PeakTech® 8005

**Bedienungsanleitung /
Operation manual**

**Digital Schallpegelmesser /
Sound Level Meter**

Safety Precautions

This product complies with the requirements of the following European Community Directives: 2004/108/EC (Electromagnetic Compatibility) and 2006/95/EC (Low Voltage) as amended by 2004/22/EC (CE-Marking). Pollution degree 2.

To ensure safe operation of the equipment and eliminate the danger of serious injury due to short circuits (arcing), the following safety precautions must be observed.

Damages resulting from failure to observe these safety precautions are exempt from any legal claims whatever.

* Comply with the warning labels and other info on the equipment
* Use in areas with very fluctuating air pressure conditions (aircrafts, high altitude layers) can adversely affect measurement accuracy
* Do not subject the equipment to direct sunlight or extreme temperatures
* Do not subject the equipment to extreme humidity or dampness
* Do not subject the equipment to shocks or strong vibrations
* Do not operate the equipment near strong magnetic fields (motors, transformer, etc.)
* Keep hot soldering irons or guns away from the equipment
* Allow the equipment to stabilise at room temperature before taking up measurement (important for exact measurements)
* Do not modify the equipment in any way
* Do not place the equipment face-down on any table or work bench to prevent damaging the controls at the front
* Opening the equipment and service- and repair work must only be performed by qualified service personell.
* Measuring instruments don't belong to children hands-

Cleaning the cabinet
Clean only with a damp, soft cloth and a commercially available household cleanser. Ensure that no water gets inside the equipment to prevent possible shorts and damage to the equipment.

1. Introduction

Your digital sound level meter provides automatic or manual ranging from 30 to 130 dB. The unit meets IEC 61672-1 Class 2 standards, and features 0,1 dB resolution.

A background noise absorber permits you to measure sound levels accurately even in the presence oft high background noise.

The meter allows you to select between fast and slow response times and A and C weighting. A maximum hold function is provided.

Jacks on the meter provide both AC and DC analogue output,an internal data storage for 32000 measurements while the USB interface allows you to capture sound level data on a PC.

2. Front and Panel Description

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11. ————————
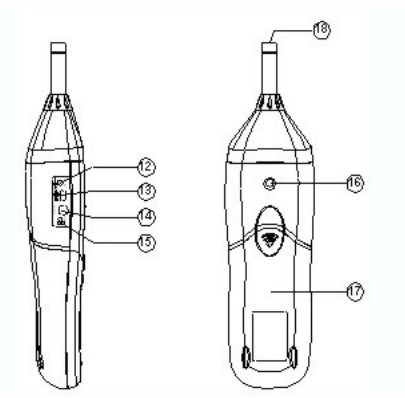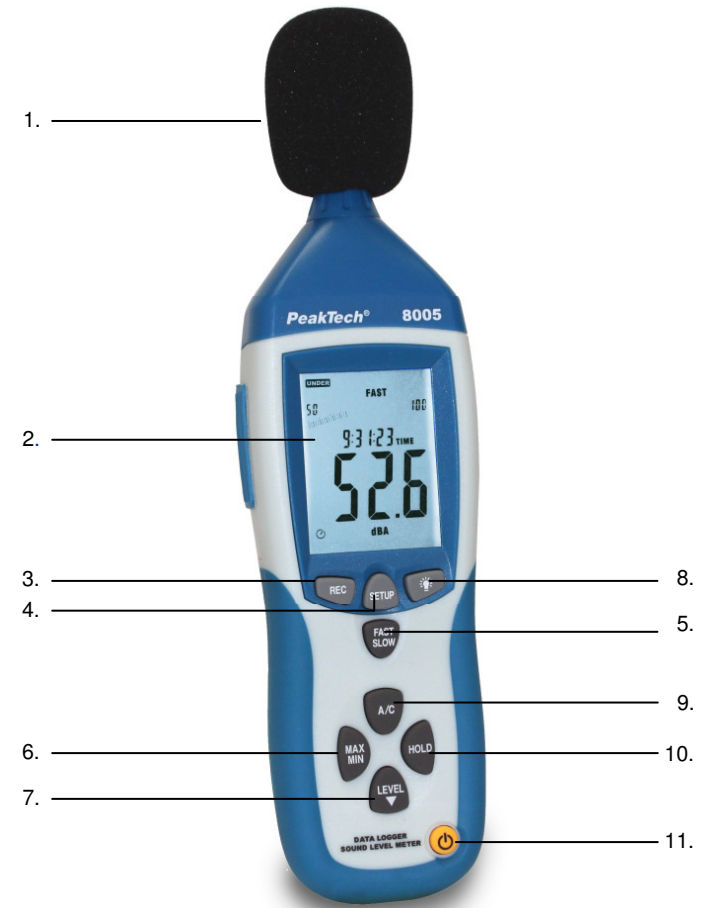
1. Windscreen
2. LCD display
3. REC-button for activating the USB-interface for Real-Time-Mode and activating the Datalogger (internal memory) without USB-connection
4. SETUP-button (for instrument adjustments; activating the USB-interface for Datalogger-connection)
5. FAST/SLOW change-over-switch
6. MAX/MIN change-over-switch
7. LEVEL-button for manuel range selection
8. Backlight
9. Frequency weighting selector button
10. DATA-HOLD-key
11. ON/OFF-button
12. External DC 9V power supply terminal
13. USB-interface terminal
14. AC/DC signal output
15. Calibration potentiometer (CAL)
16. Tripod mounting screw
17. Battery cover
18. Microphone

