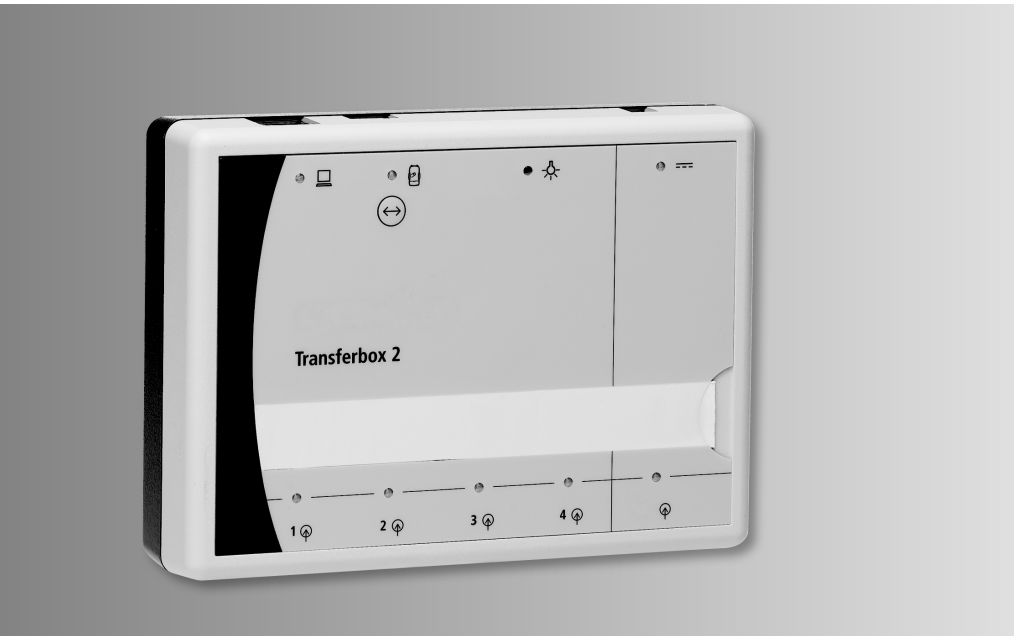
EN Instructions for Use



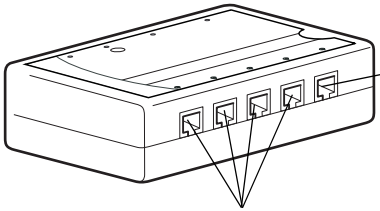
Transferbox 2

LÖWENSTEIN
medical

Contents

Overview

Transferbox 2

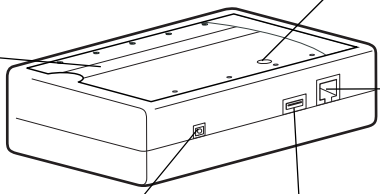


1 Connection for Löwenstein Medical therapy/home ventilation device with LED

2 Connection for external device with LED

4 Connection key

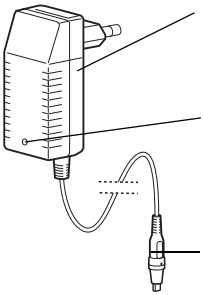
3 Clear pocket for removable card



5 Connection for PC with LED

7 Connection for power supply unit with LED

6 Connection for diagnosis device with LED



8 Power supply unit

9 Power supply unit LED

10 Plug for power supply unit

Key

1 Connection for Löwenstein Medical therapy/home ventilation device with LED

You can connect a Löwenstein Medical therapy or home ventilation device to this connection.

2 Connection for external device with LED

You can connect external devices (diagnosis or sleep therapy devices) to these connections.

3 Clear pocket for removable card

Push the removable card indicating connection assignments into this clear pocket.

4 Connection key

If you press the Connection key, the Transferbox 2 connects wirelessly to the diagnosis device.

5 Connection for PC with LED

This is the connection for connecting the Transferbox 2 to a PC with the aid of an Ethernet cable.

6 Connection for diagnosis device with LED

This is the connection for connecting the Transferbox 2 to the diagnosis device with the aid of a USB cable.

7 Connection for power supply unit with LED

This is where you connect the power supply unit to the Transferbox 2.

8 Power supply unit

The power supply unit supplies the Transferbox 2 with power.

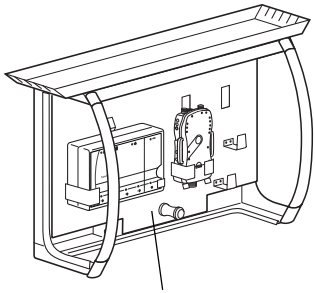
9 Power supply unit LED

This LED is always on when the power supply unit is powered.

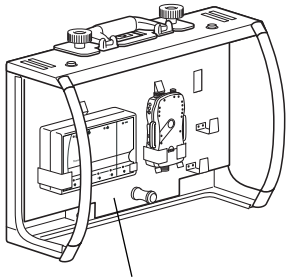
10 Plug for power supply unit

This is the plug for connecting the power supply unit to the Transferbox 2.

Accessories



1 SOMNO*butler* 2 stationary



2 SOMNO*butler* 2 mobile

Key

1 SOMNO*butler* 2 stationary

You can use SOMNO*butler* 2 stationary to attach the Transferbox 2, for example to the wall above the patient's bed.

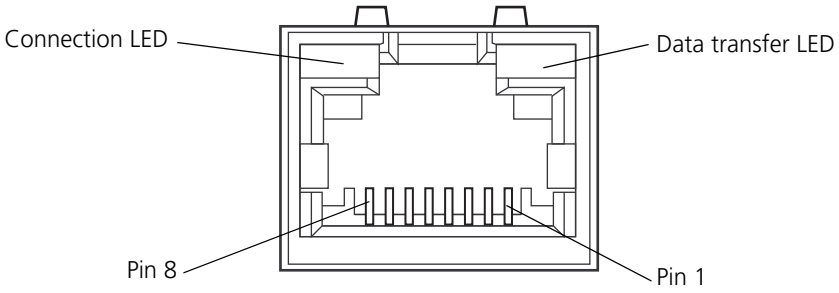
2 SOMNO*butler* 2 mobile

You can use the SOMNO*butler* 2 mobile to bring the Transferbox 2 to a patient, for example.

