

## Operating instructions

EK 533 plus 2.0 signal requesting device for pedestrians and the visually impaired



# Contents

1.	General information	English	3
2.	Safety information		3
3.	Scope of delivery		3
4.	Technical data		4-6
4.1	Dimensions		4
4.2	Power inputs		5
4.3	Optional control inputs		5
4.4	Switching outputs 1+2+3		5
4.5	Requesting a signal		5
4.6	Block diagram		6
4.7	Return conductor options		7
5.	Operating modes		8-12
5.1	P mode		9
5.2	PR mode		9
5.3	PRF mode		10
5.4	RG mode		11
5.5	RGF mode	12	
6.	Installation	13-17	
6.1	Installing the signal requesting device on the pole	13-14	
6.2	Aligning the crossing symbol	15-16	
6.3	Installing the relief symbols	16-17	
7.	Set-up and function test	18-19	
7.1	Vibrator and vibrator push-button	18	
7.2	Feedback	19	
7.3	Sound test	19	
8.	Maintenance	19	
9.	Parametrisation	20-53	
9.1	Editing datasets in offline mode	51-51	
9.2	Offline conversion of EK 533 datasets to EK 533 plus 2.0 datasets	52	
9.3	Online conversion of EK 533 datasets to EK 533 plus 2.0 datasets	53	
10.	FAQ - cgManager (Frequently Asked Questions)	54	
11.	Accessories	55-57	
12.	EC Declaration of Conformity	58	
13.	Material defects	59	
14.	Quality management	59	
15.	Disclaimers	59	
16.	Contacts	60	

## 1. General information

These operating instructions are included with delivery.



**CAUTION! Any person operating, maintaining or repairing the device must have read and understood these operating instructions, and must observe them at all times. We cannot accept any liability for damage and malfunctions caused by a failure to observe the operating instructions.**

Devices may only be installed by specialist road traffic installation personnel. Installation must comply with all applicable regulations and guidelines.

In the interest of further development, we reserve the right to change individual assemblies and accessories as considered necessary for further safety and performance improvements, while preserving the main features. The copyright to these instructions remains with Langmatz GmbH.

## 2. Safety information

- Only operate the Crossguide on road traffic signal systems that meet Class X1 criteria in accordance with DIN EN 50556:2018. At least one of the following classes must be complied with in accordance with DIN EN 12675:2017: Class AA1; Class AD1.
- Do not use the product if it is damaged. Please contact the hotline (see "Contacts").
- The operating company is responsible for installing, operating and maintaining the fixtures.



**Danger!**  
**Applicable occupational safety and environmental protection regulations must be observed during assembly, operation, care, maintenance and repair.**

- Devices may only be opened by specialist personnel. Before opening a device, ensure that it is disconnected from the operating voltage. Operating an open housing carries a risk of contact with live components or conductors and/or conductor paths. Looking directly at the LEDs can impair your vision.
- Observe the technical data provided (see Section 4).

## 3. Scope of delivery

1 x EK 533 plus 2.0 pedestrian signal requesting device for the visually impaired with connection cable

2 x M6 x 25 (A2) fastening screws

1 x Crossing symbol accessories kit  
Contents: 4 x (see Fig. 19)

1 x Universal lighting-pole adaptor for poles with a diameter of 89 - 159 mm

1 x silicone pole seal

1 x Special key

1 x Drilling template (self-adhesive paper) (see Fig. 13)

1 x operating instructions

1 x Relief symbol accessories set, including two blank covers

## 4. Technical data

Designation device for the visually impaired	EK 533 plus 2.0 pedestrian signal requesting
Operating voltage	24 - 40 V AC/DC   24 - 230 V AC must be set in cgManager (see Page 45, Fig. 66).
Housing colour	Yellow, similar to RAL 1023, solid coloured STANDARD, other colours available upon request.
Housing material	Polycarbonate, PC
Protection class	II
Protection rating	IP54
Safety	SIL 2
Power consumption	Typically 7 W   Maximum 13 W
Mounting	2 x A2/M6 x 25 hexagon socket screws
Lighting-pole adaptor	Universal, stainless steel, suitable for a diameter of 89 mm, 108 mm and 159 mm Optionally available: Lighting-pole adaptor > diameter 159 mm and wall installation
Operating temperature	-25 °C to +60 °C
H/W/D	256 mm/107 mm/68 mm (distance from pole)
Acoustic frequency range	180 - 17,000 Hz
Release signal (RS) clock frequency as per DIN 32981:2015-10	Default settings: 1 Hz; 4 Hz and 6 Hz (dependent on traffic noise); <b>Customised settings possible</b>
Orientation signal (OS) clock frequency	Default settings: 1.2 Hz (dependent on traffic noise); <b>Customised settings possible</b>
Acoustic volume at a distance of 1 m as per DIN 32981:2015-10	Dependent on traffic noise, min. 35 dB(A) to max. 90 dB(A); in combination with a remote speaker <b>Customised settings possible</b>
Acoustic sounds	Freely selectable; new sounds can be uploaded to the device, (wave) voice output possible
Parameter adjustment	Via USB cable, via serial cable or via Bluetooth
Device satisfies the following standards	DIN VDE 0832-100, 200 EN 50293:2000 DIN 32981:2015-10 ÖNORM V2100, V2101

### 4.1 Dimensions



Fig. 1



Fig. 2

## 4.2 Supply inputs

Designation	Core	Minimum	Maximum	Unit
Permanent operating voltage	2			
Pedestrian GREEN/Release (optional)	1			
Input voltage range per input		0.8 U <sub>Nom</sub> (min. 20 V)	1.2 U <sub>Nom</sub> (max. 253 V)	volts
Input power		2.2	13	watts
Nominal voltage	24 - 40 AC/DC   230 V AC			

Colour background represents core colours.

## 4.3 Optional control inputs

Optical feedback	4			
Optional control inputs 1, 2, 3	16, 15, 14			
Input voltage per input		0.8 U <sub>Nom</sub> (min. 20 V)	1.2 U <sub>Nom</sub> (max. 253 V)	volts
Input power per input		0.4	0.7	watts
Nominal voltage	24 - 40 AC/DC   230 V AC			
Functions e.g.	Night-time reduction/tone shut-off, activation of special signal			

Colour background represents core colours.