3. Measuring Sound Levels

Sound levels are displaying both digitally and in bar graph.

*   Press the ON/OFF key to turn the meter on. The meter will now begin measuring the current sound levels. Point the microphone toward the source of the sound to be measured.

3.1. Selecting A and C weighting

When you turn the meter on, it will be in A weighting mode. A weighting enables the meter to respond in the same manner as the human ear, which increases and decreases amplitude over the frequency spectrum. Applications for A weighting include OSHA regulatory testing, environmental measurement, workplace design and law enforcement.

C weighting is suitable for flat response measurements with no increase or decrease of amplitude over the frequency spectrum. Applications for C weighting include the sound level analysis of engines and machinery.

Press the A/C (9) key to toggle between A and C weighting. The symbol dBA or dBC will be displayed on the right side of the screen to indicate the current mode.

3.2. Selecting the response time

You can select fast or slow response time to suit different applications and standards. For example, most OSHA-related testing is done using slow response time and A weighting.

When you turn the meter on, it will be in fast response mode. Press the FAST/SLOW (5) key to toggle between fast and slow response. A small fast or slow will be displayed on the right side of the screen to indicate the current mode.

FAST: 1 time per 125 mS
SLOW: 1 time per second

<u>**3.3. Recording the maximum and minimum measurements**</u>

MAX/MIN button: Maximum and Minimum hold
Press this button for one time to enter MAX/MIN measurement, 'MAX' will appear on LCD, maximum sound level will be captured and held until higher sound level is captured. Press the button again, 'MIN' will appear on LCD and minimum sound level will be captured and held until new lower sound level is captured. Press the button one more time to exit MAX/MIN measurement.

HOLD button: Press "HOLD" button, The hold function freezes the reading in the display.

Power button: Turn the meter power ON/OFF

External DC 9V power
supply terminal: For connection with DC 9V power supply.

Aperture size: external diameter: 3.5mm, internal diameter: 1.35mm

USB interface: USB signal output is a 9600 bps serial interface.

AC/DC signal output:
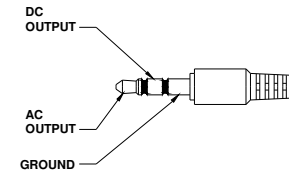
AC: Output voltage: 1Vrms corresponding to each range step.
      Output impedance: 100Ω
DC: Output voltage: 10mv/dB
      Output impedance: 1KΩ

3.4. Selecting automatic and manual ranging

The meter features 4 measurement ranges:
AUTO: 30 ... 130 dB
LO: 30 ...   80 dB
MED:50 … 100 dB
HI: 80 … 130 dB.

When you turn the meter on, it will be in manual range mode. This is helpful when you know the measurement range in advance. The meter will be able to take readings more quickly, because the unit does not need to first establish the range before displaying the measurement.

You can also set the range automatically. In this mode, the meter will adjust the measurement range automatically for accuracy. The two digit number to the left of the bar graph on the LCD will show the low end of the current range. This is helpful when you know the measurement range in advance. The meter will be able to take readings more quickly, because the unit does not need to first establish the range before displaying the measurement.

