	●
Softstart disabled - switch on/off	●	●
Softstart time	5-30 min	5-30 min
Switch humidifier on/off	●	●
Humidifier stage	1-6	1-6
Switch Autostart on/off	●	●
Speed of pressure rise		0.1-0.6 hPa
Analog output	●	●

The modes *pressure profile a*nd *autotitration* are described in a dedicated section!

Current values

The following current values are displayed:

· Actual pressure
· Device date
· Device time
· Therapy time
· Events index
· Serial number
· Firmware version

4.5.1   Autotitration mode

In Autotitration mode (At1, At 2), pressure is adapted as a function of the frequency and severity of the respiratory events which occur.
At the end of the titration night, the data recorded are used to calculate a recommended titration pressure. In this process, the events are detected, stored and evaluated by analysis of the pressure, flow, snoring and oscillatory pressure signal.
In this mode, the current events index and therapy time to date are also displayed under "Current values".

4.5.1.1   Autotitration AT1

No parameters can be changed in the permanent control system (At 1):

Parameter	Value
SOMNOset	
Mode	Autotitration
Regulator	Autotitration (AT 1)
Initial pressure	5 hPa
Upper pressure limit	16 hPa
Lower pressure limit	4 hPa
Start titration after	10 min
Pressure rise time	0.2 hPa/s
Humidifier	On
Humidifier stage	3

The following parameters are displayed:

Therapy parameters displayed	Value range
Initial pressure	5 hPa
Upper pressure limit	16 hPa
Lower pressure limit	4 hPa
Control to start after	10 min
Rate of pressure rise	0.2 hPa/s
Switch humidifier on/off	●
Humidifier stage	1-6

4.5.1.2 **Autotitration AT2**

In the user-definable control system (At 2), you can use a remote setting module to display and set various therapy parameters:

The following parameters can be set for AT2:

Displayed and adjustable therapy parameters	Value range
Initial pressure	4-18 hPa
Upper pressure limit	4-18 hPa
Lower pressure limit	4-18 hPa
Control to start after	1-120 min
Rate of pressure rise	0.1-0.6 hPa/s
Set titration pressure after	180-600 min
Calculation mode	Median Final pressure Pressure percentile (time-related) Pressure percentile (event-related)
Percentile for calculation	10-100 %
Time proportion for calculation	10-100 %
Switch humidifier on/off	●
Humidifier stage	1-6

4.5.1.3   Start of control after

A start phase of at least 5 minutes is set to allow the patient to become accustomed to the mask. Titration starts only after this phase.

As soon as the time set under "Start of control after" has expired, SOMNOset starts detecting respiratory events. These are put into an events index, weighted by degree of severity. The events index is checked after a minimum period. If it exceeds a threshold value, the pressure is increased, the level depending on the frequency and severity of the respiratory events.

In order to reach the required pressure as quickly as possible in the event of high pressure being needed, a greater pressure rise is effected in the case of a particularly high number of respiratory events.

The events index is reset to zero after each pressure change and formed again on the basis of the new pressure level.
If very few events or none at all occur, the events index drops below the pressure reduction threshold value and pressure is reduced accordingly. A new calculation of the events index is started. After a minimum time, therapy pressure is adapted to the changed pressure requirement again if appropriate. If no pressure adaptation takes place (e.g. because the pressure is already below the lower pressure limit and cannot be reduced any further), the events index continues to be formed and is checked when one of the pressure adaptation criteria is reached.

4.5.1.4   Set titration pressure by (split-night)

Following a period which can be set, SOMNOset uses the pre-set Calculation mode to calculate recommended titration pressure (CPAP ventilation pressure) and provides this until SOMNOset is switched off. Setting titration pressure assumes a titration time of at least three hours without any artefacts. An open mask, leaks and flow artefacts may all extend titration time until this is at least three hours. Titration starts only after the time for "Start of control after" set via WEINMANNadjust has elapsed. If the split-night option is not required, it can also be deactivated. This function is always deactivated in fixed control system At1.

4.5.1.5   Calculation mode

You can specify the way in which SOMNOset is to calculate the recommended titration pressure. If a therapy time of at least 3 h has been observed, SOMNOset can determine the recommended titration pressure in accordance with the following procedure:

· **Proportion of time for calculation**

The recommended titration pressure is the limit pressure below which therapy was performed for x % of the time (percentile for calculation). The analysis period relates to x % of the last titration time (proportion of time for calculation). The time proportion for the calculation cannot be adjusted if "Final pressure" is selected for the calculation mode.

· **Percentile for calculation**

The recommended titration pressure is the pressure up to which x % of obstructive events occurred (percentile for calculation). The analysis period relates to x % of the last titration time (proportion of time for calculation). The percentile for the calculation can only be adjusted if one of the pressure percentiles is selected for the calculation mode.

·   **Median**

The recommended titration pressure is the median of the pressure curve in the analysis period quoted (proportion of time for calculation).

·   **Final pressure**

The recommended titration pressure is the pressure prevailing when titration is complete.

4.5.2   Pressure profile

The following window opens when pressure profile mode is selected:
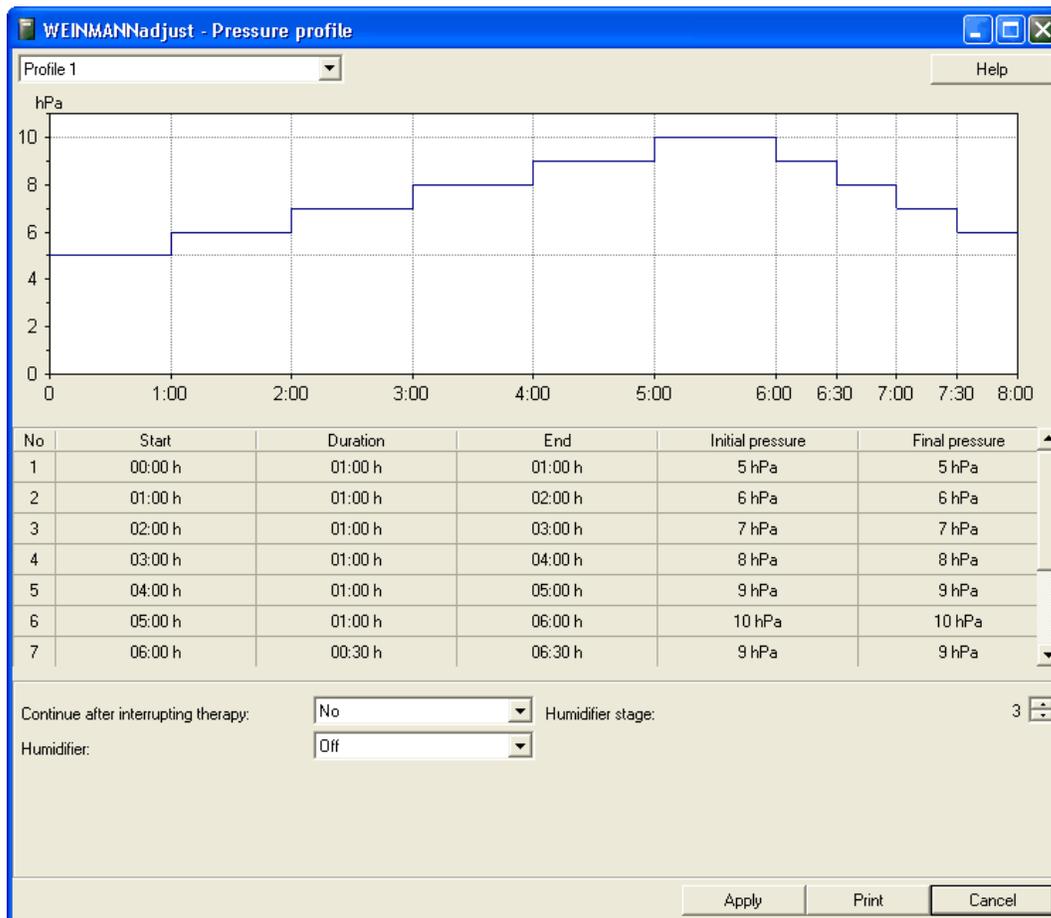
In pressure profile modes "Profile 1", "Profile 2" and "Profile 3 (user-defined)", SOMNOset adapts pressure in accordance with pressure profiles, not respiratory events. The pressure profile selected in each case defines the course of pressure.

You can select between the following pressure profiles:

·   Fixed pressure profile **Profile 1**: initial pressure 5 hPa, 1 hPa increments every 1 h, reducing in 1 hPa increments every half an hour once 10 hPa reached.
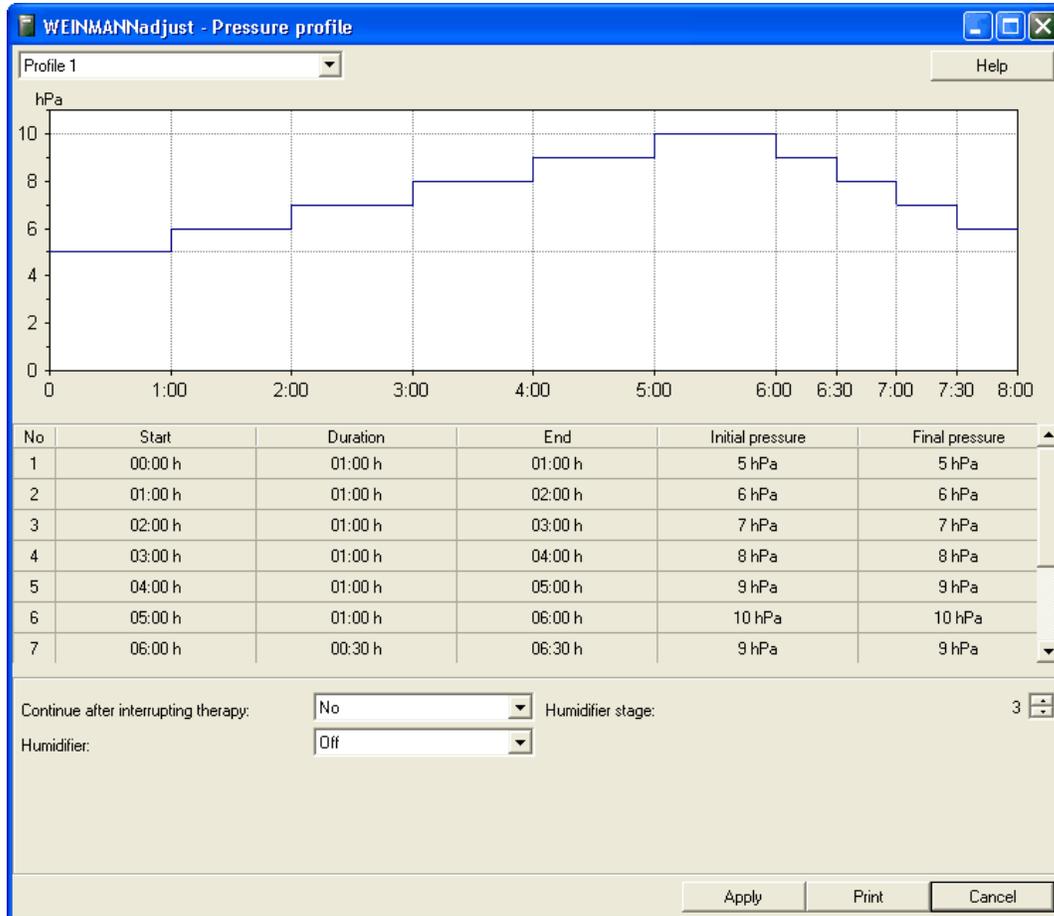
· Fixed pressure profile **Profile 2**: initial pressure 6 hPa, 1 hPa increments every half an hour, reducing in 1 hPa increments every half an hour once 13 hPa reached.
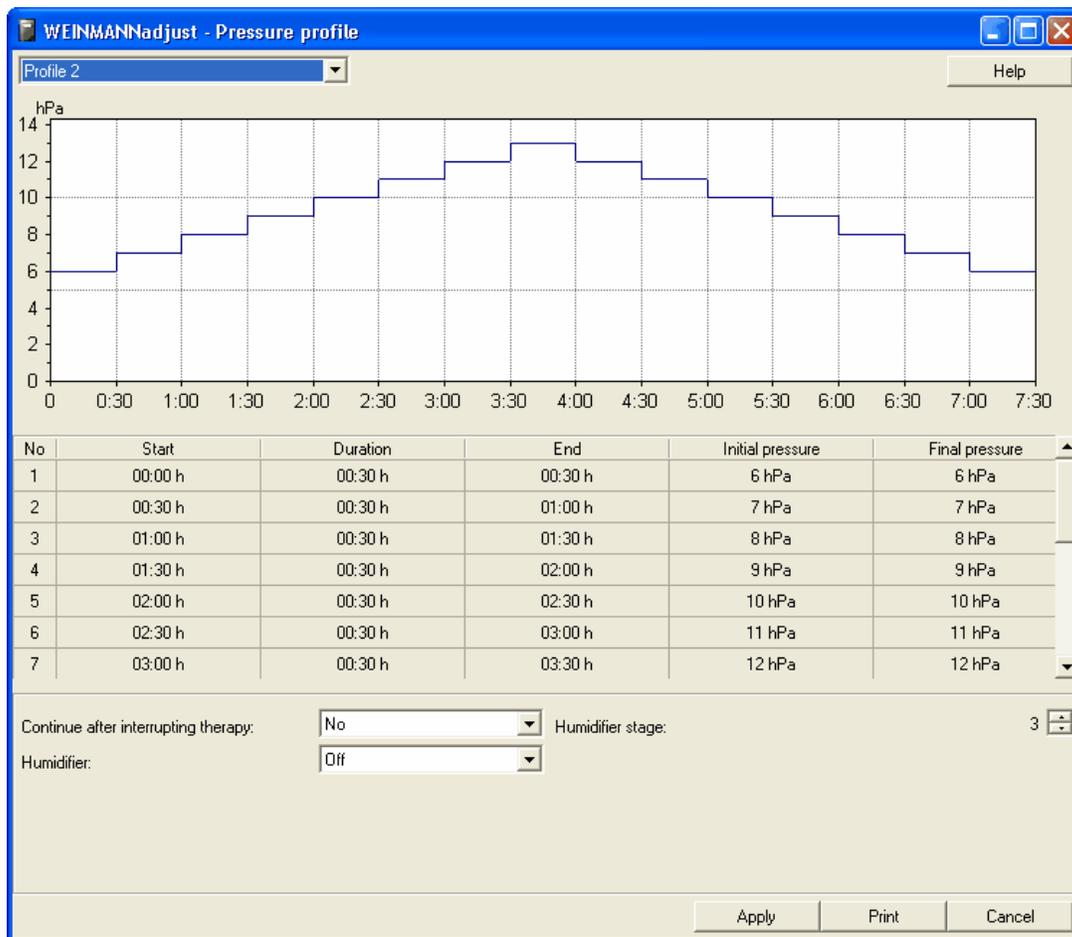
· **Profile 3** (user-defined): can be set by users themselves.
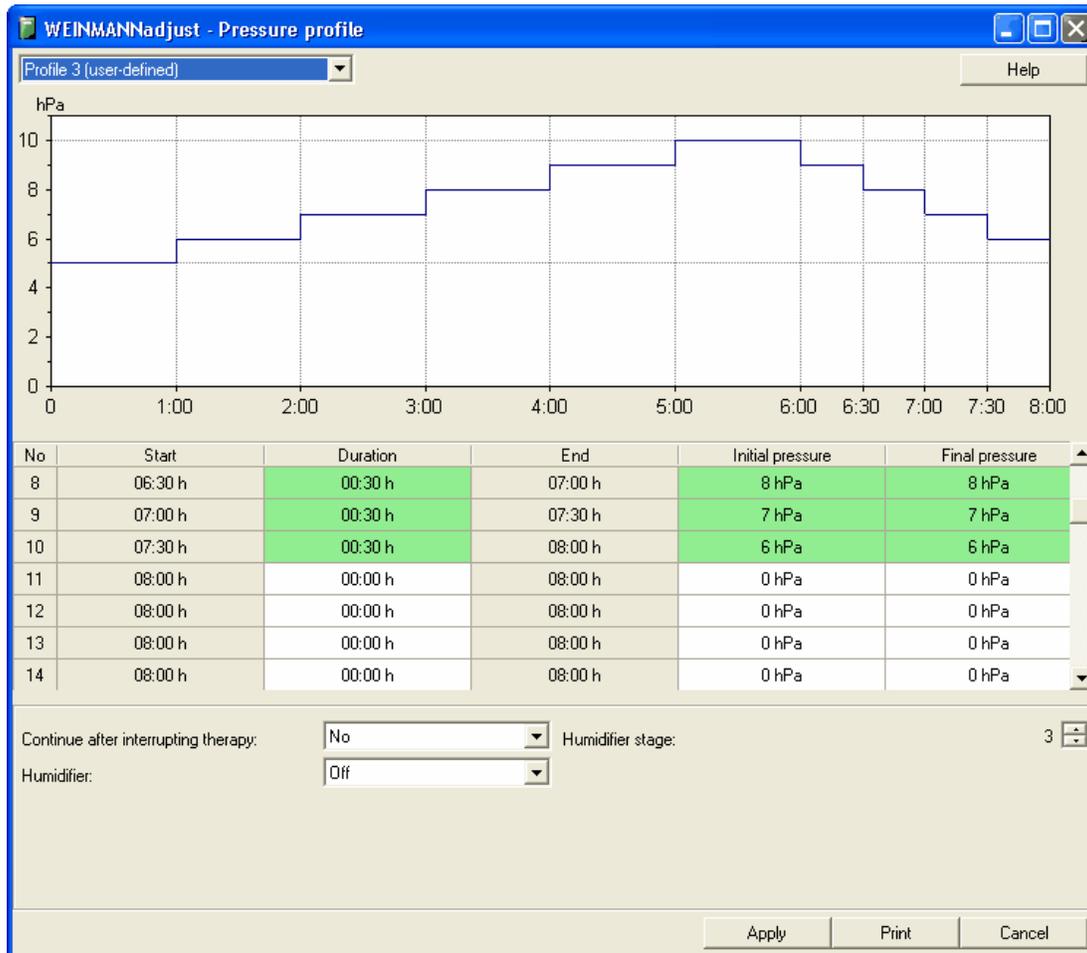
In Profile 3, you can change the segments in the table. The segments are marked in colour for editing:

· white: empty segments
· red: partially-filled segments
· green: complete segments (these are shown in the diagram)

Proceed as follows to set Profile 3.

1. Select the table cell to be changed by double-clicking it or using the Tab key.
2. Enter the values (time in minutes or hours)

Right-click in the table to see the context menu:
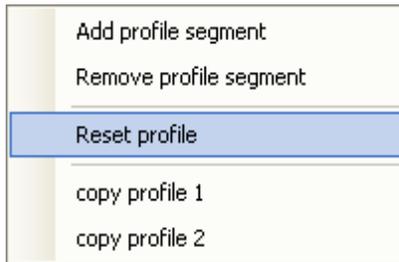
- **Add profile segment**: adds a segment at the point you click (copies the segment clicked on).
- **Remove profile segment**: deletes the segment clicked on.
- **Reset profile**: resets the segments to the value in the device.
- **Copy profile 1**: copies all the segments from Profile 1 to Profile 3 and overwrites all settings in Profile 3.
- **Copy profile 2**: copies all the segments from Profile 2 to Profile 3 and overwrites all settings in Profile 3.

The profile may not contain any empty segments, as the program ignores all segments after an empty segment.

Finally, press **Apply** to apply the selected profile. You then have to send this to the therapy device. You can print the pressure profile by pressing **Print**. Press **Cancel** to discard all changes.

The pressure profiles can be displayed and modified with the SOMNOset switched off using WEINMANNadjust via the serial interface (user-defined profile only).

A pressure profile consists of a maximum of 50 segments. Each segment contains the time from device start, time (0 – 255 min [4:15 h:mm]) and the pressure value (4 – 18 hPa). The total duration of all segments is a maximum of 10 hours. Softstart and Autostart are always deactivated in this mode.

When these modes are activated, SOMNOset does not calculate a recommended titration pressure. Evaluation of the data recorded with WEINMANNsupport supports you in defining the titration pressure.

If you set the button **Continue after interrupting therapy** to **Yes**, the pressure profile is interrupted at this point the next time the therapy device is switched off. Therapy is then continued at the point it switched off the next time the therapy device is switched on.

4.6   SOMNOsmart

Adjustable parameters

The following therapy parameters can be visualized and set:

Displayed and adjustable therapy parameters	Valid for mode
Switch therapy device on/off	●
Upper pressure limit	4-18 hPa
Lower pressure limit	4-18 hPa
Rate of pressure rise	0.2-0.6 hPa/s

Note: parameters can only be set using WEINMANNadjust via the rear SOMNOsmart socket.

Current values

The following current values are displayed:

· Actual pressure
· Device date
· Device time
· Serial number
· Firmware version

4.7   SOMNOsmart 2 up to and incl. FW 5.0

Adjustable parameters

The following therapy parameters can be visualized and set:

Displayed and adjustable therapy parameters	Valid for mode
Switch therapy device on/off	●
Softstart pressure	4-18 hPa
Upper pressure limit	4-18 hPa
Lower pressure limit	4-18 hPa
Switch Softstart on/off	●
Softstart disabled - switch on/off	●
Softstart time	5-30 min
Switch humidifier on/off	●
Humidifier stage	1-6
Switch Autostart on/off	●
Speed of pressure rise	0.1-0.6 hPa/s
Analog output	●

Current values

The following current values are displayed:

· Actual pressure
· Device date
· Device time
· Serial number
· Firmware version

4.8   SOMNOsmart 2 from FW 6.0

Adjustable parameters

The following therapy parameters can be visualized and set:

Displayed and adjustable therapy parameters	Valid for mode
Switch therapy device on/off	●
Softstart pressure	4-18 hPa
Upper pressure limit	4-18 hPa
Lower pressure limit	4-18 hPa
Switch Softstart on/off	●
Softstart disabled - switch on/off	●
Softstart time	5-30 min
Switch humidifier on/off	●
Humidifier stage	1-6
Switch Autostart on/off	●
Speed of pressure rise	0.1-0.6 hPa/s
softPAP stage	Off Gentle Normal
softPAP disabled - switch on/off	●
Switch Full Face mode on/off	●
Analog output	●

Current values

The following current values are displayed:

· Actual pressure
· Device date
· Device time
· Serial number
· Firmware version

4.9 SOMNOsoft +

Adjustable parameters

The following therapy parameters can be visualized and set:

Displayed and adjustable therapy parameters	Valid for mode
Switch therapy device on/off	●
Softstart pressure	4-18 hPa
CPAP	4-18 hPa
Switch Softstart on/off	●
Softstart disabled - switch on/off	●
Softstart time	5-30 min
Switch humidifier on/off	●
Humidifier stage	1-6
Switch Autostart on/off	●
softPAP stage	Off Gentle Normal
softPAP disabled - switch on/off	●
Analog output	●

Current values

The following current values are displayed:

· Actual pressure
· Device date
· Device time
· Serial number
· Firmware version

4.10 SOMNOsoft 2 / SOMNOsoft 2e / WEINMANNsoft 2 JP

Adjustable parameters

The following therapy parameters can be visualized and adjusted depending on therapy mode:

Displayed and adjustable therapy parameters	SOMNOsoft 2	SOMNOsoft 2e / WEINMANNsoft 2 JP
Therapy mode	●	●
Switch therapy device on/off	●	●
Softstart pressure	4-18 hPa	4-20 hPa
CPAP pressure	4-18 hPa	4-20 hPa
Switch Softstart on/off	●	●
Softstart disabled - switch on/off	●	●
Softstart time	5-30 min	5-30 min
Switch humidifier on/off	●	●

Displayed and adjustable therapy parameters	SOMNOsoft 2	SOMNOsoft 2e / WEINMANNsoft 2 JP
Humidifier stage	1-6	1-6
Switch Autostart on/off	●	●
softPAP stage	Off Gentle Normal	Off Gentle Normal
softPAP disabled - switch on/off	●	●
Mask test pressure	0: Off 8 hPa 10 hPa 12 hPa 14 hPa	0: Off 8 hPa 10 hPa 12 hPa 14 hPa
Analog output	●	●
Switch Info menu on/off	●	●
The following parameters can only be adjusted with SD card support (a):		
Exchange mode (b)	Yes No	
Master card (c)	Yes No	
Therapy diary	On Off	
Automatic data storage	Compliance Compliance + efficacy Detailed data	
Manual data storage (d)	Compliance Compliance + efficacy Detailed data	
Clear compliance data	Yes No	
Clear detailed data	Yes No	

(a) Requirements for SD card support:
· More than 10 MB unused memory on the SD card
· Less than 400 MB on the SD card used by other data

(b) If exchange mode is switched on, you cannot change the other parameters.