Meaning of the LEDs

LED	Color	Meaning
Power supply unit LED	Green	– Permanently on when there is power at the power supply unit
LED on power supply connection	Green	– Permanently on when there is power at the Transferbox 2 – Switched on during a recording
LED on PC connection	Green	– Permanently on when there is an Ethernet connection to the SOMNO*lab* PC software – Switched off during a recording
LED on diagnosis device connection	Blue	– Permanently on when there is a wireless or USB connection between the Transferbox 2 and the diagnosis device – Switched off during a recording – Flashes rapidly during configuration
LEDs on the external device connections and on the Löwenstein Medical therapy/home ventilation device connection	Green	– Flash following a double-click on the diagnosis device during a recording when a channel is configured but not connected – Permanently on in the event of a severe self-test fault (repair required)

Ethernet connector RJ45

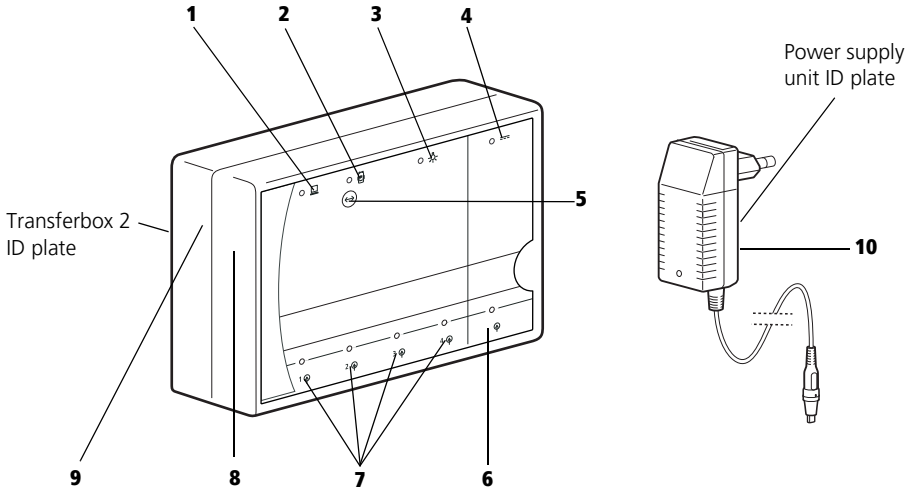


LEDs

Connection LED		Data transfer LED	
Color	**Meaning**	**Color**	**Meaning**
Off	No connection	Off	No data traffic
Yellow	10 Mbps	Yellow	Half duplex
Green	100 Mbps	Green	Full duplex

Markings on the device

Transferbox 2



	Symbols	Meaning
Transferbox 2 ID plate		
		Year of manufacture
		Follow information in the instructions for use
		Do not dispose of the device in domestic waste
		HF transmitter
		Power supply: direct voltage
	SN	Serial number
	CE	CE symbol (confirms that the product conforms to the applicable European directives)

	Symbols	Meaning
Front film for the Transferbox 2		
1		Connection to the PC via Ethernet
2		Connection to the diagnosis device (wireless or via USB)
3		Light sensor
4		Power supply: direct voltage
5		Connection key for wireless connection
6	WM	Connection for Löwenstein Medical therapy/home ventilation device
7		Input
Transferbox 2		
8	**SN**	Serial number
9		Follow instructions for use
Power supply unit ID plate		
		Follow information in the instructions for use
		Device of protection class II
		Input
		Output
		Only for use indoors
	CE 0197	CE symbol (confirms that the product conforms to the applicable European directives)
Power supply unit		
10		Do not dispose of the device in domestic waste

Markings on the packaging

Symbols	Meaning
CE	CE symbol (confirms that the product conforms to the applicable European directives)
	Permitted temperature for storage: -20 °C to +70 °C
	Permitted humidity for storage: max. 95 % relative humidity
	Protect device from wet
	Device is fragile
SN	Serial number

Safety instructions

Safety instructions indicate information relevant to safety.

You will find safety instructions within instructions before a step which includes a risk to people or objects.

Safety instructions consist of

- the warning symbol (pictogram),
- a word to indicate the level of hazard
- information about the hazard and
- instructions on how to avoid the hazard.

There are three levels of warning instruction depending on the degree of hazard.

DANGER!
Indicates an unusually large hazard. If you do not follow this instruction, severe, irreversible injuries or death will result.

Warning!
Indicates an unusually large hazard. If you do not follow this instruction, severe, irreversible injuries or fatal injuries may result.

Caution!
Indicates a hazard. If you do not follow this instruction, slight or moderate injuries may result.

Note!
Indicates material hazards. If you do not follow this instruction, material damage may result.

1. Description of device

The SOMNO*lab* 2 polygraphy device is referred to below as a "diagnosis device".

1.1 Intended use

The Transferbox 2 uses a digital interface to record the data of Löwenstein Medical therapy and home ventilation devices as well as using analog inputs to record measured data from medically-licensed external diagnosis and sleep therapy devices ("third-party devices") which have an analog output of maximum -2 V to +5 V. The Transferbox 2 also records room brightness and passes all data wirelessly or via USB cable to the SOMNO*lab* 2 polygraphy device or via Ethernet to the PC. Power is supplied by a power supply unit.