## 4.4 Switching outputs 1+2+3

**(Relays can be parametrised, are potential-free and maintenance-free)**

Switching voltage	1-250 V AC/DC			
Switching current		1	100	mA
R <sub>on</sub>		4	8	ohms (Ω)
Optional switching outputs 1, 2, 3	6/7, 8/10, 11/12	Potential-free switching output		
Contact types	Turnkey/N. Closed			
Switching pulse length	Can be parametrised between 100 ms and 5000			

## 4.5 Requesting a signal

Large-surface push-button (optional)	Via potential-free switching outputs 1, 2 or 3 (can be parametrised)
Large-surface sensor (optional)	Via potential-free switching outputs 1, 2 or 3 (can be parametrised)
Vibrator push-button	Via potential-free switching outputs 1, 2 or 3 (can be parametrised)
Contact types	Turnkey/N. Closed
Switching pulse length	Can be parametrised between 100 ms and 5000 ms

## 4.6. Block diagram

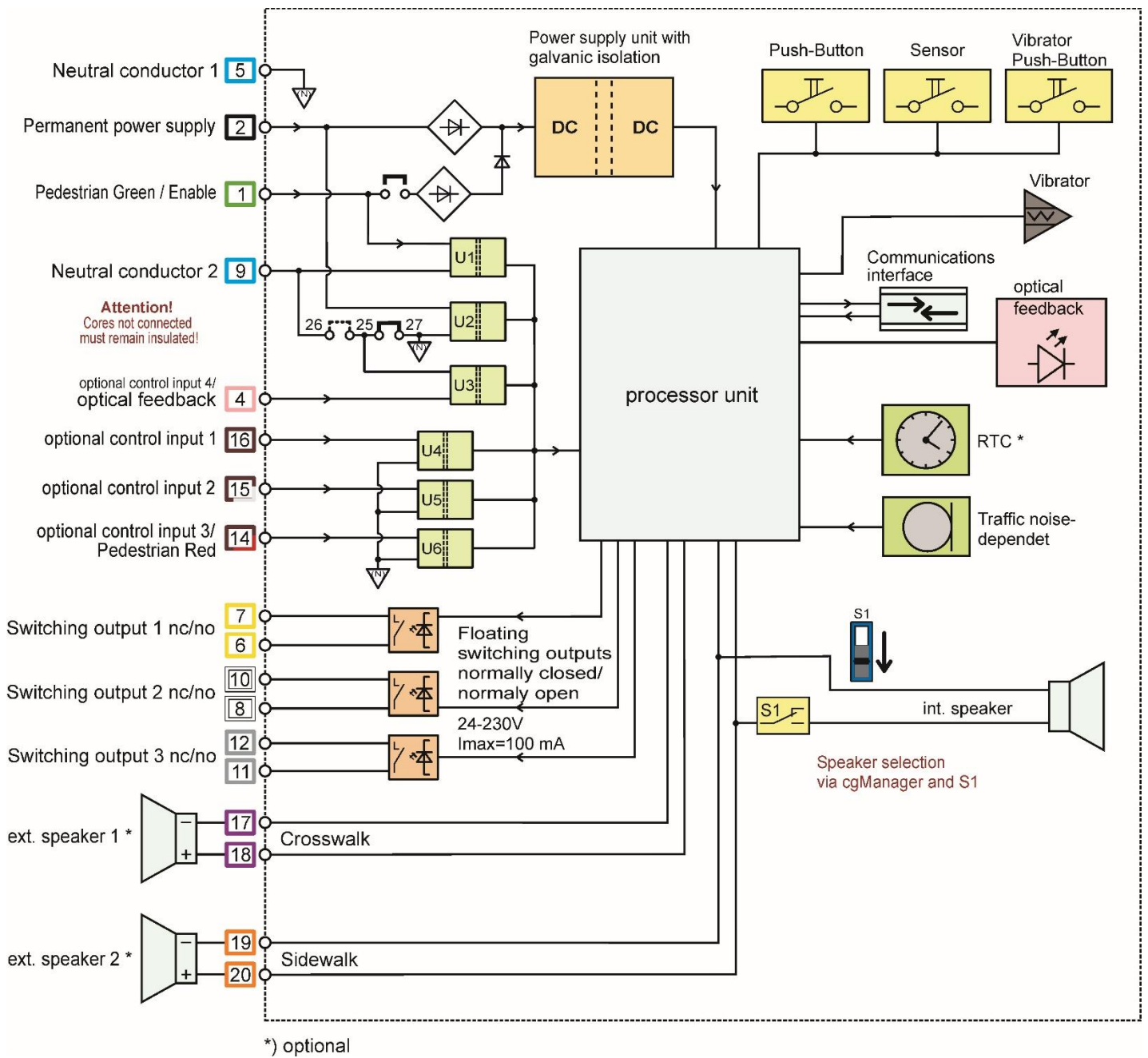


Fig. 3



## 4.7 Return conductor options

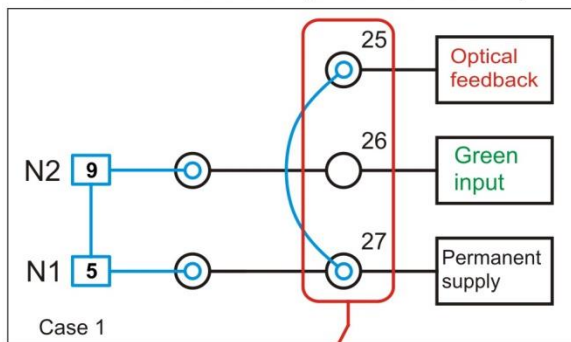
In the delivery state, all functions are operated via a return conductor (neutral conductor) (case 1). In certain cases, e.g. in the event of mixed voltages or monitored signal cables, the corresponding return conductors can be disconnected if required.

The following functions can be disconnected:

- Green signalling
- Optical feedback
- Supply voltage with optional control inputs

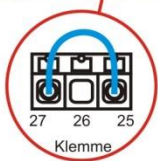
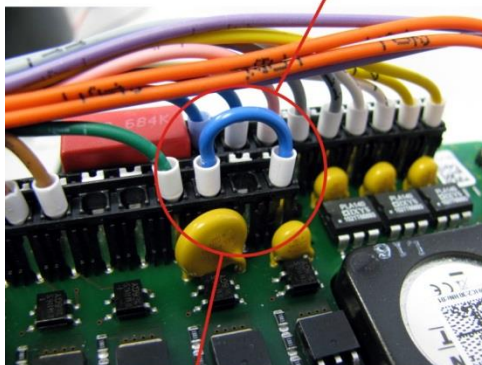
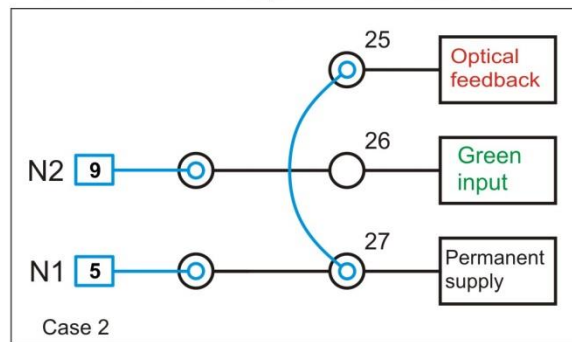
### Case 1: All functions via one return conductor (as-delivered state)

- Jumper between terminals 25 and 27 remains connected (as-delivered condition).
- Cores N1 and N2 remain connected at the cable end due to twin wire-end ferrule (as-delivered condition).