(c) Only adjustable if the device is connected to an SD card.

(d) To save manually, the quantity of data to be saved must be greater or equal to the data quantity set for Automatic data storage.

Note:
· The therapy device does not save any therapy data to the SD card while it is being configured via the SOMNOadjust remote adjustment or via WEINMANNadjust.
· If WEINMANNadjust or WEINMANNsupport communicate with the therapy device, the therapy device interrupts the saving of data to the SD card.
· The therapy device can only read a parameter file on a SD card once: As soon as the therapy device has read the parameter file it becomes invalid.

Current values

The following current values are displayed if the card is connected to a therapy device:

· Actual pressure
· Current leakage (from FW 12.0)
· Device date
· Device time
· Mask test
· Serial number
· Firmware version

If the device is connected to an SD card, only patient data in the **Actual Values** area is displayed.

4.11 SOMNOvent auto-S

Adjustable parameters

The following therapy parameters can be visualized and set:

Displayed/ adjustable therapy parameters	Value range (*)	Modes and pressure variants			
		S			CPAP
		BiLevel	TriLevel	auto TriLevel	
Therapy mode		●	●	●	●
CPAP	4-20 hPa				●
Pressure variant	BiLevel TriLevel auto TriLevel	●	●	●	
IPAP	4-20 hPa	●	●		
EPAP	4-20 hPa	●	●		
EEPAP	4-20 hPa		●		
EEPAPmin	4-17 hPa			●	
EEPAPmax	4-17 hPa			●	
PDIFF	2-17 hPa			●	
PDIFFmax	2-17 hPa			●	
Respiratory frequency	Off 6-10/min	●	●	6-10/min	
Pressure rise on inspiration	Standard Soft Extra Soft	●	●	●	
Switch Autostart on/off		●	●	●	●
Mask test pressure	Off 8 hPa 12 hPa 16 hPa 20 hPa	●	●	●	●
Softstart pressure	4-20 hPa	●	●	●	●
Softstart time	5-45 min	●	●	●	●

Displayed/ adjustable therapy parameters	Value range (*)	Modes and pressure variants			
		S			CPAP
		BiLevel	TriLevel	auto TriLevel	
Switch Softstart on/off		●	●	●	●
Softstart disabled - switch on/off	Off On	●	●	●	●
Switch humidifier on/off		●	●	●	●
Humidifier stage	1-6	●	●	●	●
Trigger sensitivity	Minus Standard Plus	●	●	●	
Analog output	Pressure Flow rate Leakage rRMV Status	●	●	●	●
Switch therapy device on/off		●	●	●	●

(*) The value ranges for some therapy parameters are restricted as a function of the values assumed by certain other parameters.

Dependencies

Dependencies	Modes and pressure variants		
	S		
	BiLevel	TriLevel	auto TriLevel
EPAP $\leq$ IPAP	●	●	
EPAP $\leq$ EEPAP $\leq$ IPAP		●	
max(4, EEPAP-4) $\leq$ EPAP $\leq$ EEPAP-2 hPa			●
EEPAPmin $\leq$ EEPAPmax			●
PDIFF $\leq$ min(17, 24-EEPAPmax)			●
PDIFFmax $\leq$ min(17, 24-EEPAPmax)			●
PDIFFmax > PDIFF			●
Respiratory frequency "Off" cannot be selected			●
Softstart pressure $\leq$ EEPAPmin			●
Softstart pressure $\leq$ EPAP	●		
Softstart pressure $\leq$ EEPAP		●	

Actual values

The following actual values are displayed:

Actual value	Unit	Modes and pressure variants			
		S			CPAP
		BiLevel	TriLevel	auto TriLevel	
Actual leakage	l/min	●	●	●	●
Actual pressure	hPa	●	●	●	●
Ventilation mode	Spontaneous, timed	●	●	●	
IPAP specified	hPa			●	
EPAP specified	hPa			●	
EEPAP specified	hPa			●	
rRMV	%	●	●	●	●
Respiratory frequency	/min	●	●	●	●
Proportion of timed breaths	%	●	●	●	
Proportion EEPAPmin breaths	%			●	
Proportion EEPAPmax breaths	%			●	
Proportion PDIFF breaths	%			●	
Proportion PDIFFmax breaths	%			●	
AHI	/h	●	●	●	●
cAHI	/h	●	●	●	●
oAHI	/h	●	●	●	●
Date and time of device		●	●	●	●
Serial number		●	●	●	●
Firmware version		●	●	●	●

Calculated values

The following values are calculated:

· IPAPmax
· IPAPmax timed
· IPAPmin
· EPAPmax
· EPAPmin
· EPAPmin timed

4.12 SOMNOvent auto-ST

Adjustable parameters

The following therapy parameters can be visualized and set:

Displayed/ adjustable therapy parameters	Value range (*)	Modes and pressure variants							
		S			CPAP	ST			T
		BiLevel	TriLevel	auto TriLevel		BiLevel	TriLevel	auto TriLevel	
Therapy mode		●	●	●	●	●	●	●	●
CPAP	4-20 hPa				●				
Pressure variant	BiLevel TriLevel auto TriLevel	●	●	●		●	●	●	
IPAP	4-20 hPa	●	●			●	●		●
EPAP	4-20 hPa	●	●			●	●		●
EEPAP	4-20 hPa		●				●		
EEPAPmin	4-17 hPa			●				● (a)	
EEPAPmax	4-17 hPa			●				● (a)	
PDIFF	2-16 hPa			●				● (a). (b)	
PDIFFmax	2-16 hPa			●				● (a)	
Therapy objective (SCOPE)	Off Soft SUPP (Support Ventilation) CONT (controlled)							●	
Respiratory frequency	Off 6-10/min 6-30/min	Off 6-10/min	Off 6-10/min	6-10/min		6-30/min	6-30/min	6-30/min (c)	6-30/min
Latency time	0-20 s					●	●	●(c)	
I:E (relative Inspiration time)	25-67 %					●	●	● (c)	●
Pressure rise on inspiration	Standard Soft Extra Soft	●	●	●		●	●	● (a)	●
Autostart on/off		●	●	●	●	●	●	●	●
Mask test pressure	Off 8 hPa 12 hPa 16 hPa 20 hPa	●	●	●	●	●	●	●	●
Softstart pressure	4-20 hPa	●	●	●	●	●	●	●	●
Softstart time	5-45 min	●	●	●	●	●	●	●	●

Displayed/ adjustable therapy parameters	Value range (*)	Modes and pressure variants							
		S			CPAP	ST			T
		BiLevel	TriLevel	auto TriLevel		BiLevel	TriLevel	auto TriLevel	
Switch Softstart on/off		●	●	●	●	●	●	●	●
Softstart disabled - switch on/off		●	●	●	●	●	●	●	●
Switch humidifier on/off		●	●	●	●	●	●	●	●
Humidifier stage	1-6	●	●	●	●	●	●	●	●
Trigger sensitivity	Minus Standard Plus	●	●	●		●	●	●	
Analog output	Pressure Flow rate Leakage rRMV Status	●	●	●	●	●	●	●	●
Switch therapy device on/off		●	●	●	●	●	●	●	●

(*) The value ranges for some therapy parameters are restricted as a function of the values assumed by certain other parameters.
(a) These therapy parameters are set when the therapy objective (SCOPE) is set to a default value:

	Therapy objective (SCOPE) selected			
	Soft	SUPP (Support Ventilation)	CONT (controlled)	Off
PDIFF	3 hPa	6 hPa	7 hPa	No change
PDIFFmax	8 hPa	10 hPa	12 hPa	
EEPAPmin	6 hPa	6 hPa	6 hPa	
EEPAPmax	16 hPa	14 hPa	12 hPa	
Pressure rise on inspiration	Soft	Soft	Normal	

(b) The minimum changes as a function of the therapy objective (SCOPE) selected:

· Therapy objective (SCOPE) = Soft/Off   PDIFF = 2 hPa
· Therapy objective (SCOPE) = SUPP (Support Ventilation)   PDIFF = 5 hPa
· Therapy objective (SCOPE) = CONT (controlled)   PDIFF = 6 hPa

(c) Only visible and adjustable if "Off" selected for the therapy objective (SCOPE).

Dependencies

Dependencies	Modes and pressure variants						
	S			ST			T
	BiLevel	TriLevel	auto TriLevel	BiLevel	TriLevel	auto TriLevel	
EPAP $\leq$ IPAP	●	●		●	●		
EPAP $\leq$ EEPAP $\leq$ IPAP		●			●		
max(4, EEPAP-4) $\leq$ EPAP $\leq$ EEPAP-2 hPa			●			●	
EEPAPmin $\leq$ EEPAPmax			●			●	
PDIFF $\leq$ min(16, 24-EEPAPmax)			●			●	
PDIFFmax $\leq$ min(16, 24-EEPAPmax)			●			●	
PDIFFmax > PDIFF			●			●	
Respiratory frequency "Off" cannot be selected			●	●	●	●	●
Softstart pressure $\leq$ EEPAPmin			●			●	
Softstart pressure $\leq$ EPAP	●			●			●
Softstart pressure $\leq$ EEPAP		●			●		

Actual values

The following actual values are displayed:

Actual value	Unit	Modes and pressure variants							
		S			CPAP	ST			T
		BiLevel	TriLevel	auto TriLevel		BiLevel	TriLevel	auto TriLevel	
Actual leakage	l/min	●	●	●	●	●	●	●	●
Actual pressure	hPa	●	●	●	●	●	●	●	●
PDIFF specified	hPa			●				●	
Ventilation mode	Spontane-ous, timed	●	●	●		●	●	●	
IPAP specified	hPa			●				●	
EPAP specified	hPa			●				●	
EEPAP specified	hPa			●				●	
rRMV	%	●	●	●	●	●	●	●	●
Respiratory frequency	/min	●	●	●	●	●	●	●	
I:E (relative inspiration time)	%	●	●	●	●	●	●	●	
Proportion of timed breaths	%	●	●	●		●	●	●	
Proportion EEPAPmin breaths	%			●				●	