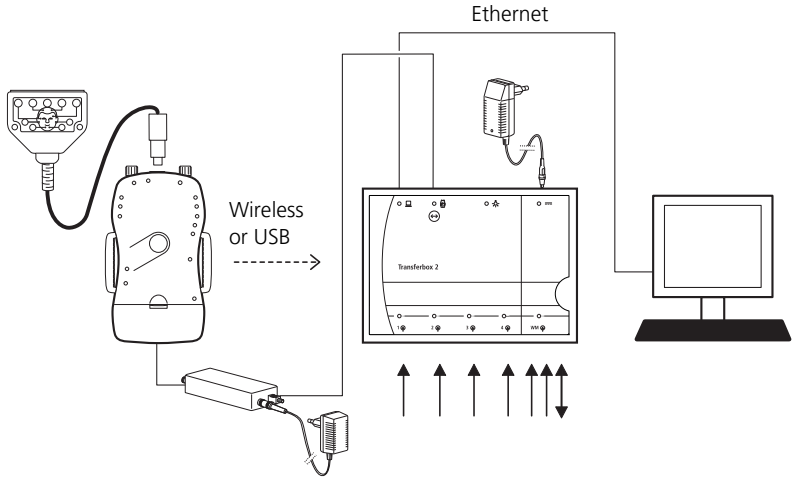
There is no monitoring of emergency or intensive care patients.

The Transferbox 2 is an accessory for the SOMNO*lab* 2 polygraphy device. You should also follow the instructions for use for SOMNO*lab* 2.

1.2 Description of function

The Transferbox 2 records the data from diagnosis devices and therapy/home ventilation devices and passes these on to the SOMNO*lab* software for evaluation purposes. The Transferbox 2 can be used in either a fixed or a mobile Löwenstein Medical polysomnography system.

Transferbox 2 in the fixed polysomnography system (online)



Diagnosis device

USB/PC galvanic isolation module

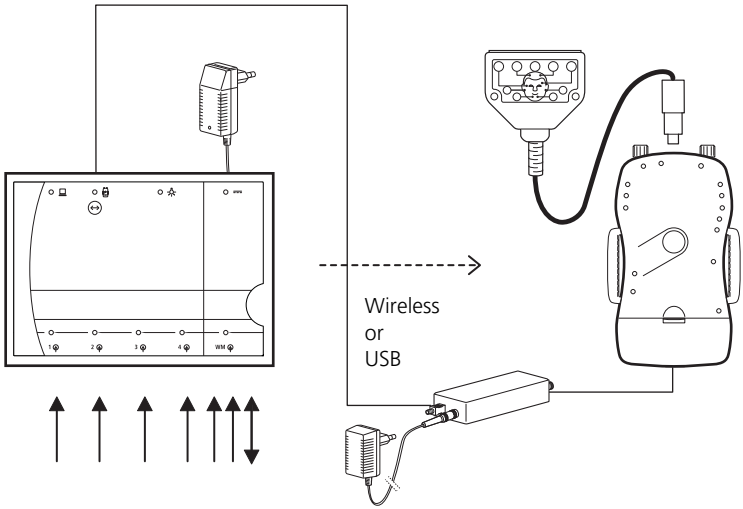
Transferbox 2:

- 4 analog connections for external devices
- 1 connection for Löwenstein Medical therapy/home ventilation devices

PC with SOMNO*lab* PC-software

In a fixed Löwenstein Medical polysomnography system, the Transferbox 2 records the measured data of the diagnosis device wirelessly or via USB and passes these to the SOMNO*lab* PC software. The Transferbox 2 also records the therapy data from a Löwenstein Medical therapy/home ventilation device as well as up to four external devices (diagnosis or sleep therapy devices) and likewise passes these therapy data to the SOMNO*lab* PC software. The Transferbox 2 also records room brightness and passes this on to the SOMNO*lab* PC software for evaluation purposes.

Transferbox 2 in the mobile polysomnography system (offline)



Transferbox 2:

- 4 analog connections for external devices
- 1 connection for Löwenstein Medical therapy/home ventilation devices

USB/PC galvanic isolation module

Diagnosis device

In a mobile polysomnography system, the Transferbox 2 records the therapy data from a Löwenstein Medical therapy/home ventilation device and up to four external devices (diagnosis or sleep therapy devices). In addition, the Transferbox 2 records room brightness. Transferbox 2 passes the therapy data and room brightness on to the diagnosis device wirelessly or via USB. The data supplied by the Transferbox 2 are stored in addition to the measured data of the diagnosis device on the memory card of the diagnosis device and, following a recording, can be read out with the aid of the SOMNO*lab* PC software.

2. Safety instructions

Read these instructions for use through carefully. They are a constituent part of the device and must be available at all times. Use the device only for the intended use described (see "1.1 Intended use" on page 11).

For your own safety and that of your patients, and in accordance with the requirements of directive 93/42/EEC, observe the following instructions.

Operating the device

Warning!

- Do not use the device if it is damaged. Cables, plugs and housing must be in perfect condition.
- Do not touch the patient if you are in contact with the plug of the power supply unit, the sockets of the Transferbox 2 or electrically conductive parts of other devices which are not application parts.
- The device must not be modified. If you modify the device, you are considered a system configurer, and are therefore responsible for compliance with the applicable version of standard EN 60601-1-1.

Caution!

- Before you work with the Transferbox 2 and the power supply unit, you must have understood how to handle them.
- Ensure that no liquids penetrate the device. These could damage the electronics.
- Follow the section entitled "5. Hygiene treatment" on page 26 to prevent an infection or bacterial contamination.
- Do not bring the Transferbox 2 or its accessories into contact with injured, damaged or infected skin.
- Do not place the PC on which the data are stored and visualized, its peripherals (e.g. printer) or non-medical equipment in the immediate vicinity of the patient (within 1.5 m).
- Do not operate the Transferbox 2 in direct light, as otherwise light conditions will not be recorded correctly.
- The minimum distance between the Transferbox 2 and an IR radiator must be 2 m.