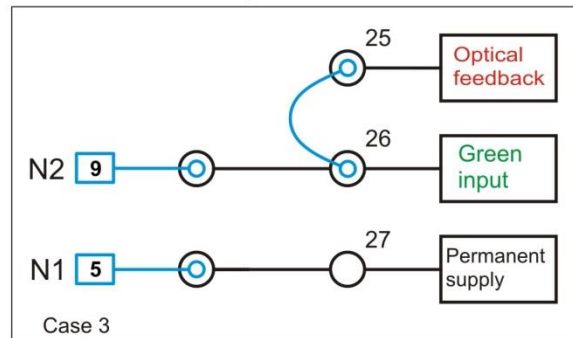
### Case 2: Green input via a separate return conductor

- Jumper between terminals 25 and 27 remains connected (as-delivered condition).
- Cores N1 and N2 are separated at the cable end.



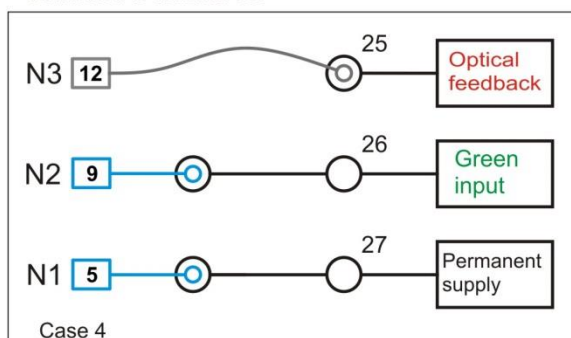
### Case 3: Green input with optical feedback via a separate return conductor

- Jumper is reconnected between terminals 25 and 26.
- Cores N1 and N2 are separated at the cable end.



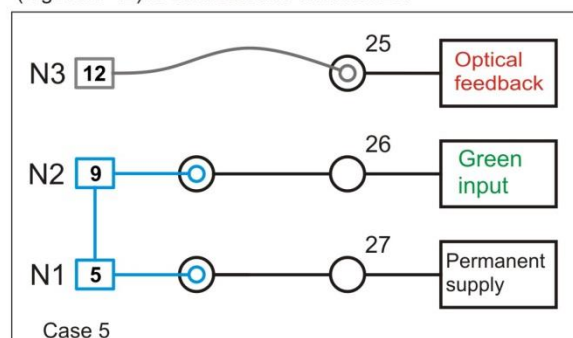
### Case 4: Optical feedback, green input and supply all with separate return conductors

- Jumper between terminals 25 and 27 is removed.
- Cores N1 and N2 are separated at the cable end.
- For N3, a cable which is not in use (e.g. core 12) is connected to terminal 25.



### Case 5: Optical feedback via separate return conductor

- Jumper between terminals 25 and 27 is removed.
- Cores N1 and N2 remain connected at the cable end due to twin wire-end ferrule.
- For N3 (optical feedback), a wire which is not in use (e.g. core 12) is connected to terminal 25.



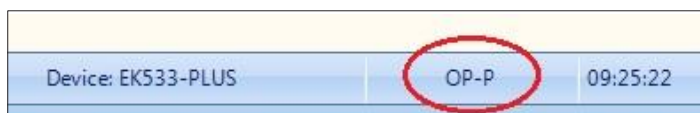
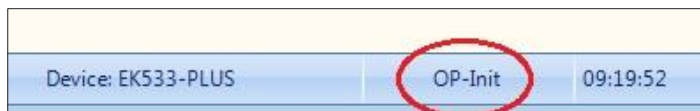
## 5. Operating modes

The EK 533 plus 2.0 pedestrian signal requesting device for the visually impaired has several operating modes, allowing it to be used as flexibly as possible.

The relevant operating voltage must be selected in cgManager (see Fig. 66). Jumper position (see Fig. 9).

Each mode has requirements for:

- Connecting the device to the control unit
- Software parameters
- Device hardware modifications (buffer PCB)



- When the operating voltage is applied, the device is in initialisation mode.
- The current operating mode is displayed after the green signal is activated for the first time.

Operating mode	Jumper connected	Goldcap buffer PCB	Parametrisation required	Notes
P mode	-	-	-	
PR mode	-	-	OPT3 = Red signal	1
PRF mode	-	-	FRS active, OPT3 = Red	1; 2
RG mode	Yes	-	-	1
RGF mode	Yes	Yes	FRS active	1; 2

**1** Should not be used in Germany

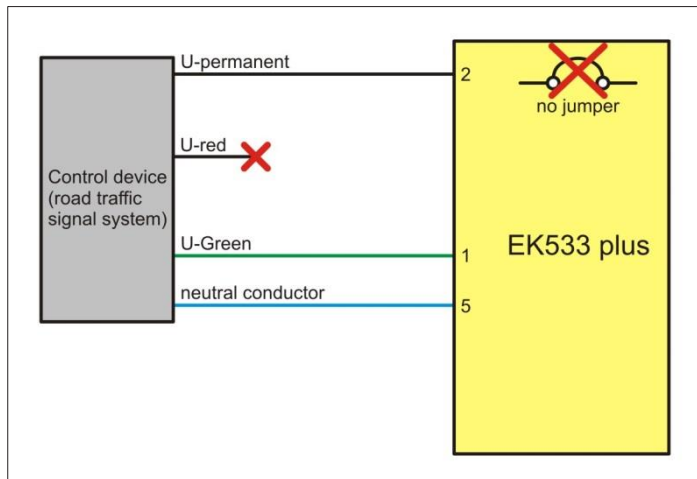
**2** Flashing mode does not conform to DIN 32981

Once the device is switched on, the operating voltage must be defined in cgManager. The device is internally ready for operation. When the device detects overvoltage/undervoltage, it switches off all tactile and acoustic signals. The device cannot be damaged by applying a higher/lower voltage than the one in the settings. (See Page 42, Fig. 66.)



## 5.1 P mode (permanent voltage supply)

### Connection



- Supply: Permanent voltage
- Software parameters: None

Fig. 4

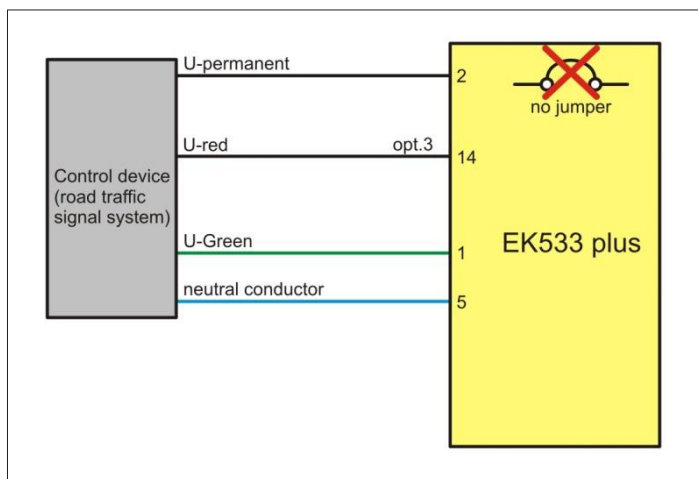
### Description:

The **green release** is signalled via a separate voltage. **Traffic light red** status is not signalled to the device.