Actual value	Unit	Modes and pressure variants							
		S			CPAP	ST			T
		BiLevel	TriLevel	auto TriLevel		BiLevel	TriLevel	auto TriLevel	
Proportion EEPAPmax breaths	%			●				●	
Proportion PDIFF breaths	%			●				●	
Proportion PDIFFmax breaths	%			●				●	
AHI	/h	●	●	●	●	●	●	●	●
cAHI	/h	●	●	●	●	●	●	●	●
oAHI	/h	●	●	●	●	●	●	●	●
AI	/h	●	●	●	●	●	●	●	●
HI	/h	●	●	●	●	●	●	●	●
Date and time of device		●	●	●	●	●	●	●	●
Serial number		●	●	●	●	●	●	●	●
Firmware version		●	●	●	●	●	●	●	●

Calculated values

The following values are calculated:

· IPAPmax
· IPAPmax timed
· IPAPmin
· EPAPmax
· EPAPmin
· EPAPmin timed

4.13 SOMNOvent CR

Adjustable parameters

The following therapy parameters can be visualized and set:

Displayed and adjustable therapy parameters	Valid for mode
Switch therapy device on/off	●
Softstart pressure	4-12 hPa
EEPAP min	6-15 hPa from FW 5.0: 6-17 hPa
EEPAP max	6-15 hPa from FW 5.0: 6-17 hPa
IPAP max	11-20 hPa
Switch Softstart on/off	●
Softstart disabled - switch on/off	●
Softstart time	5-30 min
Background frequency	Auto Default 8/min
Default background frequency	8/min from FW 5.0: 6-10/min
Switch humidifier on/off	●
Humidifier stage	1-6
Switch Autostart on/off	●
Analog output	●

Current values

The following current values are displayed:

· Actual pressure
· IPAP specified
· EPAP specified
· EEPAP specified
· PDIFF specified
· Ventilation mode
· Respiratory frequency
· Relative respiratory volume
· % proportion of timed breaths
· % proportion of IPAPmax breaths
· % proportion of EEPAPmin breaths
· % proportion of EEPAPmax breaths (from FW 5.0)
· Device date
· Device time
· rRMV
· Serial number
· Firmware version

4.14   SOMNOvent S up to and incl. FW 3.0

Adjustable parameters

The following therapy parameters can be visualized and set:

Displayed and adjustable therapy parameters	Valid for mode
Switch therapy device on/off	●
Softstart pressure	3-18 hPa
IPAP	4-20 hPa
EPAP	4-18 hPa
Switch Softstart on/off	●
Softstart time	5-30 min
Ramp	Extra Soft Normal Soft
Switch humidifier on/off	●
Humidifier stage	1-6
Switch Autostart on/off	●

Current values

The following current values are displayed:

- Actual pressure
- Device date
- Device time
- Serial number
- Firmware version

4.15   SOMNOvent S from FW 4.0

Adjustable parameters

The following therapy parameters can be visualized and set:

Displayed and adjustable therapy parameters	Valid for mode
Switch therapy device on/off	●
Softstart pressure	3-18 hPa
IPAP	4-20 hPa
EPAP	4-18 hPa
Switch Softstart on/off	●
Softstart time	5-30 min
Insp. trigger	1-5
Exhal. trigger	1-5
Ramp	Extra Soft Normal Soft
Switch humidifier on/off	●
Humidifier stage	1-6
Switch Autostart on/off	●

Current values

The following current values are displayed:

· Actual pressure
· Device date
· Device time
· Serial number
· Firmware version

4.16   SOMNOvent ST up to and incl. FW 4.0

Adjustable parameters

The following therapy parameters can be visualized and adjusted depending on therapy mode:

Displayed and adjustable therapy parameters	Valid for mode			
	CPAP	**S**	**T**	**ST**
Therapy mode CPAP, S, T, ST	●	●	●	●
Switch therapy device on/off	●	●	●	●
Softstart pressure	3-18 hPa	3-18 hPa		
CPAP pressure	4-18 hPa			
IPAP		4-20 hPa	4-20 hPa	4-20 hPa
EPAP		4-18 hPa	4-18 hPa	4-18 hPa
Switch Softstart on/off	●	●		
Softstart disabled - switch on/off	●	●		
Softstart time	5-30 min	5-30 min		
Switch humidifier on/off	●	●	●	●
Humidifier stage	1-6	1-6	1-6	1-6
Switch Autostart on/off	●	●	●	●
Insp. trigger		1-5		1-5
Exhal. trigger		1-5		1-5
Ramp		Extrasoft Normal Soft	Extrasoft Normal Soft	Extrasoft Normal Soft
Respiratory frequency			5-45/min	5-45/min
Inspiration time			25-67%	25-67%

Current values

The following current values are displayed:

- · Actual pressure
- · Device date
- · Device time
- · Serial number
- · Firmware version
- · I:E
- · Respiratory rate

4.17 SOMNOvent ST from FW 5.0

Adjustable parameters

The following therapy parameters can be visualized and adjusted depending on therapy mode:

Displayed and adjustable therapy parameters	Valid for mode			
	CPAP	**S**	**T**	**ST**
Therapy mode CPAP, S, T, ST	●	●	●	●
Switch therapy device on/off	●	●	●	●
Softstart pressure	3-18 hPa	3-18 hPa	3-18 hPa	3-18 hPa
CPAP pressure	4-18 hPa			
IPAP		6-20 hPa	6-20 hPa	6-20 hPa
EPAP		4-18 hPa	4-18 hPa	4-18 hPa
Switch Softstart on/off	●	●	●	●
Softstart disabled - switch on/off	●	●	●	●
Softstart time	5-30 min	5-30 min	5-30 min	5-30 min
Switch humidifier on/off	●	●	●	●
Humidifier stage	1-6	1-6	1-6	1-6
Switch Autostart on/off	●	●	●	●
Insp. trigger		1-6		1-6
Exhal. trigger		1-6		1-6
Ramp		Extrasoft Normal Soft	Extrasoft Normal Soft	Extrasoft Normal Soft
Respiratory frequency			5-45/min	5-45/min
Inspiration time			25-67%	25-67%

Current values

The following current values are displayed:

· Actual pressure
· Device date
· Device time
· Serial number
· Firmware version
· I:E
· Respiratory rate

4.18   VENTIlogic

Adjustable parameters

The following therapy parameters can be visualized and adjusted depending on therapy mode:

Displayed and adjustable therapy parameters	Valid for mode			
	CPAP	**S**	**T**	**ST**
Therapy mode	●	●	●	●
Switch therapy device on/off	●	●	●	●
Softstart pressure	4-20 hPa			
Softstart IPAP pressure		6-35 hPa	6-35 hPa	6-35 hPa
Softstart EPAP pressure		4-20 hPa	4-20 hPa	4-20 hPa
CPAP pressure	4-20 hPa			
IPAP		6-35 hPa	6-35 hPa	6-35 hPa
EPAP		4-20 hPa	4-20 hPa	4-20 hPa
Switch Softstart on/off	●	●	●	●
Softstart disabled - switch on/off	●	●	●	●
Softstart time	5-30 min	5-30 min	5-30 min	5-30 min
Softstart time Tmax	5-30 min	5-30 min	5-30 min	5-30 min
Ti/T			20-67%	20-67%
Volume compensation		●	●	●
Volume comp. VT		160-3,000 ml	160-3,000 ml	160-3,000 ml
Volume comp. Delta P		0-29 hPa	0-29 hPa	0-29 hPa
Switch humidifier on/off	●	●	●	●
Humidifier stage	1-6	1-6	1-6	1-6
Pressure rise on exhalation		1-6	1-6	1-6
Pressure rise on inspiration		1-6	1-6	1-6
Switch Autostart on/off	●	●	●	●
Insp. trigger		1-6		1-6
Exhal. trigger		1-6		0-6
Alarm display		●	●	●
IPAPmin alarm		50-90%	50-90%	50-90%
VT low alarm		160-3,000 ml	160-3,000 ml	160-3,000 ml
Alarm acoustics		●	●	●
Respiratory frequency			6-45	6-45

Displayed and adjustable therapy parameters	Valid for mode		
	SX	**SXX**	**TA**
Therapy mode	●	●	●
Switch therapy device on/off	●	●	●
Softstart IPAP pressure	6-35 hPa	6-35 hPa	
Softstart EPAP pressure	4-20 hPa	4-20 hPa	
IPAP	6-35 hPa	6-35 hPa	6-35 hPa
EPAP	4-20 hPa	4-20 hPa	4-20 hPa
Switch Softstart on/off	●	●	
Softstart disabled - switch on/off	●	●	
Softstart time	5-30 min	5-30 min	
Softstart time Tmax	5-30 min	5-30 min	
Volume compensation	●	●	●
Volume comp. VT	160-3,000 ml	160-3,000 ml	160-3,000 ml
Volume comp. Delta P	0-29 hPa	0-29 hPa	0-29 hPa
Switch humidifier on/off	●	●	●
Humidifier stage	1-6	1-6	1-6
Pressure rise on exhalation	1-6	1-6	
Pressure rise on inspiration	1-6	1-6	
Switch Autostart on/off	●	●	
Insp. trigger	1-6	1-6	
Exhal. trigger	1-6	1-6	
Target value on inspiration (Tti)	0.5-3.3 s	0.5-3.3 s	
Delta Tti	0-1.4 s	0-1.4 s	
Target value for exhal. (Tte)		0.5-6.6 s	
Alarm display	●	●	●
IPAPmin alarm	50-90%	50-90%	50-90%
VT low alarm	160-3,000 ml	160-3,000 ml	160-3,000 ml
Alarm acoustics	●	●	●
Respiratory frequency F			6-45/min
Delta F			0-39/min
Impedance type			Normal Obstructive Restrictive
Manual analysis			Start Inactive

Current values

The following current values are displayed:

· Actual pressure
· VT low alarm
· Disconnection alarm
· Tube alarm
· IPAPmin alarm
· Device date
· Device time
· Serial number
· Firmware version

Detecting alarms

The following table lists **all the alarms of the device**.

Alarms	Type of alarm
IPAPmin alarm	Patient alarm
Tube alarm	System alarm
Disconnection alarm	System alarm
VT low alarm	Patient alarm

4.19 VENTImotion up to and incl. FW 5.0

Adjustable parameters

The following therapy parameters can be visualized and adjusted depending on therapy mode:

Displayed and adjustable therapy parameters	Valid for mode		
	CPAP	S	T
Therapy mode	●	●	●
Switch therapy device on/off	●	●	●
Softstart CPAP pressure	4-20 hPa		
Softstart IPAP pressure		6-35 hPa	6-35 hPa
Softstart EPAP pressure		4-20 hPa	4-20 hPa
CPAP pressure	4-20 hPa		
IPAP		6-35 hPa	6-35 hPa
EPAP		4-20 hPa	4-20 hPa
Switch Softstart on/off	●	●	●
Softstart disabled - switch on/off	●	●	●
Softstart time	5-30 min	5-30 min	5-30 min
Softstart time Tmax	5-30 min	5-30 min	5-30 min
Ti/T			20-67%
Volume compensation		●	●
Volume comp. VT		300-3,000 ml	300-3,000 ml
Volume comp. Delta P		0-29 hPa	0-29 hPa
Switch humidifier on/off	●	●	●
Humidifier stage	1-6	1-6	1-6
Pressure rise on exhalation		1-6	1-6
Pressure rise on inspiration		1-6	1-6
Switch Autostart on/off	●	●	●
Insp. trigger		1-6	
Exhal. trigger		1-6	
Alarm display	●	●	●
IPAPmin alarm	50-90%	50-90%	50-90%
VT low alarm	300-3,000 ml	300-3,000 ml	300-3,000 ml
Alarm acoustics	●	●	●
Respiratory frequency			6-45/min