- Activate auto-bonding only if there are no other Transferbox 2 devices devices within a radius of 20 m of the patient during the recording, otherwise the diagnosis device will connect to the wrong Transferbox 2.
- Additional equipment connected to the analog and digital ports of the device must have evidence of conformity with the corresponding EN specifications (e.g. EN 60950 for data processing devices and EN 60601-1-1 for electrical medical devices). Furthermore, all configurations must meet the version of system standard EN 60601-1-1 at the time of sale. Anyone connecting additional devices to the signal input or output part is considered a system configurer and is thus responsible for compliance with the applicable version of system standard EN 60601-1-1. In the event of questions, contact your local specialist dealer or the manufacturer.
- The free analog inputs are solely for connecting external devices with a medical license. The analog output voltage of the external devices must meet the specifications stipulated by the manufacturer. Connection to a telephone system is not permitted.
- Other devices may interfere with Transferbox 2, even if these other devices comply with the CISPR emissions requirements applicable to them.
- Portable and mobile HF communication equipment may affect electrical medical devices. Take appropriate precautionary measures.
- This device requires special precautionary measures as regards electromagnetic compatibility (EMC). Only install it and put it into operation in accordance with the EMC instructions in the accompanying documentation (see "10.3 Safety distances" on page 36).
- Do not use Transferbox 2 immediately next to other devices, and do not stack Transferbox 2 with other devices during operation.
- If you use accessories or spare parts not quoted in these instructions for use or approved by the manufacturer, the Transferbox 2 may have increase emissions or reduced resistance to interference.

Note

- Use the Transferbox 2 only indoors.
- Do not expose the Transferbox 2 to direct sunlight.
- Do not use the Transferbox 2 in the vicinity of heat sources. Observe the storage and operating temperatures (see "10.1 Specifications" on page 34).
- You should also follow the safety information in the instructions for use for the SOMNO*lab* 2 diagnosis device and the SOMNO*butler* 2 storage system.

- The system generates information signals. These are for checking the presence of signals for recording and to check the function of the device. Alarms are not generated.
- If you have questions about faults, see the section entitled "7. Troubleshooting" on page 30.
- Modifications may not be made to the device.

Replacement parts/repair

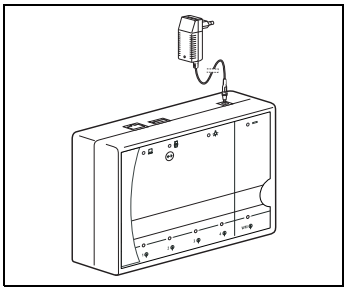
Caution!

- If third-party items are used, functional failures may occur and fitness for use may be restricted. Biocompatibility requirements may also not be met. Please note that in such cases, any claim under warranty and liability will be voided if neither the accessories nor genuine replacement parts recommended in the instructions for use are used.
- Have servicing and repairs carried out only by the manufacturer or by specialist staff expressly authorized by the manufacturer to do so.

3. Commissioning

3.1 Connect diagnosis device

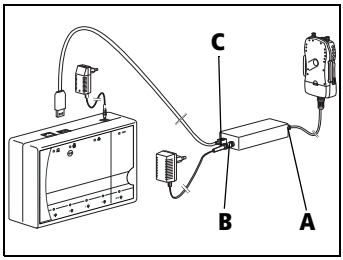
Wireless connection



1. Connect the plug of the power supply unit to the power supply connection of the Transferbox 2.

   The diagnosis device or the Transferbox 2 now create a wireless connection (see "4.2 Make a wireless connection" on page 21).

Connection via USB cable



1. Connect the plug of the power supply unit to the power supply connection of the Transferbox 2.
2. Connect connection C of the USB/PC galvanic isolation module WM 95091 to the diagnosis device connection of the Transferbox 2 using a USB cable.
3. Use USB charging cable WM 95116 to connect the diagnosis device to connection A of the USB/PC galvanic isolation module.
4. If the battery of the diagnosis device is to be charged, also connect power supply unit WM 95090 to connection B of the USB/PC galvanic isolation module.

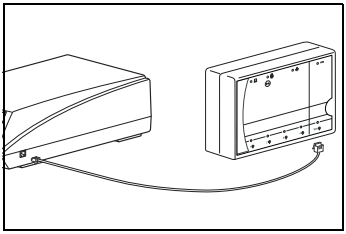
3.2 Connect PC

1. Connect an Ethernet cable to the PC connection of the Transferbox 2.
2. Connect the Ethernet cable to the network or to the network connection on the PC.

The Transferbox 2 is configured so that it dynamically takes an IP address from a DHCP server and can thus be integrated in any network. If no DHCP server is available in a network, the Transferbox 2 generates a random IP in address space 169.254.x.x. In this

instance, the PC must also have an address in this address space in order to be able to access the Transferbox 2.

3.3 Connect Löwenstein Medical therapy device



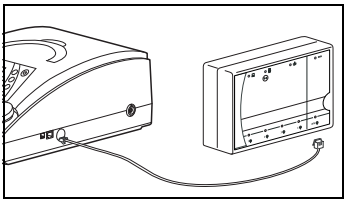
1. Connect the Löwenstein Medical therapy device to the WM-marked connection of the Transferbox 2 using connecting cable WM 93313.

The connecting cable performs the following functions:

- it transmits data from the therapy device to the Transferbox 2 simultaneously via two analog channels (e.g. therapy pressure and flow).
- the therapy device can be controlled with the aid of WEINMANN*adjust*.
- data can be read out of the therapy device with the aid of WEINMANN*support*.

To make settings to the therapy device, follow the setting instructions for the therapy device.