To activate the AUTO-range mode:

When measuring sound levels, press the LEVEL (7) key until "AUTO" appears in the LCD display. Note that the two digit number to the left of the bar graph will change to reflect the low of the newly selected range.
To switch back the manual range, please press the LEVEL (7) key again, until "AUTO" disappears from the display.
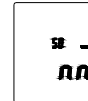
3.5. SETUP button

The time chip adjustment
Press SETUP-button and then power it on when TIME -symbol displays then loosen SETUP the meter will be under time adjustment mode, at the time the display will show the date as following:

Press the SETUP button second time, the display showing:

The display showing "minute" adjustment mode, press LEVEL to make the adjustment, press HOLD to leave the setup.
Press SETUP button third time, the display showing:
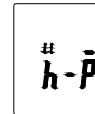
The display showing "hour" adjustment mode, press LEVEL to make the adjustment, press HOLD to leave the setup.
Press the SETUP button fourth time, the display showing:

The display showing "date" adjustment mode, press LEVEL to make the adjustment; press HOLD to leave the setup.
Press the SETUP button fifth time, the display showing:

The display showing "month" adjustment mode, press LEVEL to make the adjustment; press HOLD to leave the setup.
Press the SETUP button sixth time, the display showing:

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— -?-85
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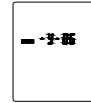
The display showing "year" adjustment mode, press LEVEL to make the adjustment press HOLD to leave the setup.

Press the SETUP button seventh time, the display showing:

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r5t
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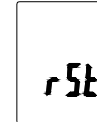
Now, press SETUP button again, and then press HOLD button to save the adjustments.

3.6. Calibration potentiometer (CAL)

For external standard level calibration adjustments by a calibration laboratory.

3.6.1. Calibration Procedures

*   Make the following switch settings:
    Frequency weighting: A-weighting
    Time weighting: FAST
    Level range: 50 ~100dB
*   Insert the microphone housing carefully into the 1/2 inch insertion hole of the calibrator (94dB / 1kHz).
*   Turn on the switch of calibrator and adjust the CAL potentiometer of the unit 94.0dB is displayed.

NOTE: All products are well calibrated before shipment. Recommended recalibration cycle: 1 year.
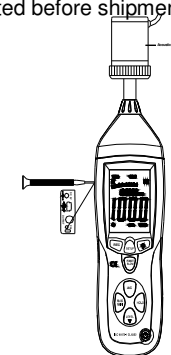
3.7. Measurement Preparation
*   Remove the battery cover on the back and put in one 9V battery.
*   Recover the back cover.
*   When battery voltage drops below the operating voltage or battery aging, this symbol 🔋 will appear on LCD, replace the 9V battery.
*   When the AC adapter is used, insert the plug of the adapter (3.5 Ø) into the DC 9V connector on the side panel.

3.8. Operating Procedure

* Power on the meter.
* Press LEVEL button to select desired level, base on UNDER or OVER do not appear on LCD.
* Select dBA for general noise sound level and dBC for measuring sound level of acoustic material.
* Select FAST for instant sound and SLOW for average sound level.
* Select MAX/MIN button for measuring maximum and minimum noise level.
* Hold the instrument comfortable in hand or fix on tripod and measure sound level at a distance of 1~1.5 meter.

3.9. Notice

* Do not store or operate the instrument at high temperature and high humidity environment.
* When not in use for long time, please take out the battery to avoid battery liquid leakage and cautery on the instrument.
* When using the instrument in the presence of wind, it is a must to mount the windscreen to not pick up undesirable signals.
* Keep microphone dry and avoid severe vibration.

3.10. Installing the software

* Start windows
* Insert the CD into the CD/DVD-drive.
* Run SETUP.EXE installation program and install it to the referred directory