The jumper, which activates the device supply via the **green pedestrian** signal, is not connected.

## 5.2 PR mode (like P mode but with red input as well)

### Connection



- Supply: Permanent voltage
- Software parameters:  
Function of optional input = Red signal (see Fig. 65)

Fig. 5

### Description:

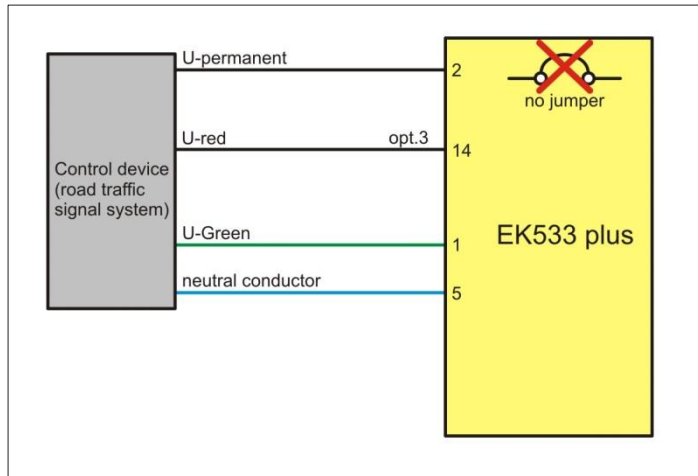
**Traffic light red** status is signalled to the device via an additional input.

The jumper, which activates the device supply via the **green pedestrian signal**, is not connected. Erroneous red/green signals are detected and switch off the device.

If there is no signal, no orientation signal will sound. The device requires a signal on optional input 3. This status is detected but not signalled.

### 5.3 PRF mode (like PR mode but with an additional flashing option for green)

#### Connection



- Supply: Permanent voltage
  - Software parameters: Release green flashing: active
- Function of optional input 3 = Red signal (see Fig. 65)

Fig. 6

#### Description:

**Traffic light red** status is signalled to the device via an additional input. The jumper, which activates the device supply via the **green pedestrian** signal, is not connected. Erroneous red/green signals are detected and switch off the device. Flashing mode is also activated by device parametrisation. Using a special flashing release signal (FRS), this mode enables acoustic notification that the green phase is coming to an end:

#### Signal progression

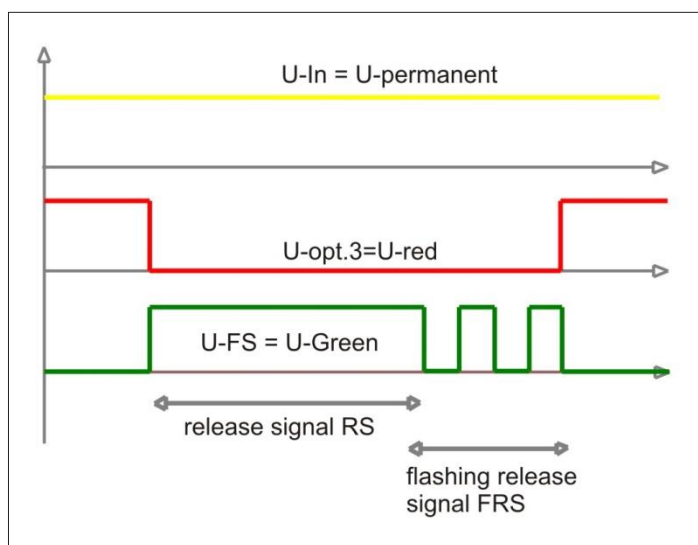


Fig. 7

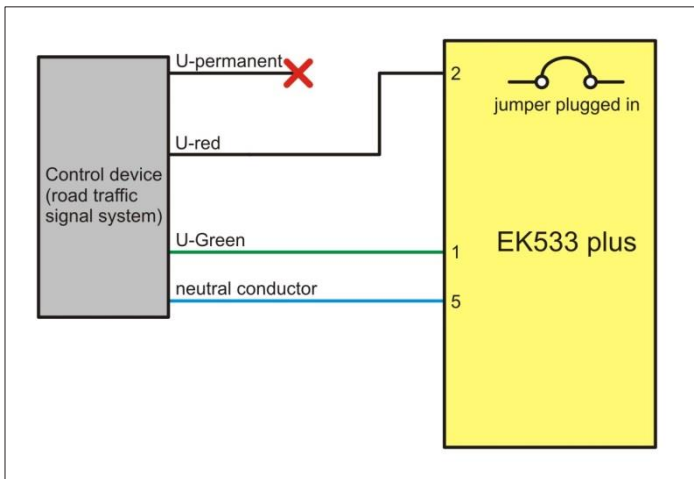
#### Detection:

The FRS is only activated if there is a green signal for at least two seconds. The status "Green flashing" is detected by a trailing edge on the green signal. If there is another pulse within 700 ms, the device continues flashing green. If there is no further pulse, signalling switches off. The FRS is also switched off by a red signal.

In PRF mode, the lack of a red or green signal is detected as sleep mode. This status is detected but not signalled.

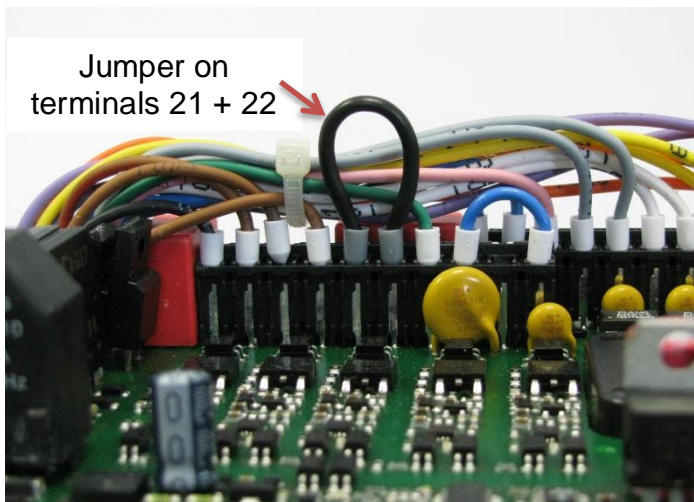
## 5.4 RG mode (power supply via red and green cables)

### Connection



- Supply:  
Via red/green alternately
- Software parameters: None

Fig. 8



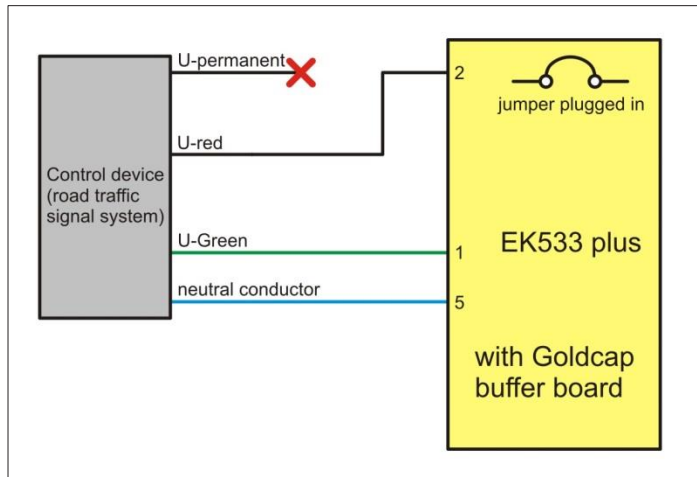
### Description:

The jumper, which activates the device supply via the **green pedestrian** signal, is connected. Erroneous red/green signals are detected and cause the device to shut off.