3.4 Connect Löwenstein Medical home ventilation device

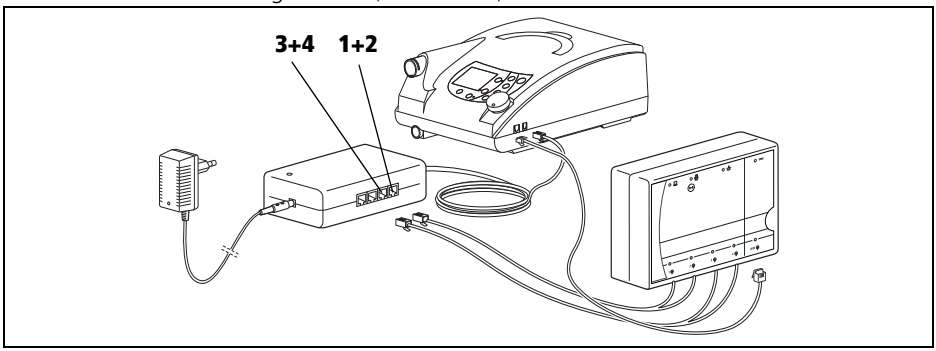


1. Connect the Löwenstein Medical home ventilation device to the WM-marked connection of the Transferbox 2 using connecting cable WM 93313.

The connecting cable performs the following functions:

- the home ventilation device can be controlled with the aid of WEINMANN*adjust*.
- data can be read out of the home ventilation device with the aid of WEINMANN*support*.

Löwenstein Medical home ventilation devices supply **no** analog data. If you want to feed the measured data from the home ventilation devices into the Transferbox 2 online, you must also connect Analogbox D/A (WM 27560) in between:



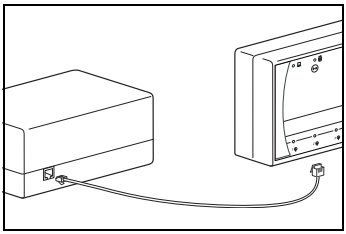
2. Connect the Analogbox D/A to the Löwenstein Medical home ventilation device.
3. Connect output **1 + 2** of the Analogbox D/A to inputs **1** and **2** of the Transferbox 2 using PSG connecting cable WM 24037.
4. Connect output **3 + 4** of the Analogbox D/A to inputs **3** and **4** of the Transferbox 2 using PSG connecting cable WM 24037.

To make settings to the home ventilation device, follow the home ventilation device instructions for use for hospital staff.

3.5 Connect external device

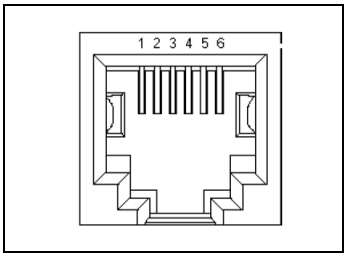
Note!
Material damage from excessive voltages!
The maximum permitted voltage at the inputs of the free channels of the Transferbox 2 is -2 V to +5 V. Higher voltages will damage or destroy the Transferbox 2.

- Use only medically-licensed external devices.
- Use only external devices whose analog output voltage meets the specifications stipulated by the manufacturer.
- Check that external devices are working correctly before connecting them.
- Perform suitable examinations and tests to ensure that the Transferbox 2 is used safely.
- Do not connect the Transferbox 2 to a telephone system.



1. Connect the external device (diagnosis or sleep therapy device) to an external device connection on the Transferbox 2 using a registered jack connector (RJ11 or RJ12).

The external device connections on the Transferbox 2 are numbered from 1 to 4 and can be assigned accordingly in the SOMNO*lab* PC software. The maximum signal level which can be evaluated is -2 V to +5 V.



A plan view of the connections of the Transferbox 2 shows the following pin assignment (from left to right):

PIN 1 = free

PIN 2 = free

PIN 3 = minus pin of signal input

PIN 4 = plus pin of signal input

PIN 5 = free

PIN 6 = free

4. Operation

4.1 Switch on device

The Transferbox 2 goes to standby as soon as the power supply unit is connected. It switches on automatically

- when a PC is connected to the Transferbox 2 via Ethernet;
- when the diagnosis device is wirelessly connected to the Transferbox 2;
- when the diagnosis device is connected to the Transferbox 2 via USB cable.

Alternatively, you can also press the Connection key on the Transferbox 2 to make a connection.

4.2 Make a wireless connection

There are two ways of making a wireless connection between the Transferbox 2 and the diagnosis device.

1. Switch on the diagnosis device.
2. Within 5 seconds, press the Connection key on the Transferbox 2.

   The blue LED (connection for diagnosis device) comes on briefly and the Transferbox 2 connects to the diagnosis device which has just been switched on. Once the connection has been made successfully, all the LEDs on the diagnosis device and the Transferbox 2 light up briefly one after another. The diagnosis device and the Transferbox 2 are now permanently connected.

Alternatively

1. Switch on the diagnosis device.

   The diagnosis device automatically connects to the Transferbox 2 within half a minute of switching on. Once the connection has been made successfully, all the LEDs on the diagnosis device and the Transferbox 2 light up briefly one after another. The diagnosis device and the Transferbox 2 are now permanently connected. The diagnosis device always connects to the Transferbox 2 to which it was last connected.