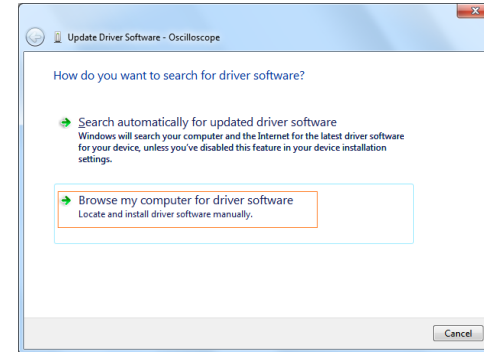### 3.11. USB Drive Installation

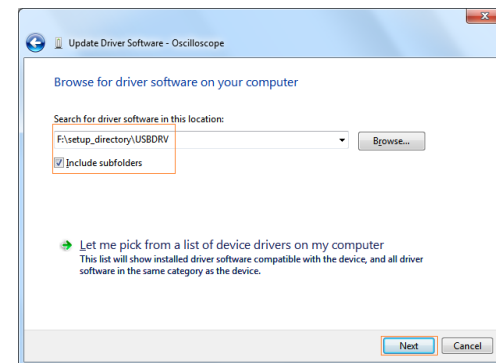* Connect the device to your computer
* Windows displays „New hardware found"
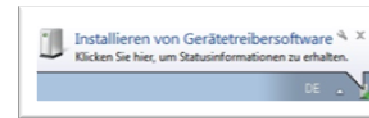
* Open the „Device Manager" from the "Control Panel" (START/Control Panel/SYSTEM/Device Manager)
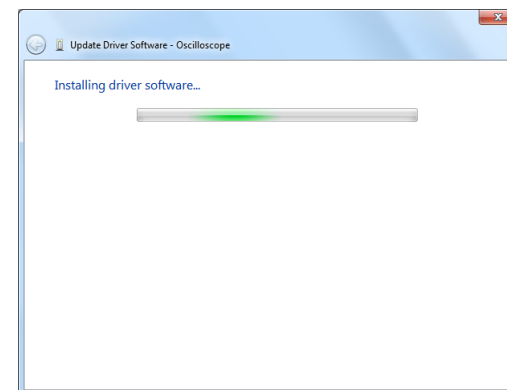* Right – click the yellow marked „CP2102 USB to UART Bridge Controller" symbol
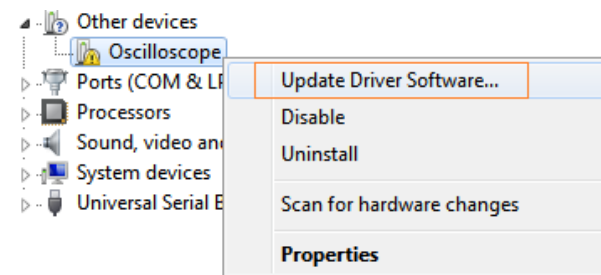
* Click „Update driver"
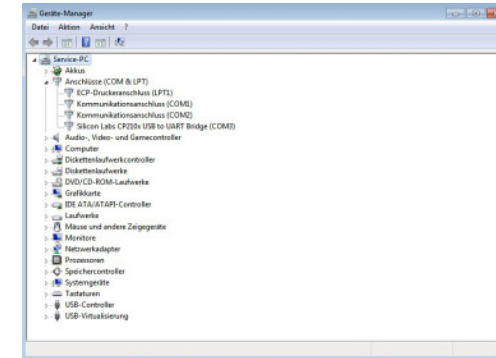* Choose „Search automatically for new driver software "

* Or click „Browse my computer for driver software"

* Choose the driver directory from your PeakTech 8005 software CD

* After the installation, please check if the driver is installed correctly in the "Device Manager"

* If the driver is installed correctly, you will find it under "Connections (COM & LPT)" with a COM-Port number (Standard: COM3)

* A higher COM-Port than COM-4 may cause connection errors. Please set COM-Port manually to COM-4 if problems occur.

4. Operation mode with PC-connection

### 4.1. Operation with the delivered software (Real-Time-Mode)

USB communication settings:
Turn on the meter, connect the meter with the computer correctly, choose the software COM3 or COM4, then press "SETUP". ⊘ -Symbol" disappears from the display to indicate and disable auto power off, that USB data is transmitting.