Displayed and adjustable therapy parameters	Valid for mode		
	ST	**SX**	**SXX**
Therapy mode	●	●	●
Switch therapy device on/off	●	●	●
Softstart IPAP pressure	6-35 hPa	6-35 hPa	6-35 hPa
Softstart EPAP pressure	4-20 hPa	4-20 hPa	4-20 hPa
IPAP	6-35 hPa	6-35 hPa	6-35 hPa
EPAP	4-20 hPa	4-20 hPa	4-20 hPa
Switch Softstart on/off	●	●	●
Softstart disabled - switch on/off	●	●	●
Softstart time	5-30 min	5-30 min	5-30 min
Softstart time Tmax	5-30 min	5-30 min	5-30 min
Ti/T	20-67%		
Volume compensation	●	●	●
Volume comp. VT	300-3,000 ml	300-3,000 ml	300-3,000 ml
Volume comp. Delta P	0-29 hPa	0-29 hPa	0-29 hPa
Switch humidifier on/off	●	●	●
Humidifier stage	1-6	1-6	1-6
Pressure rise on exhalation	1-6	1-6	1-6
Pressure rise on inspiration	1-6	1-6	1-6
Switch Autostart on/off	●	●	●
Insp. trigger	1-6	1-6	1-6
Exhal. trigger	0-6	1-6	1-6
Target value for insp. (Tti)		0.5-3.3 s	0.5-3.3 s
Delta Tti		0-1.4 s	0-1.4 s
Target value for exhal. (Tte)			0.5-6.6 s
Alarm display	●	●	●
IPAPmin alarm	50-90%	50-90%	50-90%
VT low alarm	300-3,000 ml	300-3,000 ml	300-3,000 ml
Alarm acoustics	●	●	●
Respiratory frequency	6-45/min		

Current values

The following current values are displayed:

· Actual pressure
· VT low alarm
· Disconnection alarm
· Tube alarm
· IPAPmin alarm
· Device date
· Device time
· Serial number
· Firmware version

Detecting alarms

The following table lists **all the alarms of the device**:

Alarms	Type of alarm
IPAPmin alarm	Patient alarm
Tube alarm	System alarm
Disconnection alarm	System alarm
VT low alarm	Patient alarm

4.20 VENTImotion from FW 6.0

Adjustable parameters

The following therapy parameters can be visualized and adjusted depending on therapy mode:

Displayed and adjustable therapy parameters	Valid for mode		
	CPAP	**S**	**T**
Therapy mode	●	●	●
Switch therapy device on/off	●	●	●
Softstart CPAP pressure	4-20 hPa		
Softstart IPAP pressure		6-35 hPa	6-35 hPa
Softstart EPAP pressure		4-20 hPa	4-20 hPa
CPAP pressure	4-20 hPa		
IPAP		6-35 hPa	6-35 hPa
EPAP		4-20 hPa	4-20 hPa
Switch Softstart on/off	●	●	●
Softstart disabled - switch on/off	●	●	●
Softstart time	5-30 min	5-30 min	5-30 min
Softstart time Tmax	5-30 min	5-30 min	5-30 min
Ti/T			20-67%
Volume compensation		●	●
Volume comp. VT		160-3,000 ml	160-3,000 ml
Volume comp. Delta P		0-29 hPa	0-29 hPa
Switch humidifier on/off	●	●	●
Humidifier stage	1-6	1-6	1-6
Pressure rise on exhalation		1-6	1-6
Pressure rise on inspiration		1-6	1-6
Switch Autostart on/off	●	●	●
Insp. trigger		1-6	
Exhal. trigger		1-6	
Alarm display		●	●
IPAPmin alarm		50-90%	50-90%
VT low alarm		160-3,000 ml	160-3,000 ml
Alarm acoustics		●	●
Respiratory frequency			6-45/min

Displayed and adjustable therapy parameters	Valid for mode		
	ST	**SX**	**SXX**
Therapy mode	●	●	●
Switch therapy device on/off	●	●	●
Softstart IPAP pressure	6-35 hPa	6-35 hPa	6-35 hPa
Softstart EPAP pressure	4-20 hPa	4-20 hPa	4-20 hPa
IPAP	6-35 hPa	6-35 hPa	6-35 hPa
EPAP	4-20 hPa	4-20 hPa	4-20 hPa
Switch Softstart on/off	●	●	●
Softstart disabled - switch on/off	●	●	●
Softstart time	5-30 min	5-30 min	5-30 min
Softstart time Tmax	5-30 min	5-30 min	5-30 min
Ti/T	20-67%		
Volume compensation	●	●	●
Volume comp. VT	160-3,000 ml	160-3,000 ml	160-3,000 ml
Volume comp. Delta P	0-29hPa	0-29 hPa	0-29 hPa
Switch humidifier on/off	●	●	●
Humidifier stage	1-6	1-6	1-6
Pressure rise on exhalation	1-6	1-6	1-6
Pressure rise on inspiration	1-6	1-6	1-6
Switch Autostart on/off	●	●	●
Insp. trigger	1-6	1-6	1-6
Exhal. trigger	0-6	1-6	1-6
Target value for insp. (Tti)		0.5-3.3 s	0.5-3.3 s
Delta Tti		0-1.4 s	0-1.4 s
Target value for exhal. (Tte)			0.5-6.6 s
Alarm display	●	●	●
IPAPmin alarm	50-90%	50-90%	50-90%
VT low alarm	160-3,000 ml	160-3,000 ml	160-3,000 ml
Alarm acoustics	●	●	●
Respiratory frequency	6-45/min		

Current values

The following current values are displayed:

· Actual pressure
· VT low alarm
· Disconnection alarm
· Tube alarm
· IPAPmin alarm
· Device date
· Device time
· Serial number
· Firmware version

Detecting alarms

The following table lists **all the alarms of the device**:

Alarms	Type of alarm
IPAPmin alarm	Patient alarm
Tube alarm	System alarm
Disconnection alarm	System alarm
VT low alarm	Patient alarm

4.21 VENTImotion 2 up to and incl. FW 1.07

Adjustable parameters

The following therapy parameters can be visualized and adjusted depending on therapy mode:

Displayed and adjustable therapy parameters	Valid for mode		
	T	ST	CPAP
Switch therapy device on/off	●		●
Softstart CPAP pressure			4-20 hPa
Softstart IPAP pressure	6-30 hPa	6-30 hPa	
Softstart EPAP pressure	4-20 hPa	4-20 hPa	
CPAP pressure			4-20 hPa
IPAP	6-30 hPa	6-30 hPa	
EPAP	4-20 hPa	4-20 hPa	
Switch Softstart on/off	●	●	●
Softstart disabled - switch on/off	●	●	●
Softstart time	5-30 min	5-30 min	5-30 min
Softstart time Tmax	5-30 min	5-30 min	5-30 min
Ti/T	20-67%	20-67%	
Ti	300s	300s	
Compensation	Off, slow, moderate, fast	Off, slow, moderate, fast	
Volume comp. VT	160-3000ml	160-3000ml	
Volume comp. Delta P	0-30 hPa	0-30 hPa	
AirTrap Control	●	●	
Switch humidifier on/off	●	●	●
Humidifier stage	1-6	1-6	1-6
Pressure rise on exhalation	1-6	1-6	
Pressure rise on inspiration	1-6	1-6	
Switch Autostart on/off	●	●	●
Insp. trigger		1-6	
Exhal. trigger		0-6	
Insp. trigger blocking time		0,5-5s	
Alarm display	●	●	
IPAPmin alarm	50-90%		
VT low alarm	160-3000ml	160-3000ml	

Displayed and adjustable therapy parameters	Valid for mode		
Alarm acoustics	●	●	
Respiratory frequency	6-45/min	6-45/min	

Current values

The following current values are displayed:

· Actual pressure
· Device date
· Device time
· Serial number
· Firmware version

Detecting alarms

The following table lists **all the alarms of the device**:

Alarms	Type of alarm
IPAPmin alarm	Patient alarm
Tube alarm	System alarm
Disconnection alarm	System alarm
VT low alarm	Patient alarm

4.22   VENTImotion 2 from FW 2.01

Adjustable parameters

The following therapy parameters can be visualized and adjusted depending on therapy mode:

Displayed and adjustable therapy parameters	Valid for mode			
	T	ST	CPAP	TA
Switch therapy device on/off	●		●	
Softstart CPAP pressure			4-20 hPa	
Softstart IPAP pressure	6-30 hPa	6-30 hPa		
Softstart EPAP pressure	4-20 hPa	4-20 hPa		
CPAP pressure			4-20 hPa	
IPAP	6-40 hPa	6-40 hPa		6-40 hPa
EPAP	4-20 hPa	4-20 hPa		4-20 hPa
Switch Softstart on/off	●	●	●	
Softstart disabled - switch on/off	●	●	●	
Softstart time	5-30 min	5-30 min	5-30 min	
Softstart time Tmax	5-30 min	5-30 min	5-30 min	
Ti/T	15-67%	15-67%		
Ti	300s	300s		
Compensation	Off, slow,	Off, slow,		Off, slow,

Displayed and adjustable therapy parameters	Valid for mode			
	moderate, fast	moderate, fast		moderate, fast
Volume comp. VT	160-3000ml	160-3000ml		160-3000ml
Volume comp. Delta P	0-30 hPa	0-30 hPa		0-30 hPa
AirTrap Control	●	●		
Switch humidifier on/off	●	●	●	●
Humidifier stage	1-6	1-6	1-6	1-6
Pressure rise on exhalation	1-6	1-6		
Pressure rise on inspiration	1-6	1-6		
Switch Autostart on/off	●	●	●	●
Insp. trigger		1-6		
Exhal. trigger		0-6		
Insp. trigger blocking time		0,5-5s		
Alarm display	●	●		●
IPAPmin alarm	50-90%			50-90%
VT low alarm	160-3000ml	160-3000ml		160-3000ml
Alarm acoustics	●	●		●
Respiratory frequency	6-45/min	6-45/min		6-45/min

Current values

The following current values are displayed:

· Actual pressure
· Current leakage
· Device date
· Device time
· Serial number
· Firmware version

Detecting alarms

The following table lists **all the alarms of the device**:

Alarms	Type of alarm
IPAPmin alarm	Patient alarm
Tube alarm	System alarm
Disconnection alarm	System alarm
VT low alarm	Patient alarm

4.23   Change devices

To send the saved parameters of one device to another device of the same device type, proceed as outlined below.

1. Connect one therapy device to WEINMANNadjust.
2. Read out the therapy parameters of the therapy device using WEINMANNadjust.
3. Save the parameters read out in a file on the hard drive.
4. Disconnect the connection to the therapy device.
5. Connect the other therapy device to WEINMANNadjust.
6. Load the therapy parameters from the file in WEINMANNadjust.
7. Now send the therapy parameters to the therapy device which is now connected.
8. Disconnect the connection to the therapy device.

5   Adjustable parameters

5.1   Alarm display

You can switch the **alarm display** for the patient alarms on and off. If you switch off the alarm display, the alarm acoustics for the patient alarms are muted on the therapy device.

Some common alarms are introduced in the following sections.

Caution:
Transmission of alarms is not guaranteed. Updating of the alarm display depends on data transmission. The updating interval for alarm events is generally one second. Faults in the hardware, an interruption to the connection to the therapy device or simultaneous operation of the menu on the device can delay the update interval. An absolute match in time between the display of current alarms and the occurrence/suspension of alarms in the device cannot be guaranteed.

5.1.1   Alarm acoustics

You can switch the acoustic signal for the patient alarms on the therapy device on and off.
In the switched-off state, the alarm signal for the patient alarms is muted on the **therapy device**. The alarm acoustics for the patient alarms can only be switched on if the alarm display for the patient alarms is switched on.

5.1.2   IPAPmin alarm

The **IPAPmin alarm** is triggered when an overall leak is detected which is so large that the therapy device can no longer reach the set IPAP pressure.
This will be the case, for example, if the patient's mask has slipped out of position.