4.3 Connect Transferbox 2 to another diagnosis device

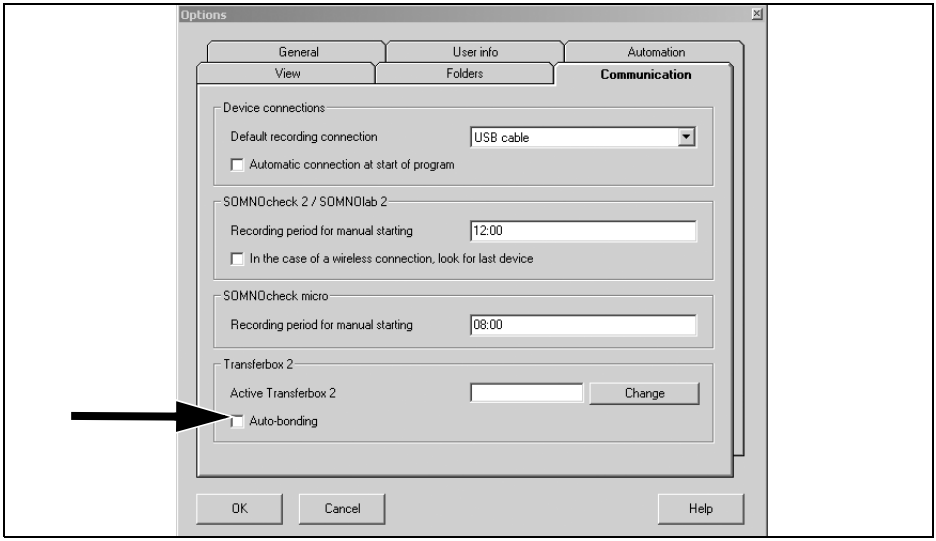
1. Switch on the diagnosis device and simultaneously press the Connection key on the Transferbox 2 (2 seconds).

   The Transferbox 2 terminates the connection with the previous diagnosis device and connects to the other diagnosis device.

4.4 Auto-bonding between Transferbox 2 and diagnosis device

After being switched on, the diagnosis device always automatically connects to the Transferbox 2 to which it was last connected. In a mobile Löwenstein Medical polysomnography system, you can configure the diagnosis device so that it may also connect to a different Transferbox 2 during the recording. To this end, you have to activate auto-bonding in the SOMNO*lab* PC software. Activate auto-bonding only if there are no other Transferbox 2 devices within a radius of 20 m of the patient during the recording, otherwise the diagnosis device will connect to the wrong Transferbox 2. Proceed as follows to activate auto-bonding.

1. In the SOMNO*lab* PC software, select the submenu **Options** from the **Extras** menu.



2. On the **Communication** tab, activate the item **Auto-bonding**.

If you activate auto-bonding, the diagnosis device attempts to connect to the other Transferbox 2:

- if the diagnosis device finds precisely **one** other Transferbox 2, it connects to this one.
- if the diagnosis device finds **several** other Transferbox 2 devices, it connects to none of them. Only the data of the diagnosis device are transferred to the SOMNO*lab* PC software.
- if the diagnosis device finds **no** Transferbox 2, only the data of the diagnosis device are transferred to the SOMNO*lab* PC software.

4.5 Check analog inputs

Proceed as follows to check the analog inputs of the Transferbox 2 with the aid of the diagnosis device.

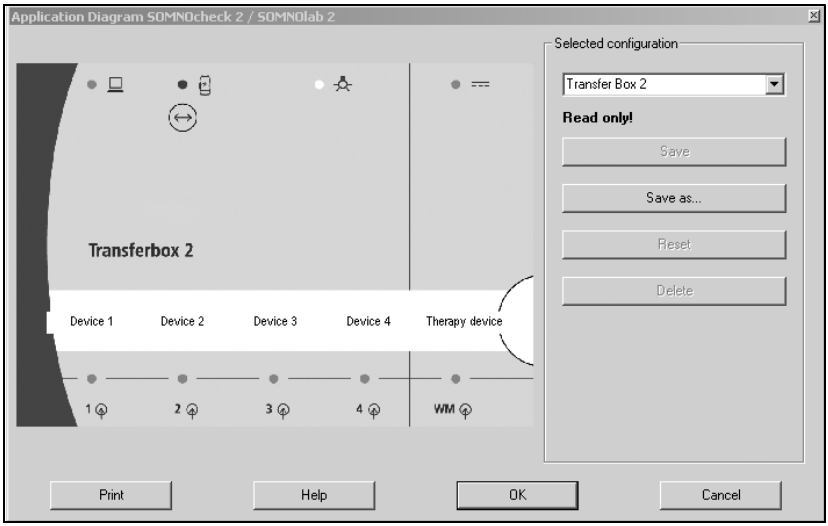
1. During a recording, press the key on the diagnosis device twice in quick succession.

   The LED on an analog input (connections 1 to 4 for external devices or connection for Löwenstein Medical therapy/home ventilation device) of the Transferbox 2 flashes if a channel has been configured in the SOMNO*lab* PC software, but no device is yet connected to the connection in question.

4.6 Print out removable card

In the SOMNO*lab* PC software you can compile and print out a removable card indicating the assignments of the connections on the Transferbox 2.

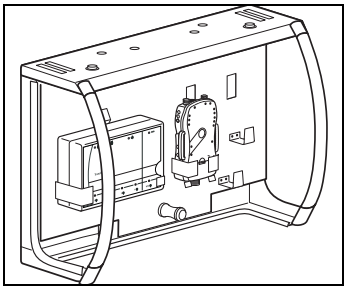
1. In the **Extras** menu, select the submenu **Application Diagram**.
2. Select "Transferbox 2" as configuration.



3. Enter the names of the diagnosis and therapy devices you have connected to the Transferbox 2 at the relevant connections.
4. Save the names using **Save as**.
5. Click on **Print** to print the removable card for the Transferbox 2.

6. Cut out the removable card.
7. Put the removable card in the clear pocket provided for it on the Transferbox 2.

4.7 Transferbox 2 with SOMNO*butler* 2



With the aid of the SOMNO*butler* 2 storage system, you can store or transport the components of a Löwenstein Medical polysomnography system in an organized manner. For information on using the Transferbox 2 and the other components of a Löwenstein Medical polysomnography system with the SOMNO*butler* 2 storage system, please see the instructions for use for the SOMNO*butler* 2, WM 96661.