* Start the application software, connect the P 8005 with the usb-cable with your PC.
* Choose in the main menu "COM-PORT" the correct COM-Port.
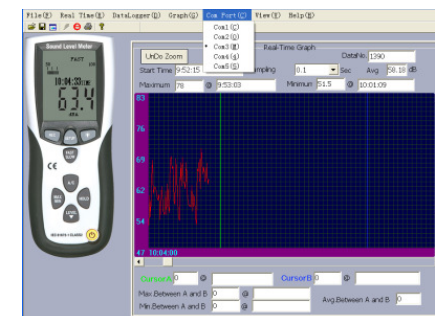
* Press "REC"-button to activate the usb-communication
* Choose "Real time"-function for real-time measurements and the function "Setup". In this window you can adjust the data you need for your measurement, i.e. max record values (max. 20000), sample rate (0,1 to 10 seconds) and the chronological limits from beginning to the end.
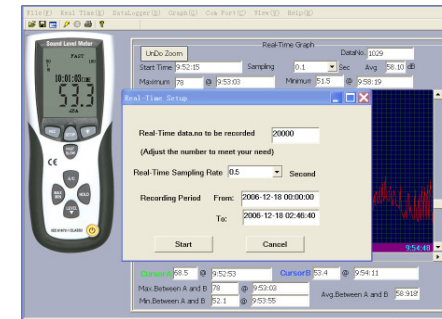
* Choose the function "Run" under the "Real time"-menu in the main menu.
* Now, the software will record measuring values directly from the instrument.
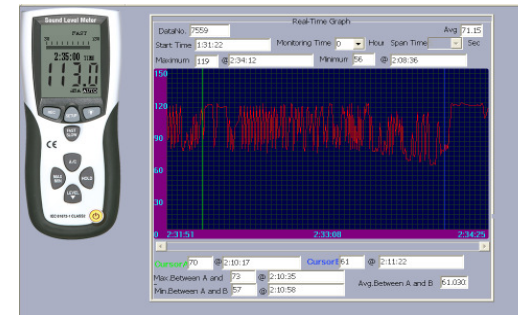
* After finishing the measurement, the software shows you a message, where you should save your values (TXT or XLS-Format).

4.2. Operation with the internal memory of the PeakTech 8005 (Datalogger)

With the datalogger it is possible to record and save sound level without connection to any PC. The measured values (max. 32000 values) will be saved to the internal memory of the unit, which can download with help of the delivered software to the PC later.

* press the "REC"-button to activate the datalogger
* in the display appears "REC" and the " ⊘ -symbol" disappears. Now the datalogger is started and record measurement values 1 time per second.
* If the measurement is finished, press "REC"-button to deactivate the datalogger. "REC" disappears in the display.

Note:
If the memory is completely of the capacity, in the display appears "FULL".
The memory has to be erased for measurements, which will be made at a later time.

Follow these steps to erase the memory:
* Press and hold the "REC"-button and turn on the unit.
* "CLA" (for Clear) appears in the display
* The internal memory is now erased and free for further measurements

In order to avoid data error, please don't power it off under REC condition, when the REC function is deleted then it can power off.

4.3. Adjusting Datalogger response

Press the button 💡 continuously before power it on, then press ⏻ , to turn on the unit:
Press "LEVEL" button to adjust memory time (1-59 seconds), press "HOLD" button to hold the setup.

Download the saved data from the internal memory (Datalogger)

* Connect the unit with help of the USB-cable to the PC
* start the application software
* choose the correct COM-Port in the main menu "COM-Port"
* Press the "SETUP"-button at the unit
* The " 🚫 -Symbol" disappears in the display. The USB-interface is now ready to transmit the measuring values
* choose "Datalogger" in the main menu of the software
* The internal saved values will be transmit and in the display of the unit appears "Out"
* dependent to the recorded values and amount of data the transmission could take some time until it is completed
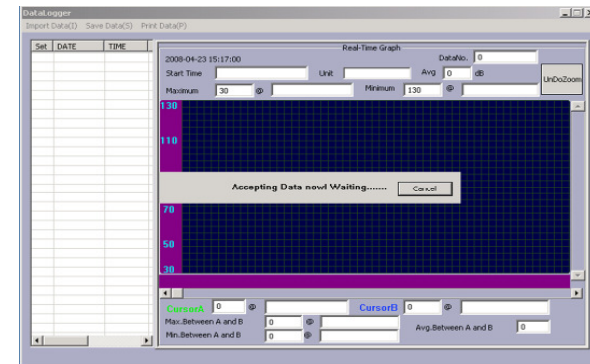
*   After finishing the transmission, the screen shows the download window. At the left side the saved values will be shown in chronological sequence. With a double-click to the corresponding line, in the right window the measurement data will be shown with a waveform.
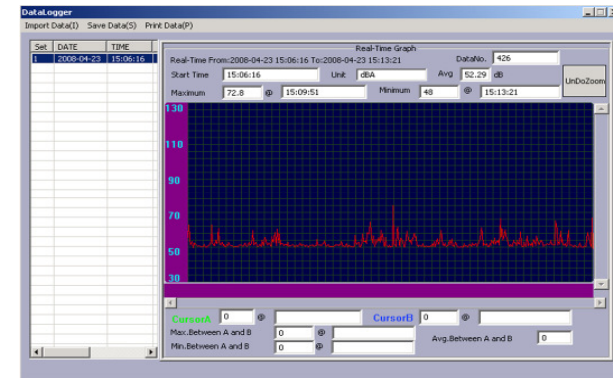
*   To save the data to your PC choose in the menu "Save Data" and give the folder and filename, where you want to save the data and confirm it by "Save".