5.1.3   VT low alarm

The **VT low alarm** is triggered when supply of a minimum volume to the patient can no longer be guaranteed.
This will be the case, for example, if there is a change in the patient's lung impedance (resistance and compliance).

5.2 Exchange mode

If a therapy device is defective, you can transfer the therapy parameters from this therapy device to a replacement device with the help of an SD card:

1. Connect the replacement device to WEINMANNadjust.
2. If available: Remove the SD card from the replacement device (otherwise exchange mode cannot be enabled).
3. Activate exchange mode in the Parameter area.
   The replacement device cannot be used for therapy while exchange mode is enabled.
4. Insert the SD card of the defective therapy device into the replacement device.
   The replacement device transfers the therapy parameters from the SD card. The therapy parameters of the defective device remains stored on the SD card and can be imported into WEINMANNadjust. The replacement device deletes all internally stored therapy parameters.

Note:
Alternatively, you can also place a therapy device in exchange mode using a master card.

The following therapy devices have an exchange mode:

- SOMNObalance
- SOMNObalance e
- SOMNOsoft 2
- SOMNOsoft 2 e
- WEINMANNbalance JP
- WEINMANNsoft 2 JP

5.3 Humidifier

The **humidifier** can only be switched on when the therapy device is switched off and a humidifier is connected to the therapy device.

5.3.1 Humidifier stage

The higher the **humidifier stage** set, the more the respiratory air is humidified.

5.4 Respiratory frequency

The **respiratory frequency** specified by the device.

5.5 Autostart

If **Autostart** is activated, the therapy device switches on automatically as soon as a breath is taken into the mask.

The device does not switch back off automatically when the patient takes the mask off. Even with the Autostart function activated, the device must still be switched off using the On/Off key on the device or via the software.

5.6 Delta F

Use the parameters **Respiratory frequency** and **delta F** to specify a framework within which the device can select respiratory frequency and vary it if necessary. If the device is unable to detect a regular breathing pattern in the analysis phase, the patient will be ventilated at a default pressure profile and "Respiratory frequency" frequency.

5.7 Pressure

5.7.1 Pressure limits

There is an **upper** and a **lower** pressure limit. These are for limiting the variability of therapy pressure.

5.7.2 EPAP

The EPAP is the pressure level during exhalation (**EPAP**: **E**xpiratory **P**ositive **A**irway **P**ressure)
EPAP cannot be set **greater than IPAP** - if necessary, change this value first.

5.7.3 IPAP

The IPAP is the pressure level during inspiration (**IPAP**: **I**nspiratory **P**ositive **A**irway **P**ressure).

5.7.4 EEPAP max

The **EEPAP** (= End-Expiratory Positive Airway Pressure) is the pressure level at the end of exhalation.

EEPAPmax is the upper pressure limit of the EEPAP and corresponds to the upper pressure limit of an autoCPAP device.

5.7.5 EEPAP min

The **EEPAP** (= End-Expiratory Positive Airway Pressure) is the pressure level at the end of exhalation.

EEPAPmin is the lower pressure limit of EEPAP and corresponds to the lower pressure limit of an autoCPAP device.

5.7.6 IPAP max

The **IPAPmax** is the upper limit of IPAP pressure which can be controlled.

5.7.7 Softstart pressure

Information about Softstart pressure can be found in the section entitled **Softstart**.

5.8 Rate of pressure rise

The **speed of pressure rise** is the change in pressure per second (rise time).

5.8.1 Speed of pressure rise on inspiration

The speed of pressure rise **on inspiration** is the speed of pressure rise when the patient breathes in.

5.8.2 Speed of pressure drop on exhalation

The speed of pressure drop **on exhalation** is the speed of pressure drop when the patient breathes out.

5.9   Pressure variants

With SOMNOvent auto-S and SOMNOvent auto-ST in S mode and in ST mode (SOMNOvent auto-ST only), you can set different pressure variants.

- **BiLevel**: using the BiLevel pressure variant, you can set fixed values for the IPAP and EPAP pressure levels.
- **TriLevel**: the TriLevel pressure variant provides the option of setting pressure at the end of (exhalation (EEPAP) separately.
- **auto TriLevel**: with the auto TriLevel pressure variant, the therapy device continuously adapts the IPAP, EPAP and EEPAP pressure levels to the patient's requirements.

More information about the pressure variants can be found in the instructions for use for the therapy devices.

5.10   Full Face mode

Note: Full Face mode means that the device is operated with a full-face mask. The term "mode" should not be confused with a therapy mode.

The **Full Face mode** guarantees therapy of obstructive sleep-related respiratory disorders with an adequately high pressure level, even when using types of mask which significantly attenuate the rise of the OPS signal as resistance of the respiratory tract increases.
These include full-face masks. A list of common types of mask for which this mode should be used can be requested from Löwenstein Medical.

At low therapy pressures in particular, the detection threshold for OPS rises is reduced to distinguish between obstructive and central apnoeas and hypopnoeas. This increases the sensitivity of detection of obstructive events, resulting in a higher mean therapy pressure than with APAP mode for standard masks. However, central respiratory disorders can still be detected, with increasing reliability as pressure rises. In comparison to APAP devices without OPS, therefore, a severely overshooting pressure reaction is prevented in the case of central events. In order to avoid this kind of pressure reaction entirely, either patients with a high diagnosed central RDI should be put onto a standard mask or the upper pressure limit should be set to suit the individual pressure requirement.

5.11   Impedance type

InfomenüUse the **Impedance type** parameter to specify the patient's fundamental lung mechanism type.
This parameter is required to calculate the speed of pressure rise.

The following settings are possible:
- Obstructive (relatively high speed of pressure rise)
- Normal (moderate speed of pressure rise)
- Restrictive (relatively low speed of pressure rise)

5.12 Info menu

In the Parameter area, you can switch the Info menu at the therapy device on and off:

The following therapy devices have an Info menu:

- SOMNObalance
- SOMNObalance e
- SOMNOsoft 2
- SOMNOsoft 2 e
- WEINMANNbalance JP
- WEINMANNsoft 2 JP

5.13 Inspiration time (Ti/T)

The **inspiration time** (Ti/T) is the proportion of inspiration time in relation to the total respiration cycle.

5.14 Background frequency

The frequency calculated automatically from patient-specific respiration should be set as the **background frequency** during apnoeas. Although a fixed frequency can also be selected, this only makes sense if the patient's respiratory frequency is generally higher than the fixed frequency.

5.15 Card settings

In this area, you can make the settings for the SD card:

Master card
Therapy diary
Automatic data storage
Manual data storage
Clear compliance data
Clear detailed data

SOMNObalance		
Mode	CPAP	▼
Pressure		
CPAP	5 hPa	⬍
Exchange mode	No	▼
softPAP stage	Off	▼
softPAP disabled	On	▼
Info menu	On	▼
Mask test pressure	0: off	▼
Card settings		
Device has not yet loaded this configuration		
Master card	No	▼
Therapy diary	On	▼
Automatic data storage	Compliance + efficacy	▼
Manual data storage	Compliance + efficacy	▼
Clear compliance data	No	▼
Clear detailed data	No	▼
Soft start disabled	Off	▼
Softstart	On	▼
Softstart pressure	4 hPa	⬍
Softstart time	5 min	⬍
Autostart	Off	▼
Humidifier	Off	▼
Humidifier stage	3	⬍
Analog output		
Channel 1	Leakage	▼
Channel 2	Flow	▼

The card settings are possible with the following therapy devices:

· SOMNObalance
· SOMNObalance e
· SOMNOsoft 2
· SOMNOsoft 2 e
· WEINMANNbalance JP
· WEINMANNsoft 2 JP

5.15.1 Master card

With a master card, you can copy a configuration created in WEINMANNadjust to several therapy devices.

To make an SD card a master card, you must activate this function in the Parameter area. With this master card, you can copy the configuration to several therapy devices. The therapy device cannot store therapy data on a master card and you cannot switch on the therapy device while a master card is inserted in it.

5.15.2 Therapy diary

A therapy diary is a *.csv file, which can be optionally stored on an SD card and can be read by various PC programs (e.g. Microsoft® Excel®). The therapy diary contains the compliance data and Info menu parameters of the therapy device, with which you can create a trend diagram.

```
SOMNObalance
  Mode                                              CPAP              ▼
    Pressure
      CPAP                                                  5 hPa     ▲▼
  Exchange mode                                     No                ▼
    softPAP stage                                   Off               ▼
      softPAP disabled                              On                ▼
  Info menu                                         On                ▼
  Mask test pressure                                0: off            ▼
    Card settings
      Device has not yet loaded this configuration
      Master card                                   No                ▼
      Therapy diary                                 On                ▼
      Automatic data storage                        Compliance + efficacy  ▼
      Manual data storage                           Compliance + efficacy  ▼
      Clear compliance data                         No                ▼
      Clear detailed data                           No                ▼
  Soft start disabled                               Off               ▼
    Softstart                                       On                ▼
    Softstart pressure                                    4 hPa       ▲▼
    Softstart time                                        5 min       ▲▼
  Autostart                                         Off               ▼
  Humidifier                                        Off               ▼
    Humidifier stage                                      3           ▲▼
  Analog output
    Channel 1                                       Leakage           ▼
    Channel 2                                       Flow              ▼
```

To create a therapy diary, you must activate this function in the [Parameter] area. If this function is enabled, the therapy device saves the therapy diary on the SD card. From there, you can import it into the PC, where you can edit it. If the therapy diary is not displayed in different columns on the PC, in the Regional Options of the operating system, set the List Separator Character to semicolon.

5.15.3 Automatic data storage

Here you can define the scope of therapy data the therapy device automatically saves on the SD card at the end of a measurement or when an SD card is inserted.

You can save the following data:

- **Compliance:** Includes the therapy data of up to 366 days and therefore corresponds to the annual compliance with additional statistics from the Info menu.
- **Compliance + efficacy:** Includes the annual compliance and up to 30 days weekly compliance.
- **Detailed data:** In addition to Compliance + efficacy, contains up to 35 hours titration data.

5.15.4 Manual data storage

Here you can define the scope of therapy data to be manually stored on the SD card by pressing the relevant button on the therapy device.

You can save the following data:

- **Compliance:** Includes the therapy data of up to 366 days and therefore corresponds to the annual compliance with additional statistics from the Info menu.
- **Compliance + efficacy:** Includes the annual compliance and up to 30 days weekly compliance.
- **Detailed data:** In addition to Compliance + efficacy, contains up to 35 hours titration data.

5.15.5 Clear compliance data

Here you can decide whether the therapy device deletes the compliance from its internal memory or not when an SD card is inserted. If you activate **Clear compliance data**, Clear detailed data is also automatically enabled.

5.15.6 Clear detailed data

Here you can decide whether the therapy device deletes the detailed data from its internal memory or not when an SD card is inserted. **Clear detailed data** is automatically enabled if you activate **Clear compliance data** .

5.16 Mask test

In **mask test**, it is possible to test whether the mask has been correctly adapted. Leaks due to a poorly-adapted mask often occur only at higher pressures.
To check that the mask is seated firmly, a higher pressure can be output for the first 30 seconds after the device is switched on.

5.17 Ramp

Use the **ramp settings** to determine how fast therapy pressure is to be reached in the inspiration phase/the exhalation phase.

5.18 Oxygen supply

There is an oxygen valve on the device which also allows oxygen to be supplied to the respiratory flow during ventilation.

5.19 softPAP

The **softPAP** function increases patient comfort by briefly reducing pressure on the change from inspiration to exhalation. In softPAP function, the respiratory flow curve is continuously evaluated to detect transitions from inspiration to exhalation in good time. Therapy pressure is reduced before the transition to exhalation to allow a proportion of passive exhalation.

5.20 Softstart

The **Softstart** option facilitates the falling asleep phase or acclimatization of the patient to an initially high inspiration pressure when it is first set.