5. Hygiene treatment

This product may contain disposable items. Disposable items are intended to be used only once. So use these items only once and do **not** reprocess them. Reprocessing disposable items may impair the functionality and safety of the product and lead to unforeseeable reactions as a result of ageing, embrittlement, wear, thermal load, the effects of chemical processes, etc.

5.1 Intervals

Clean the Transferbox 2, the power supply unit and the cables when dirty and when changing patients.

5.2 Cleaning

Note!
Material damage from penetration of liquids!
Liquids may penetrate the device, plug connections or sockets during cleaning and damage the device.

- Disconnect the power supply unit from the socket.
- Disconnect all cables from the device.
- Do not immerse the device in liquids.

1. Wipe down the Transferbox 2, the power supply unit and the cables using a slightly moist cloth and a mild detergent.
2. Allow all the components to dry fully in air.

5.3 Disinfecting

You may also disinfect the Transferbox 2 when required, e.g. in the event of infectious diseases or unusual contamination. Follow the instructions for use for the disinfectant used. Use suitable gloves (e.g. household or disposable gloves) when disinfecting. We recommend terralin® protect as a disinfectant.

Note!
Material damage from penetration of liquids!
Liquids may penetrate the device, plug connections or sockets during disinfecting and damage the device.

- Disconnect the power supply unit from the socket.
- Disconnect all cables from the device.
- Do not immerse the device in liquids.

1. Wipe down the housing of the Transferbox 2 with disinfectant.
2. Allow the housing to dry fully in air.

5.4 Sterilization

Sterilization is not permitted.

5.5 Change of patient

Clean the Transferbox 2 when changing patients, as described in "5.2 Cleaning" on page 26.

6. Function check

If you find faults during the function check, you may not use the Transferbox 2.

Try to eliminate the fault with the help of the information in Section "7. Troubleshooting" on page 30. If this proves impossible, have the Transferbox 2 repaired by the manufacturer or by specialist staff expressly authorized by the manufacturer to do so.

A full function check includes:

- "6.2 Visual inspection" on page 28
- "6.3 Perform function check" on page 29.

6.1 Intervals

Perform a function check before each use.

6.2 Visual inspection

1. Inspect the Transferbox 2 and the power supply unit for damage.

   Housing, cables and plugs must not be damaged.

If you find damage to the devices, have them repaired by the manufacturer or by specialist staff expressly authorized by the manufacturer to do so.

6.3 Perform function check

Check power supply

1. Start up the Transferbox 2 (see "3.1 Connect diagnosis device" on page 17).
2. Check the power supply unit LED on the power supply unit.
3. Check the LED on the power supply connection of the Transferbox 2.

The Transferbox 2 is working correctly if the power supply unit LED on the power supply unit and the LED on the power supply connection of the Transferbox 2 are on.

Check connection to Löwenstein Medical therapy/home ventilation device

1. Connect a Löwenstein Medical therapy or home ventilation device to the connection for a Löwenstein Medical therapy/home ventilation device of the Transferbox 2 (see "3.3 Connect Löwenstein Medical therapy device" on page 18 or "3.4 Connect Löwenstein Medical home ventilation device" on page 18).
2. Start a recording via the SOMNO*lab* PC software (see user manual for SOMNO*lab*).

The Transferbox 2 is working correctly if the SOMNO*lab* PC software is displaying values which correspond to the scale.

Check connection to external device

1. Connect an external device to an external device connection on the Transferbox 2 (see "3.5 Connect external device" on page 19).
2. Start a recording via the SOMNO*lab* PC software (see user manual for SOMNO*lab*).

The Transferbox 2 is working correctly if the SOMNO*lab* PC software is displaying values which correspond to the scale.

Check Transferbox 2 connection to the PC

1. Perform a biosignal test.

The Transferbox 2 is working correctly if a connection can be made to the PC and the signals displayed on screen correspond to the instructions you have given the patient.

Check light sensor

1. Cover the light sensor.

The Transferbox 2 is working correctly if the SOMNO*lab* PC software is displaying Light "off" in the main window. This may take a few seconds.

7. Troubleshooting

If you are unable to remedy faults with the aid of the table, or in the event of unexpected operation or an incident, contact the manufacturer or your authorized specialist dealer. To avoid exacerbating the damage, do not continue operating the device.

Fault	Cause of fault	Remedy
Power supply unit LED on power supply unit not coming on	Faulty or missing cable	– Check the plug connection to the device. – Check the power supply to the device. – Check the function of the socket by connecting another device (e.g. a lamp) to it.
	Fault in the electronics	Have the device checked by the manufacturer or a specialist dealer.
LED on the power supply connection of the Transferbox 2 not coming on	Faulty or missing cable	– Check the plug connection to the device. – Check the power supply to the device. – Check the function of the socket by connecting another device (e.g. a lamp) to it.
	Fault in the electronics	Have the device checked by the manufacturer or a specialist dealer.
LED on connection for Löwenstein Medical therapy/ home ventilation device or on connection for external device is only flashing, although a device is connected	Faulty connection or no connection to Löwenstein Medical therapy/home ventilation device and/or to external device	– Check the plug connection to the device. – Check the power supply to the device. – Check the function of the socket by connecting another device (e.g. a lamp) to it.
	Channel incorrectly configured in the SOMNO*lab* PC software	Check whether a Löwenstein Medical therapy/home ventilation device and/or external device is connected to all configured channels.
	Fault in the electronics	Have the device checked by the manufacturer or a specialist dealer.