Fig. 9

## 5.5 RGF mode (like RG mode but with an additional flashing option for green)

### Connection



- Supply:  
Via red/green alternately
- Software parameters:  
Release green flashing:  
active

Fig. 10

### Description:

The jumper, which activates the device supply via the **green pedestrian** signal, is connected (Fig. 9). Erroneous red/green signals are detected and switch off the device. Flashing mode is also activated by device parametrisation. Using a special flashing release signal (FRS), this mode enables acoustic notification that the green phase is coming to an end:

### Signal progression

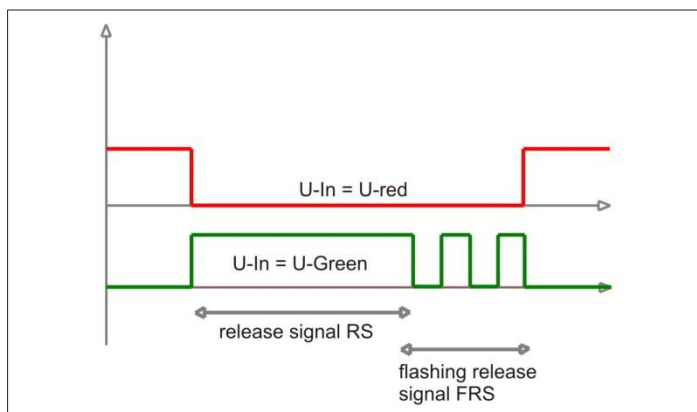


Fig. 11

### Detection:

The FRS is only activated if there is a green signal for at least 2 seconds. The status "Green flashing" is detected by a trailing edge on the green signal.

If there is another pulse within 700 ms, the device continues flashing green. If there is no further pulse, signalling switches off. The FRS is also switched off by a red signal.





Fig. 15

- Disconnect the supply line for the top part of the device by releasing the connector lock **(4)**.
- Fasten the bottom part of the device to the pole using the pre-installed, stainless-steel lighting-pole adaptor and flexible pole seal (M6 x 25 A2 screws supplied).
- **Note:** For poles > 159 mm in diameter, use the optional lighting-pole adaptor for large poles. For wall installation, use the appropriate wall adapter.
- **Note:** Torque approx. 5 Nm.
- **Note:** The flexible silicone pole seal must fit correctly between the pole and the signal requesting device.
- Place the captive plastic caps **(5)** back on both M6 fastening screws. **Make sure that the device fits correctly (protection class!).**
- Connect the connection cable to the cable distributor according to the block diagram (see Section 4.6).
- Unused cores must remain insulated.
- After installing the pedestrian signal requesting device for the visually impaired, a function test must be performed:

Green = Release signal  
 Red = Orientation sound

You must be able to tell the two sounds apart clearly.



## 6.2 Aligning the crossing symbol

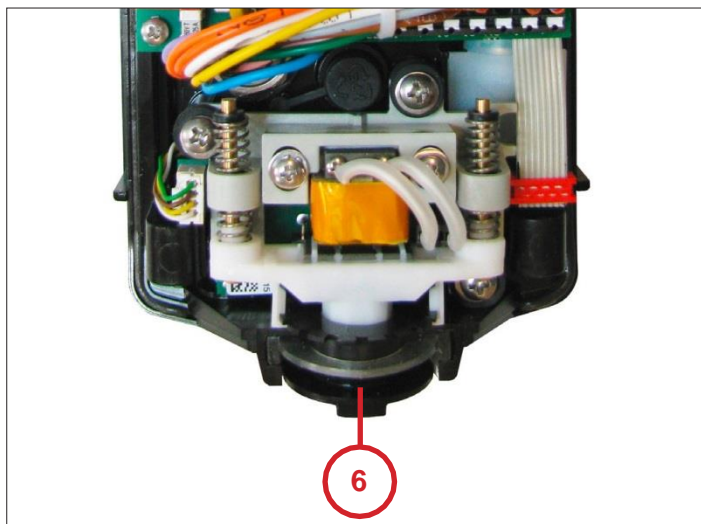


Fig. 16

- The pedestrian signal requesting device for the visually impaired is factory-fitted with a crossing symbol **(6)**.
- If the specified direction of the crossing symbol does not match the direction required, proceed as follows:

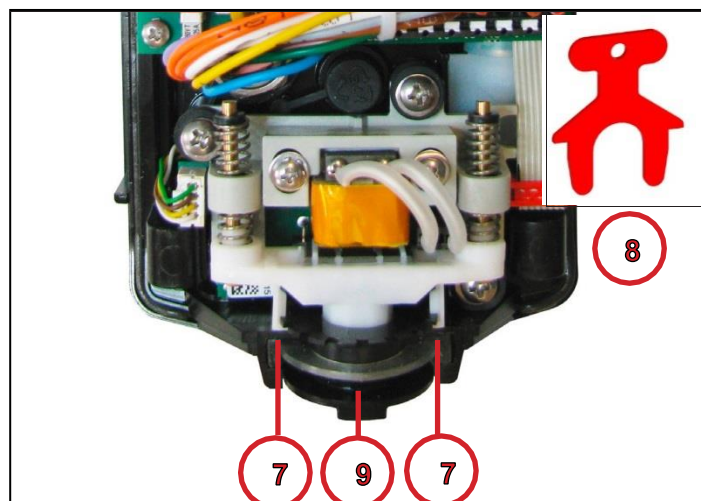


Fig. 17

- Open the white brackets **(7)** with the special key supplied **(8)**.
- Push in the crossing symbol slightly (to disengage it) and turn it in the required direction.
- Make sure that the integrated spring does not come out.
- Remove the special key **(8)**.
- Release the crossing symbol and re-engage it.
- Make sure that the integrated silicone seal **(9)** fits correctly.