Changes to settings only become effective once 'ON' is selected in the selection list for the Softstart parameter. Softstart settings are retained after the device is switched off. Whenever the therapy device is started up, it automatically starts in Softstart mode if this was switched on before.

5.20.1 Softstart pressure

The Softstart option facilitates the falling asleep phase or acclimatization of the patient to an initially high inspiration pressure when it is first set.

Therapy pressure is controlled to the set **Softstart pressure** at the start of therapy and then in the course of Softstart time, slowly increases to the set specified values (therapy pressures).

5.21.1.1 Softstart EPAP pressure

Therapy pressure on exhalation is controlled down to the initial pressure set by the doctor (Softstart EPAP pressure).

5.21.1.2 Softstart IPAP pressure

Therapy pressure on inspiration is controlled down to the initial pressure set by the doctor (Softstart IPAP pressure).

5.21.2 Softstart disabled

Softstart can be disabled to stop the patient switching on Softstart on this device.

5.21.3 Softstart time

Softstart time specifies the period in which Softstart pressure rises to set therapy pressure. On some therapy devices, the Softstart time limit (Tmax) limits the setting for Softstart time. If appropriate, change the Softstart time limit first.

5.21.4 Softstart time Tmax

Softstart time **Tmax** is the upper limit for Softstart time. It is specified by the doctor. Patients can set their own Softstart time up to this limit.

5.22 Target values (extended respiratory freedom)

Specifying **Target values** for inspiration time or for inspiration and exhalation time allows you to manage the patient's spontaneous respiratory rhythm. In the event of short-term deviations from the target values, e.g. as a result of sighing or a brief intermediate breath, switching between IPAP and EPAP follows the patient's respiration. If longer-term deviations occur, the device leads the patient back to the set respiratory rhythm by gradually restricting inspiration/exhalation time.

In SX mode, you set target time for inspiration Tti as the target value. For this target time, you specify a tolerance zone (target zone) using the value **delta Tti**. Example: if you set 1.4 s for Tti and 0.3 for delta Tti, the target zone is between 1.1 and 1.7 s. If the patient's inspiration time is outside the target zone for several respiratory phases, VENTImotion/VENTIlogic leads the patient's respiratory rhythm back into the target zone (change: 100 ms/breath).

5.22.1 Target value for insp. (Tti)

The **Tti** is the target time for inspiration.

5.22.1.1 Delta Tti

A tolerance zone (target zone) can be specified for the target value for inspiration (Tti) using the value **delta Tti**.
The target zone can be determined by the target value for inspiration (Tti) and **delta Tti** as follows.

Target zone = Tti +- delta Tti

Example: if you set 1.4 s for Tti and 0.3 for delta Tti, the target zone is between 1.1 and 1.7 s.

The lower pressure limit of the target zone is limited to 0.5 s and the upper limit value of the target zone to 3.3 s. These values cannot be exceeded or undershot.

5.22.2 Target value for exhal. (Tte)

The **Tte** is the target time for exhalation.

5.23 Therapy mode

The devices can be operated in various therapy modes:

Therapy mode	Description
APAP	Therapy pressure is controlled within fixed limit values as a function of event
CPAP	Therapy at a constant therapy pressure for inspiration and exhalation
S	Assisted spontaneous respiration/assisted ventilation with background frequency
ST	Assisted-controlled ventilation
T	Controlled ventilation
SX	Assisted spontaneous respiration with a target value specified for inspiration for the patient's spontaneous respiratory rhythm
SXX	Assisted spontaneous respiration with a target value specified for inspiration and exhalation for the patient's spontaneous respiratory rhythm
TA	Adaptive, time-controlled ventilation mode, individually adapted to suit the patient
ACMV	Assisted spontaneous breathing on the autoTriLevel principle (automatic adaptation of the three pressure levels IPAP, EPAP and EEPAP to the patient's current requirement) and the process of anticyclic modulated ventilation (ACMV)
aPCV	Assisted pressure-controlled ventilation
Autotitration	Therapy pressure is controlled within fixed limit values as a function of event. The therapy device determines the recommended titration pressure in accordance with a fixed rule and sets this in the therapy device after a defined period
Pressure profile	Therapy pressure is controlled in accordance with a defined pressure pattern

5.24 Timed breaths

In the case of apnoeas, the device automatically ventilates either at a frequency determined specifically for the patient or at a fixed frequency. EPAP and IPAP are recalculated for each of these (mandatory) time-controlled breaths ("timed breaths").

5.25 Trigger sensitivity

In assisted modes S and ST, **trigger sensitivity** should be adapted separately for inspiration and exhalation to suit individual requirements. It can be set in stages. Stage 1 corresponds to low sensitivity, with sensitivity rising as stages increase.
Adjusting the trigger determines the sensitivity with which *the device* is to react to a change in flow signal.

5.26 Volume compensation

Activating volume compensation ensures that the patient is supplied with a minimum volume.
To this end, the patient's tidal volume determined is compared to a set minimum value **VT**. If the set volume is undershot for a certain number of recent breaths (the so-called compensation condition), pressure on inspiration is increased.
After a few breaths, the compensation condition is examined. If tidal volume is far below the set limit, pressure is increased further.
If, following the increase in pressure, volume is above the set limit, the pressure is reduced. The compensation condition is examined regularly.

For more information, see the instructions for the device.

5.26.1 Volume compensation VT

Minimum volume is specified using the value **VT**.

5.26.2 Volume compensation delta P

Use **delta P** to specify the maximum pressure limit up to which pressure can be increased with volume compensation.

6 Alarms

6.1 Patient alarms

Patient alarms (low-priority alarms):

Patient alarms		
Alarms	**Cause of fault**	**Remedy**
Display "VT low" (minimum respiratory volume set by the doctor)	Nasal cannula leaking	Adjust headgear/headband so that the mask fits tightly, possibly replace
	Changed lung impedance of patient	Correct settings
	Implausible settings	Correct settings
	Filter soiled	Clean/change filter
	Nasal cannula defective	Replace mask
Display "IPAPmin" (minimum therapy pressure set by the doctor)	Nasal cannula leaking	Adjust headgear/headband so that the mask fits tightly, possibly replace
	Filter soiled	Clean/change filter
	Nasal cannula defective	Replace mask
	Implausible settings	Correct settings

6.2   System alarms

System alarms (medium-priority alarms):

<table>
<tr><th colspan="3">System alarms</th></tr>
<tr><th>Alarms</th><th>Cause of fault</th><th>Remedy</th></tr>
<tr><td rowspan="2">Display "Disconnection" (Disc.)</td><td>Tube system is not connected to the device properly or is not connected at all</td><td>Check the tube connection on the device</td></tr>
<tr><td>Device being operated with mask open (not put on)</td><td>Put on the mask or switch off the device</td></tr>
<tr><td rowspan="2">Display for pressure measuring hose disconnection (PMH disc.)</td><td>Pressure measuring hose not fitted correctly or forgotten during assembly</td><td>Check assembly of the pressure measuring hose</td></tr>
<tr><td>Water droplet in pressure measuring hose</td><td>Dry the pressure measuring hose. Follow the operating instructions for the device when doing this.</td></tr>
</table>

7   Function check

1. Connect a therapy device for the remote adjustment .
2. Ensure that the device is switched off.
3. Start WEINMANNadjust.
4. Import the parameters of the connected therapy device using WEINMANNadjust.

WEINMANNadjust is working correctly if:

·   the connection with the connected therapy device is displayed in the Status bar
·   the connected therapy device is displayed in the Parameters
·   the bottom left-hand side button is red when the therapy device is switched off
·   the actual pressure under **Actual Values** is 0 hPa

8 Technical data

Specification	Product
Product class in compliance with 93/42/EEC	IIa

9 Troubleshooting

Fault	Cause of fault	Remedy
WEINMANNsupport is unable to establish a connection with the therapy device	Therapy device is not connected to a power supply.	Connect the therapy device to the mains supply.
	Data is being imported via the front interface of SOMNOsmart or the interface of SOMNOsmart 2 / SOMNOset / SOMNOsoft+ and the therapy device is switched on.	Turn off the therapy device.
	The serial interface settings are incorrect.	In WEINMANNadjust: Use the arrow next to the ⬅ button to select the correct interface or **Autodetection**.
		In WEINMANNsupport: Select **Extras --> Options --> Communication** and set the active interface to **Select Automatically**.
	There is no connection between the therapy device and the PC.	Check the connections of the PC connection cable at the PC and at the converter box and the connection of the connection cable at the therapy device and at the converter box.
	Other applications are using the interface.	Close the applications.
A communication error is reported despite correct connection with the therapy device.	The connection between the therapy device and PC was interrupted during the data transfer. The therapy device is still sending data after the	Wait until the data transfer is finished and then start it again.
		End the data transfer by

Fault	Cause of fault	Remedy
	last data transfer command.	disconnecting the power plug at the therapy device and then start it again.
Following a data transfer, SOMNOsmart switches itself off within 10 seconds during the following therapy.	The SOMNOsmart / PC connection was interrupted during the data transfer. SOMNOsmart was not reset to therapy mode.	Repeat the data transfer.
		Disconnect SOMNOsmart by briefly disconnecting the plug from the power supply.
SOMNOsmart 2 / SOMNOset / SOMNOsoft+ can no longer be switched on after a data transfer .	The connection between SOMNOsmart 2 / SOMNOset / SOMNOsoft+ and the PC was interrupted during the data transfer. SOMNOsmart 2 / SOMNOset / SOMNOsoft+ were not reset to therapy mode.	Repeat the data transfer.
		Disconnect SOMNOsmart 2 / SOMNOset / SOMNOsoft+ by briefly disconnecting the plug from the power supply.
The parameter setting cannot be sent as SD card parameter settings using the button.	The e-mail program does not open.	Check whether your e-mail program is set as the default e-mail client in Windows® and supports MAPI.
	WEINMANNadjust reports a transmission error after you have clicked **Send**.	Check your network and firewall settings.
Unable to save the parameter settings on the SD card.	The SD card is write-protected.	Remove the write protection by pushing up the lock switch on the SD card.
	The SD card contains more than 400 MB data.	Ensure that there is no more than 400 MB of data stored on the SD card. If necessary: Delete the files from the SD card (using Windows® Explorer®).
	Less than 10 MB on the SD card.	Ensure that there at least 10 MB unused memory is available on the SD card. If necessary: Delete the files from the SD card (using Windows® Explorer®).
Unable to save the parameter settings.	Directory is write-protected.	Remove the directory's write protection.
		Select another storage location.
WEINMANNservice does not start	WEINMANNadjust is connected to an SD card. WEINMANNservice	Disconnect the connection with the SD card in

Fault	Cause of fault	Remedy
	does not work if the device is connected to an SD card and therefore cannot be started.	WEINMANNadjust.
		Close WEINMANNadjust.

10   WEINMANNservice

WEINMANNservice is a tool in which you can perform basic device settings such as setting device time.

Double-clicking the status bar creates or disconnects the connection to the therapy device.

You cannot use WEINMANNservice if the device is connected to an SD card.

If the connected therapy device is in use, the WEINMANNservice functions are not available. Switch off the therapy device to use the WEINMANNservice functions.

The following sections will familiarize you with the individual topics within WEINMANNservice.