LED on connection for Löwenstein Medical therapy/ home ventilation device and/or on the connection for external devices is on - analog values are "0" or implausible	Fault in the electronics	Have the device checked by the manufacturer or a specialist dealer.
LED on connection for PC and/or on the Ethernet connector are not on, even though an Ethernet cable is connected	Faulty connection or no connection to PC	Check the plug connection to the PC.
	Fault in the electronics	Have the device checked by the manufacturer or a specialist dealer.
Light "off" is displayed in the SOMNO*lab* PC software, even though the room is bright	Light sensor covered	Ensure that the light sensor is not covered.
	Fault in the electronics	Have the device checked by the manufacturer or a specialist dealer.
Continuous interference signals on the analog inputs with several devices connected to the Transferbox 2 simultaneously	Different power supply voltage phases	– Determine the cause of the interference by disconnecting the connected devices and rotating the power supply plug for the relevant device through 180° if possible. – Connect all system components to the same power supply voltage phase using a multiple socket.

8. Servicing

The Transferbox 2 requires no servicing, but you should still perform a regular function check (see "6. Function check" on page 28). We recommend having repair work performed only by the manufacturer.

8.1 Storage

Store the Transferbox 2 under the specified ambient conditions (see "10.1 Specifications" on page 34).

8.2 Disposal

Do not dispose of the device in domestic waste. To dispose of the device properly, contact an approved, certified electronics scrap dealer. You can obtain the address from your Environment Officer or your local authority. The device packaging (cardboard and inserts) can be disposed of in paper recycling facilities.

9. Scope of supply

9.1 Standard scope of supply

Transferbox 2 **WM 95300**

Description	Order number
Transferbox 2, basic device	WM 95320
Power supply unit	WM 95090
SOMNO*lab* PC software	WM 98500
Connecting cable for converter box/therapy device	WM 93313

9.2 Accessories and replacement parts

A current list of accessories and replacement parts can be ordered on the internet site of the manufacturer or through your authorized specialist dealer.

10. Technical data

10.1 Specifications

	Transferbox 2
Product class to directive 93/42/EEC	I
Dimensions W x H x D in cm – Transferbox 2 – Power supply unit	 19 x 13.8 x 4.55 5.15 x 3.4 x 8.75
Weight – Transferbox 2 – Power supply unit	 approx. 400 g approx. 210 g
Temperature range – Operation – Storage	 +5 °C to +40 °C –20 °C to +70 °C
Air pressure for operation and storage	700 hPa to 1060 hPa
Permitted humidity for operation and storage	25 % to 95 % rh (no condensation)
Electrical rating	100 V to 240 V ~, 50 Hz to 60 Hz
Current consumption	at 230 V: 20 mA at 110 V: 40 mA
Inputs 1-4	– 1 analog input each – Input voltage: -2 V to +5 V – Precision: ±3 %
WM input	– Two analog inputs – Input voltage: -2 V to +5 V – Precision: ±3 % – Digital interface RS485 half duplex up to 460 kBaud
Electrical rating, power supply unit	Input: 100 V to 240 V Output: 7,5 V DC

	Transferbox 2
Classification to EN 60601-1 – Type of protection against electric shock (power supply unit only) – Protection against damaging ingress of water	Protection class II IPX0
Electromagnetic compatibility (EMC) to EN 60601-1-2 – Radio interference suppression – Radio interference immunity	Test parameters and limit values can be obtained from the manufacturer on request. EN 55011 EN 61000-4 Parts 2 to 6, Part 11
Length of power supply connecting cable	2,0 m

The right to make design modifications is reserved.

10.2 Specifications for radio module

	Radio module
Transmitter and receiver	Bluetooth to specification V1.2
Carrier band	2400 MHz to 2483.5 MHz
Type and frequency response of modulation	GFSK, 1 Mbps 0.5 BT Gaussian
Frequency hop characteristic	1600 hops/s 1 MHz channel interval
Frequency hops	2400 MHz to 2483.5 MHz F = 2402 + k MHz k = 0 to 78
Transmission power	Typically: 0 dBm (Class 2)
Reception signal range	Typically: 80 dBm to -15 dBm
Receiver intermediate circuit frequency	1.5 MHz heterodyne downmixer
Protected zone	2 MHz < F < 3.5 MHz for USA, Japan and Europe (except for Spain and France)

10.3 Safety distances

Medical electrical equipment is subject to special precautions in relation to electromagnetic compatibility (EMC). It must be installed and started up according to the information on EMC contained in the accompanying documentation.

Recommended safety distances between portable and mobile HF telecommunication devices (e.g. cellphones) and the Transferbox 2			
Nominal power of HF device in W	**Safety distance depending on transmission frequency in m**		
	150 kHz - 80 MHz	**80 MHz - 800 MHz**	**800 MHz - 2.5 GHz**
0.01	0.04	0.04	0.07
0.1	0.11	0.11	0.22
1	0.35	0.35	0.70
10	1.11	1.11	2.21
100	3.50	3.50	7.00

Additional technical data are available from the manufacturer on request.

11. Warranty

Löwenstein Medical gives the customer a limited manufacturer warranty on new original Löwenstein Medical products and any replacement part fitted by Löwenstein Medical in accordance with the warranty conditions applicable to the product in question and in accordance with the warranty periods from date of purchase as listed below. The warranty conditions are available on the website of the manufacturer. We can also send you the warranty conditions on request.

In the event of a claim under warranty, contact your specialist dealer.

Product	Warranty period
Devices including accessories (except masks)	2 years
Masks including accessories, rechargeable batteries, batteries (unless quoted differently in the technical documentation), sensors, tube systems	6 months
Disposable products	None

12. Declaration of Conformity

Löwenstein Medical Technology GmbH + Co. KG, Kronsaalsweg 40, 22525 Hamburg, Germany, the manufacturer of the devices described in these Instructions for Use, hereby declares that the product complies with the respective regulations of Medical Devices Directive 93/42/EEC. The unabridged text of the Declaration of Conformity can be found on the manufacturer's website.

WM 96611b 09/2017 EN

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Löwenstein Medical
Technology GmbH + Co. KG
Kronsaalsweg 40
22525 Hamburg, Germany
T: +49 40 5 47 02 - 100
F: +49 40 5 47 02 - 476
www.loewenstein-medical.com

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