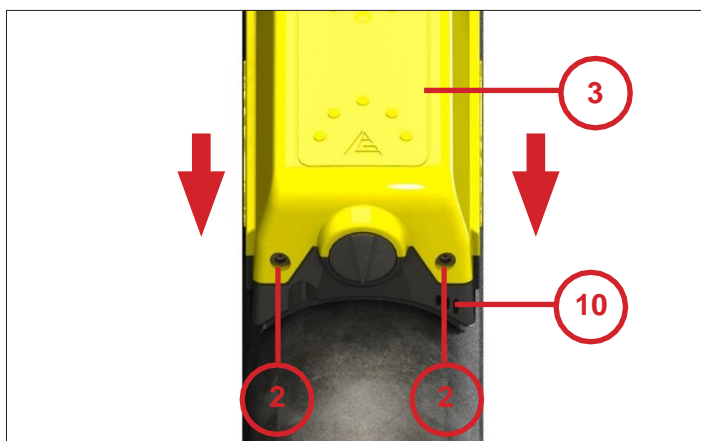


Fig. 18

- Before installing the top part of the device **(3)**, you need to install the relief symbol inserts (accessories kit) based on the circumstances of the crossing (see Section 6.3).
- Reconnect the supply line for the top part of the device (Fig. 15, 4).
- After inserting the relief symbols, push the top part of the device **(3)** onto the bottom part **(10)**.
- Check that it fits correctly and securely.
- Tighten the SW4 hexagon socket locking screws **(2)**.

## Symbols for the visually impaired as per DIN 32981 and ÖNORM V2100

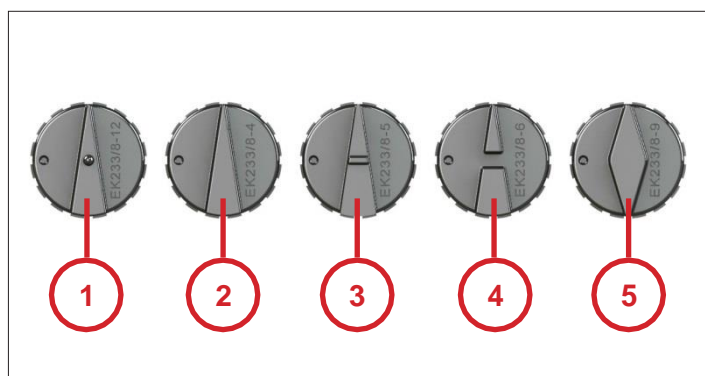


Fig. 19

- 1 Crossing with an additional request
- 2 Crossing only
- 3 Crossing with central island
- 4 Crossing with level crossing
- 5 Crossing in 2 directions

A more detailed description of the symbols and their functions is specified in DIN 32981.

### 6.3 Installing the relief symbols

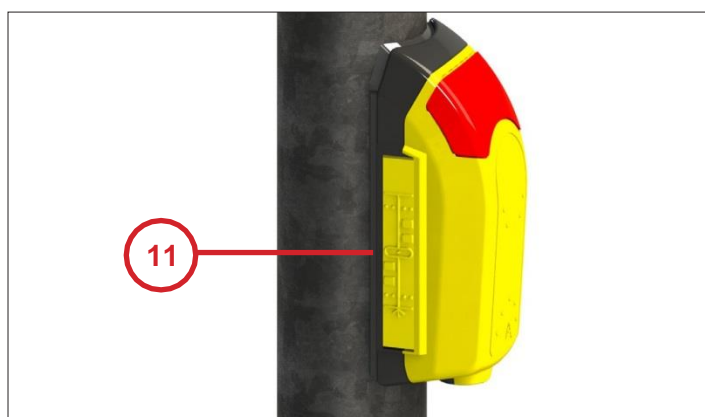


Fig. 20

#### Example of relief symbols

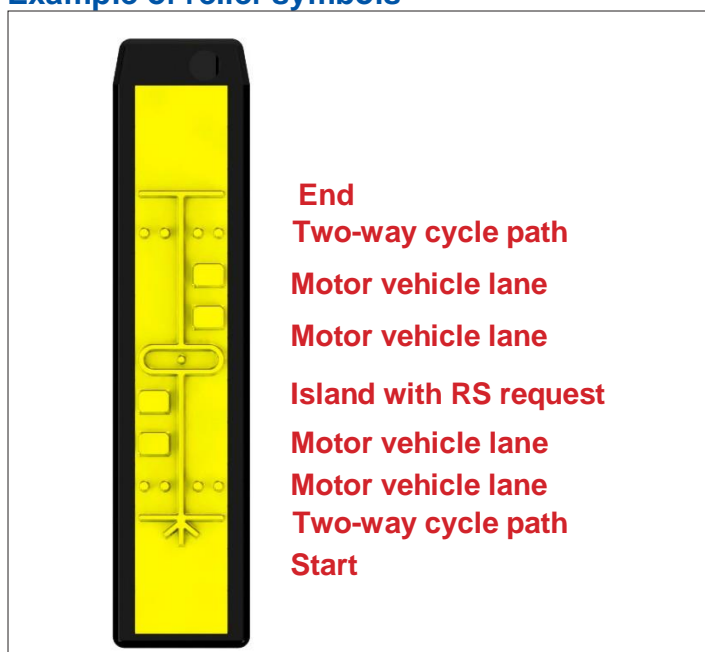


Fig. 21

The signage pockets for the relief symbol inserts (**11**) are on the left and right of the pedestrian signal requesting device for the visually impaired.

- The relief symbol inserts must be positioned in accordance with ÖNORM V 2100 (Fig. 22).
- Max. 13 relief symbol inserts are used, depending on the type and length of the crossing.
- If not all of them are required, the empty spaces must be filled with blank symbol inserts.
- **Note:** All inserts must be correctly placed so that they do not present an obstruction when fitting the top part of the device.
- Having completed the whole installation, you need to check if the relief symbols correspond with the local circumstances of the lighting signal installation.
- **Note:** If no relief symbols are desired, two blank covers (accessories kit) must be placed in the signage pocket.

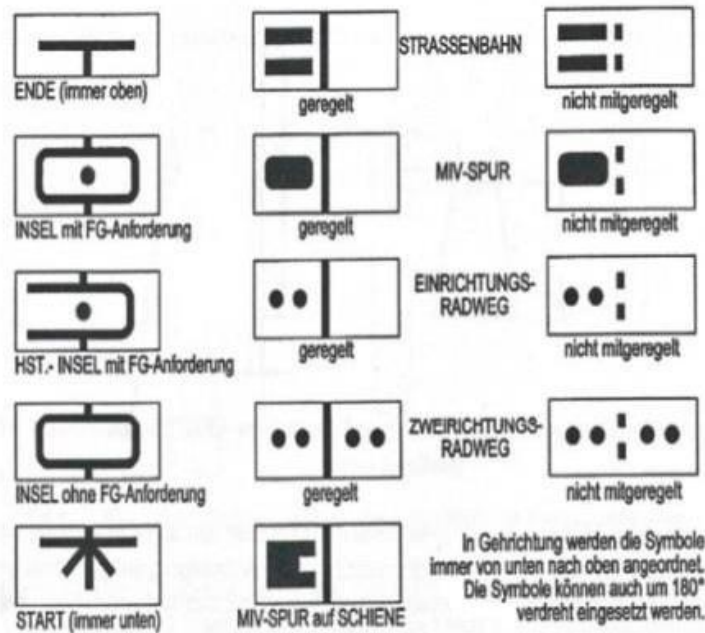


Bild 6 – Symbole für taktile Wegbeschreibungen auf Anmeldetableaus für Fußgänger bei Verkehrslichtsignalanlagen mit akustischen und tastbaren Hilfssignalen