10.1   Date/time

On the **Date/Time** tab you can set device time:
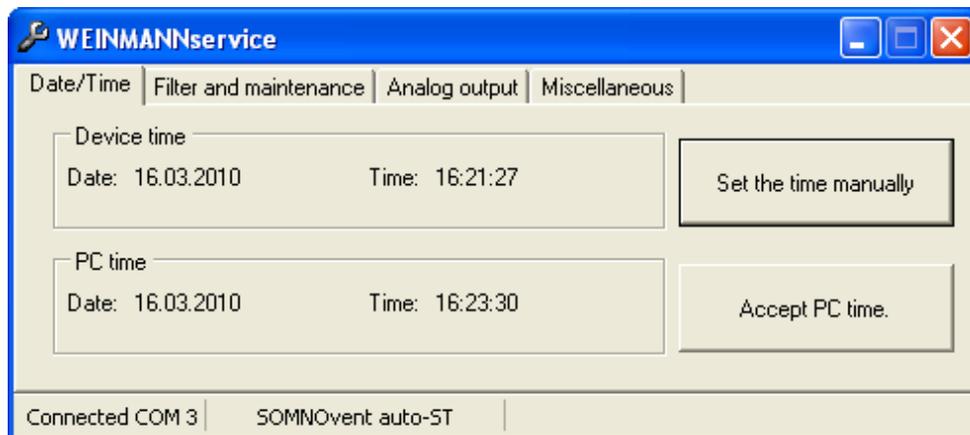
You have two options for setting the time.

a) To set the time manually, press the **Set the time manually** button:
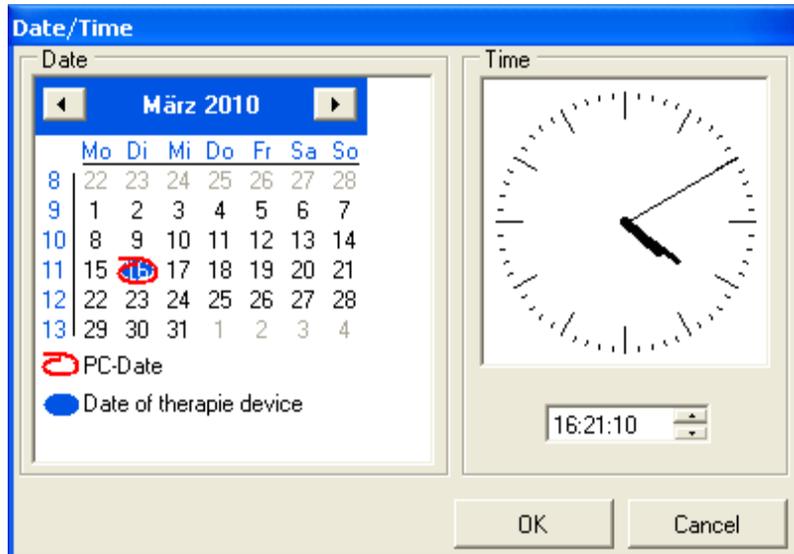
1. Click on the year to select the year.
2. Use the arrow keys to select the month.
3. Click on the desired day.
4. Set the time on the right using the arrow keys or by entering it directly.

b) To take the time from the PC, press the **Accept PC time** button.

10.2   Filter and maintenance

This tab indicates when the next filter change/next service is required.
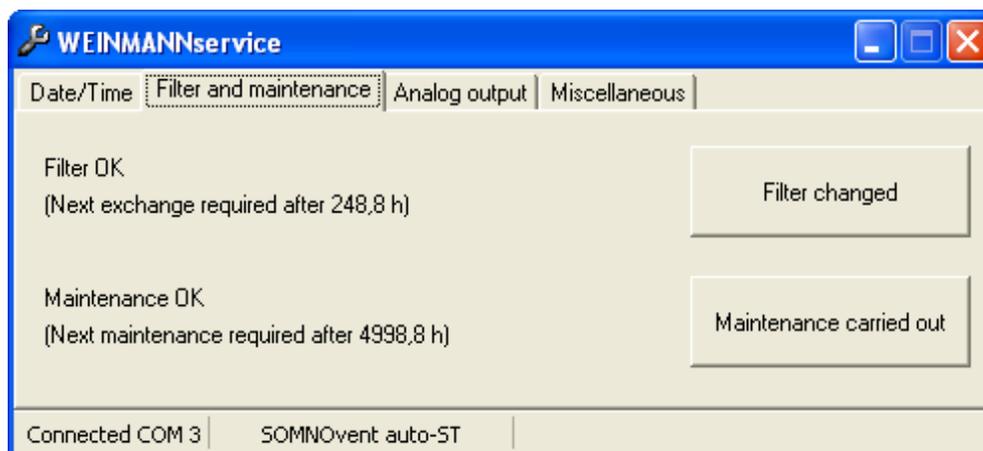
You can reset the time to zero using the buttons **Filter changed** and **Maintenance carried out**.

10.3   Analog output

Devices supported:

· SOMNOsmart 2
· SOMNOset
· SOMNOsoft +
· SOMNOsoft 2
· SOMNOsoft 2 e
· SOMNObalance (e)
· SOMNOvent CR
· SOMNOvent auto-S
· SOMNOvent auto-ST
· WEINMANNbalance JP
· WEINMANNsoft 2 JP

If you connect one of the above-mentioned devices to a PSG system via the analog output, you have the option of configuring the signal channels of the analog output in the **Analog output** tab. The following signals can be configured:

	Pressure	Total flow rate	Respiratory flow rate	Leakage	OPS	OPP	rAMV	Status
SOMNOsmart 2	X	X		X from FW 3.0	X			
SOMNOset	X	X		X	X			
SOMNOsoft +	X	X up to FW 4.0	X from FW5.0	X				
SOMNOsoft 2	X	X		X		X	X	
SOMNOsoft 2 e	X	X		X		X	X	
SOMNOvent CR	X	X up to FW 4.0	X from FW5.0	X			X from FW5.0	X from FW5.0
SOMNObalance	X	X		X		X	X	
SOMNObalance e	X	X		X		X	X	
SOMNOvent auto-S	X		X from FW2.0	X			X	X
SOMNOvent auto-ST	X		X	X			X	X
WEINMANNbalance JP	X	X		X		X	X	
WEINMANNsoft 2 JP	X	X		X		X	X	
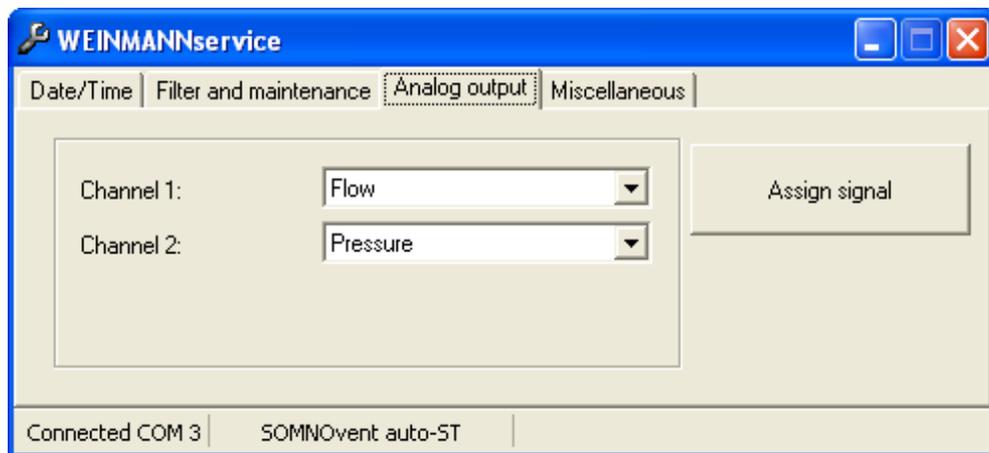
To do this, click on the list fields in the signal selection field for **Analog output** and select one of the signals for Channel 1 or Channel 2. Then click on the command button **Assign signal** to set the configuration in the therapy device.

10.4   Miscellaneous

The **Miscellaneous** tab displays data about the therapy device and its settings.

Sleep therapy devices
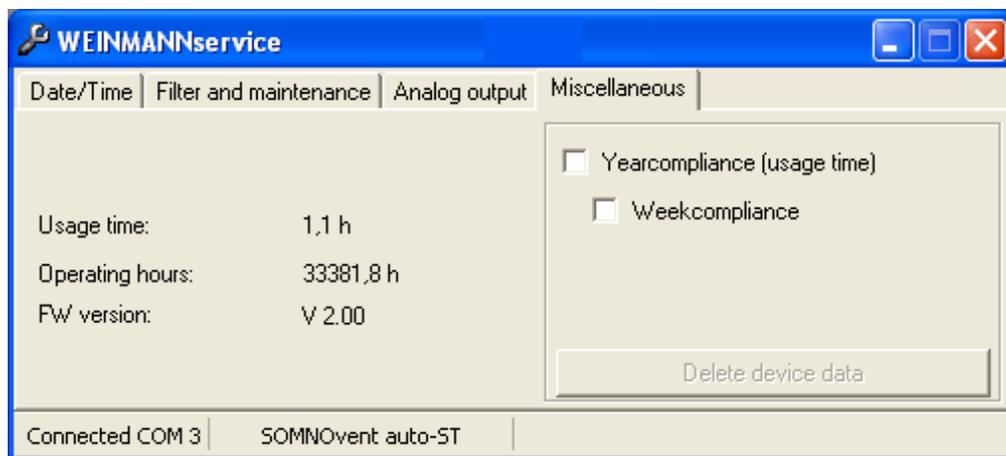
With the sleep therapy devices, the tab displays usage time, operating hours and the firmware version of your therapy device. You can delete the following device data using the **'Delete device data'** button:

· **Yearcompliance (usage time)**: If you click on this checkbox, weekcompliance is automatically selected at the same time.
· **Weekcompliance**: If you click on this checkbox, you can only delete weekcompliance. This applies to the following therapy devices:

· SOMNObalance (e)
· SOMNOset
· SOMNOsmart
· SOMNOsmart 2

· SOMNOsoft +
· SOMNOsoft 2
· SOMNOsoft 2 e
· SOMNOvent auto-S
· SOMNOvent auto-ST
· SOMNOvent CR
· WEINMANNbalance JP
· WEINMANNsoft 2 JP

Ventilation devices
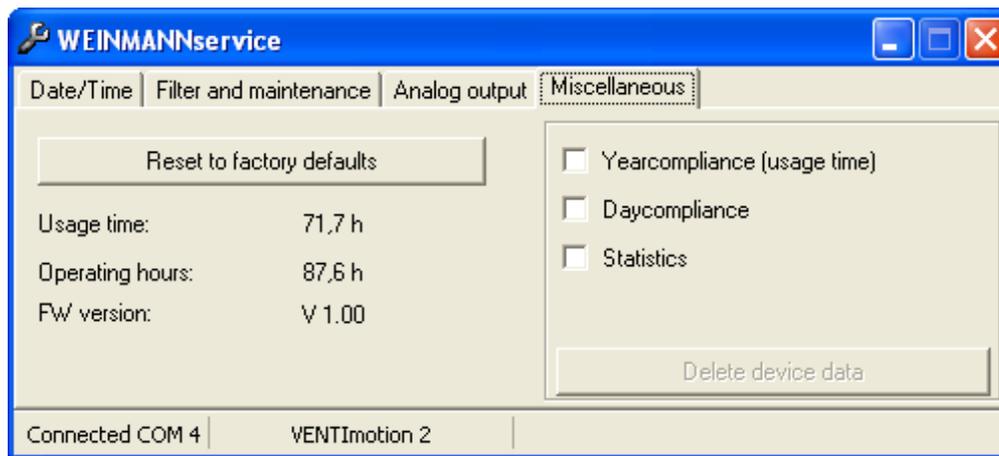
With the following ventilation devices, the tab displays usage time, operating hours and the firmware version of your therapy device:

· BiLevel ST 22
· VENTIlogic
· VENTImotion
· VENTImotion 2

You can reset the therapy device to its factory defaults using the **Reset to factory defaults** button.

You can delete the following device data using the **Delete device data** button:

· Yearcompliance (usage time)
· Daycompliance
· Statistics

Device data can only be deleted in their entirety. If you click on one checkbox, the other checkboxes are automatically selected at the same time.

11   Contact data

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