Note:
Please note that only files are stored, which had previously been selected form the table on the left side of the screen.
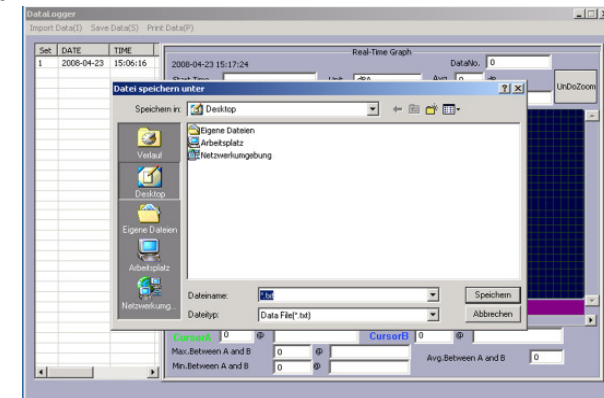
*   The measurement data are now saved to the PC.

5. Technical specifications

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Applicable standards	IEC 61672-1 CLASS 2
Measurement frequency range	31,5 Hz ...... 8 KHz
Accuracy	± 1,4 dB
Measurement level A weighting	30 dB .... 130 dB
Measurement level C weighting	30 dB .... 130 dB
Measurement level range	LO: 30 dB ... 80 dB MED: 50 dB ... 100 dB HI: 80 dB ... 130 dB
Automatic range	30 ..... 130 dB
Time weighting	fast (125 ms) or slow (1S)
Digital display	4-digit LCD 0,1 dB resolution updated every 0,5 seconds
51 segment bargraph	1 dB display steps 50 dB display range updated every 50 ms
Microphone	13 mm diameter, electret condenser microphone
Analogue output	AC: 1 Vrms DC: 10 mV DC/dB
Datalogger sample rate Memory	1x/second to 1x/minute 32 kbyte for to 33000 values
Operating Temperature	0 .... 40° C
Humidity	10 …. 90%
Storage Temperatur	-10 .... + 60° C; 10 … 75 %RH
Battery	9 V
Battery life	approx 30 hours
Size (WxHxD)	80 x 280 x 50 mm
Weight	350 g
Accessories	case, USB-interface cable, Software for Windows 98/2000/XP/VISTA/WIN 7 (32 & 64-Bit), battery, 9 V-AC-Adaptor, adjustment screwdriver, 3m cable extension, instruction manual and Tripod

6. Replacing the battery

When the entire display shows the low battery " " indication, the 9 V battery has fallen to a critically low voltage level and should be replaced as soon as possible.

1.   Take off the battery cover at the button side of the instrument,

2.   remove the old battery and replace the new 9 V battery.

3.   make sure that the battery is installed to the right position and connected to the proper polarisation with the battery snap.

4.   put on the battery cover and let it snap in to secure.

Statutory Notification about the Battery Regulations

The delivery of many devices includes batteries, which for example serve to operate the remote control. There also could be batteries or accumulators built into the device itself. In connection with the sale of these batteries or accumulators, we are obliged under the Battery Regulations to notify our customers of the following:

Please dispose of old batteries at a council collection point or return them to a local shop at no cost. The disposal in domestic refuse is strictly forbidden according to the Battery Regulations. You can return used batteries obtained from us at no charge at the address on the last side in this manual or by posting with sufficient stamps.
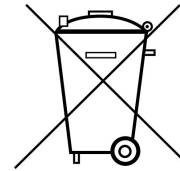
Batteries, which contain harmful substances, are marked with the symbol of a crossed-out waste bin, similar to the illustration shown left. Under the waste bin symbol is the chemical symbol for the harmful substance, e.g. „Cd" for cadmium, „Pb" stands for lead and „Hg" for mercury.

You can obtain further information about the Battery Regulations from the Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit (Federal Ministry of Environment, Nature Conservation and Reactor Safety).