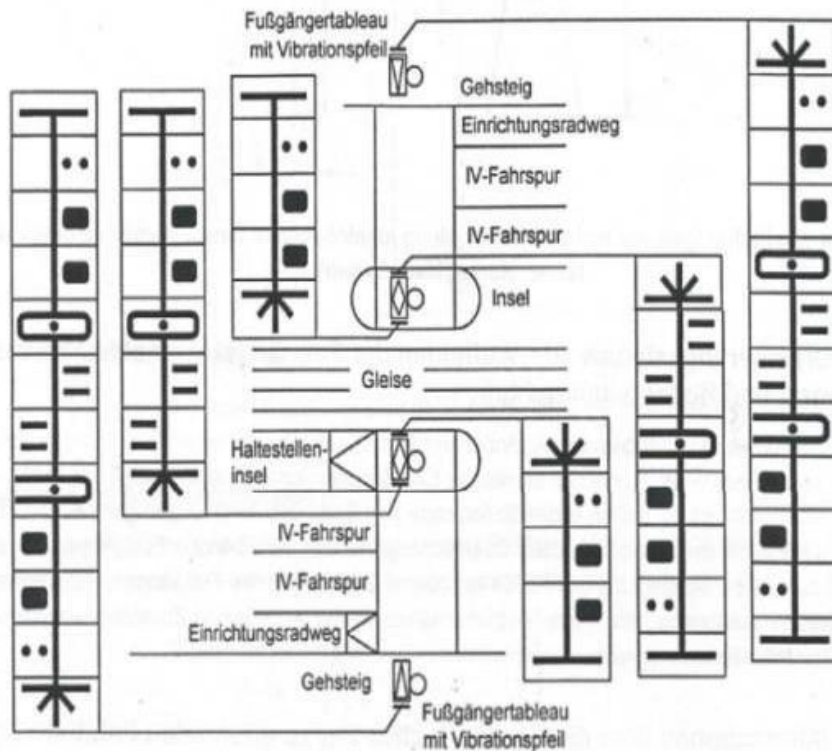


Bild 7 – Beispiel einer taktilen Wegbeschreibung

ANMERKUNG:

Relief-Symbole dürfen zur besseren Orientierung von blinden Menschen auch für andere Zwecke eingesetzt werden, z.B. zur Kennzeichnung von Handläufen, blinklicht- oder tafelfesicherten Schutzwegen, Infopoints u.dgl.

## 7. Set-up and function test

### 7.1 Vibrator and vibrator push-button

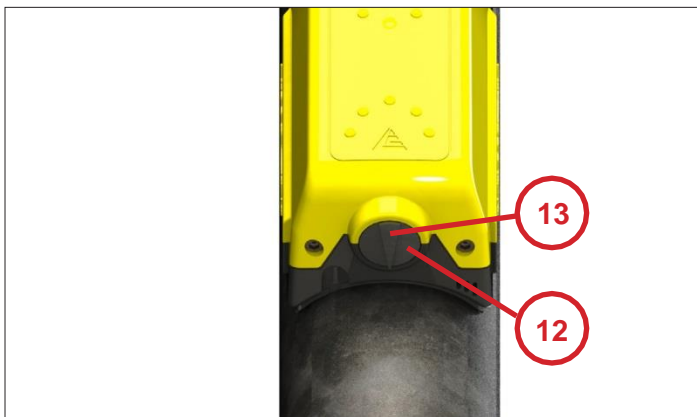


Fig. 23

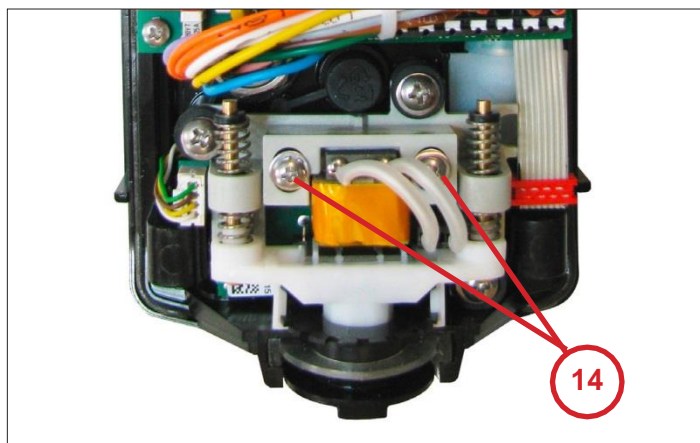


Fig. 24

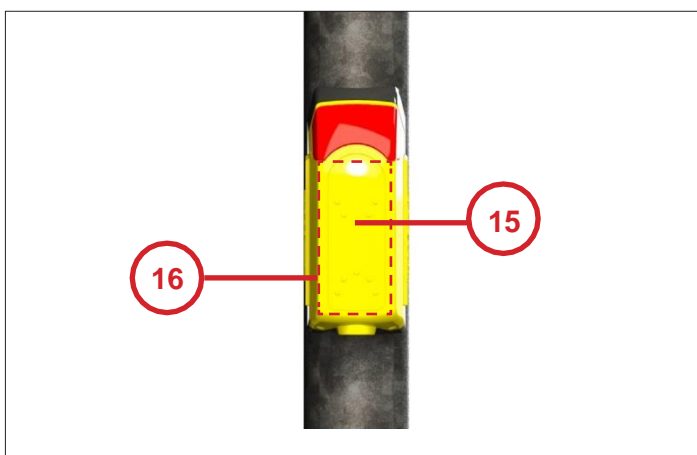


Fig. 25

- It is essential to check that the vibrator push-button (12) is working correctly.
- It must be possible to request a signal in every position on the vibrator push-button.
- While the signal is enabled, vibration on the crossing symbol (13) must be clearly palpable.
- The vibration must not cause any kind of humming.
- If it is necessary to adjust the vibrator, proceed as follows:

- Remove the top part of the device (3) as described in Fig. 14.
- Loosen the 2 Phillips head screws (14) to set the vibration strength.
- For stronger vibration, reduce the gap between the armature and the coil.
- For weaker vibration, increase the gap between the armature and the coil.
- Check that the vibrator seal fits and refit the top part of the device Fig. 18).

#### Optional:

##### Requesting a signal with the "LARGE-SURFACE PUSH-BUTTON"

- Test function by actuating the large-surface push-button (15).
- There are 2 microswitches integrated into the top and bottom sections of the large-surface push-button.

##### Requesting a signal with the "SENSOR"

- Test function by actuating the sensor surface (16).
- The sensor must trigger a signal request when the hand is approximately 3 mm from the contact surface. The sensor cannot be adjusted.

## 7.2 Optical feedback

- According to the setting, the optical feedback (e.g. "Wait for signal") can be switched on either by a signal request on the EK 533 plus or from the crossing control unit.

## 7.3 Sound test

- After installing the pedestrian signal requesting device for the visually impaired, a sound test must be conducted.
- The volume setting for the sounds must be adjusted to the local surroundings. For example, you need to take account of the crossing length and adjacent buildings. (See Pages 30-31, "Volume" group).
- A release signal must sound on green
- Exception: When switched off by cgManager

If one or more of the above functions is not working properly, check the device settings with cgManager.

## 8. Maintenance

- The signal requesting devices must be maintained at regular intervals. When doing so, proceed as follows:
- External visual inspection:  
Check the device for external dirt and damage. **Note:** Do not use abrasive cleaning agents or solvents to clean the housing!
- Checking the crossing symbol (6). The correct direction must be set for the crossing concerned.
- Carrying out a full function test. If anything on the signal requesting device appears to be defective, it must be returned to Langmatz GmbH with a description of the fault.



## 9. Parametrisation

cgManager (cgManager version 4.17.50.0)

### Abbreviations

PB: Large-surface push-button

S: Large-surface sensor

VPB: Vibrator push-button

RTC: Real-time clock

APB: Acknowledgement by push-button

APBI: Acknowledgement by push-button or input

iAPB: Inverted APB

APBS: Acknowledgement by push-button and signal system

### cgManager system requirements

- 1 GHz processor
- 1 GB RAM
- Screen resolution 1024 x 768

Supported operating systems:

- Windows XP SP2 or SP3
- Windows Vista SP1 or SP2
- Windows 7
- Windows 8
- Windows 10

### Installing and starting cgManager

**Note:** The person installing the software needs administrator access rights on the computer.

- Insert the installation CD.
- Start "installer\_V4.x.exe" and follow the instructions.
- After installation, there will be a link to cgManager on the desktop and in the "Langmatz" sub-menu within the Start menu. This shortcut is used to start the parametrisation software after entering the password.

### Establishing a connection with a Langmatz EK 533 plus 2.0

There are three ways to connect to a Langmatz EK 533 plus using cgManager:

- A serial cable (CrossCom RS232, item no. 125330996)
- A USB cable (CrossCom USB, item no. 125330989S)
- Bluetooth (CrossCom Bluetooth, item no. 125330998)

### Establishing the connection

#### 1) CrossCom RS232

**a.** Connect the CrossCom RS232 cable to the Langmatz EK 533 plus and an available RS232 interface on the PC.

**b.** Start cgManager.

If the connected Langmatz EK 533 plus device is switched on, the corresponding COM interface is automatically selected and the connection established. If this is not the case, the interface must be specified manually (see: "Selecting the interface").



## 2) CrossCom USB

- a. Make sure that cgManager has not started.
- b. Plug the connector into the Langmatz EK 533 plus 2.0.
- c. Connect the USB connection to your PC.
- d. If you are using the cable for the first time on this PC, Windows will now attempt to install the USB-to-RS232 driver. If Windows prompts you to specify the path to the driver, insert the driver CD and select it.
- e. Once you have completed the driver installation, you can start cgManager.
- f. Select the correct interface.

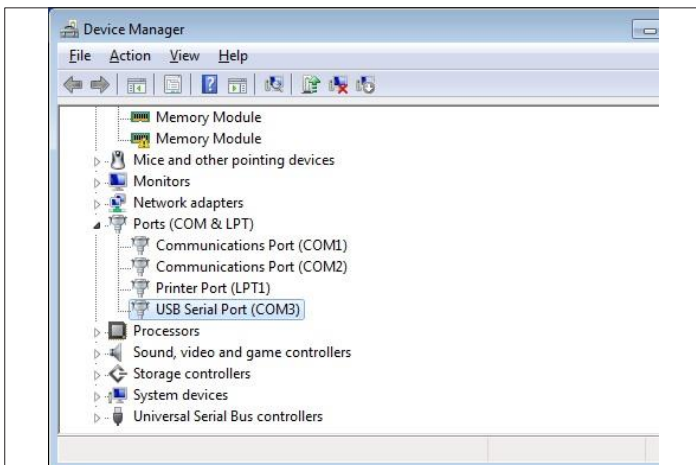


Fig. 26

### Notes

- Installing the driver may require administrator access rights.
- You can use the Windows Device Manager to check which Windows COM interface the driver has been assigned to.
- If the USB cable is unplugged while cgManager is still active, you will need to restart it in order to establish a connection.
- If the USB port on the PC is changed, the interface needs to be re-selected as it has been assigned a different number by Windows.

## 3) CrossCom Bluetooth

- a. Make sure that cgManager has not started.
- b. Connect the CrossCom Bluetooth connector to the EK 533 plus 2.0 device.
- c. Connect the CrossCom Bluetooth USB stick (item no. 125330999) to the PC (see notes!).
- d. If the USB stick is being connected to the PC for the first time, Windows will attempt to install the appropriate driver. If Windows prompts you to specify the path to the driver, insert the driver CD and select it.
- e. Once you have completed the driver installation, you can start cgManager.
- f. Select the correct interface.

### Notes

- Installing the driver may require administrator access rights.
- Generally speaking, you will not need to install the driver or use the external Bluetooth USB stick if the PC already has a Bluetooth module installed.
- To prevent connection issues, ensure that the PC and the Langmatz EK 533 plus 2.0 are as close to each other as possible.
- If your connection is poor, opening the "Parameters" form in cgManager may return an error. If this is the case, try reopening the form.
- Once the "Parameters" form is open, we recommend that you click the "Read" button again to prevent synchronisation problems (cgManager - Langmatz EK 533 plus 2.0).

## Selecting the interface

For all three methods, the correct interface must be entered in cgManager. To do this, select "Preferences" and then "Interface" or double-click on the interface pane in the status bar.

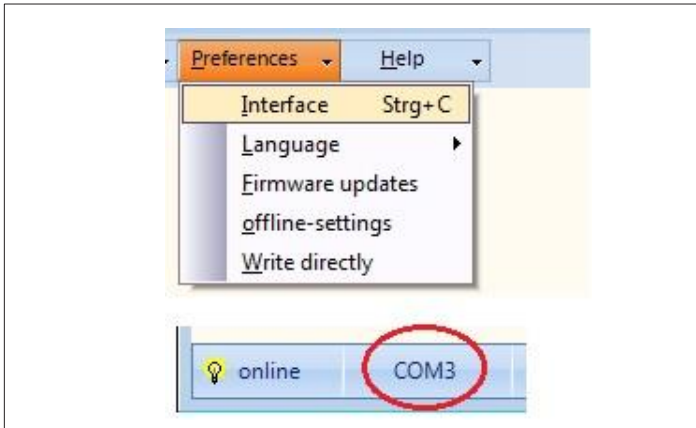


Fig. 27

- In the open form, select the interface you want to use to connect to the EK 533 plus 2.0 ("COM X" or "Bluetooth").
- Close the form by clicking the OK button.
- Alternatively, the button "COM scan" can be clicked on.
- This searches for and selects the appropriate COM interface. The device must be connected to a CrossCom RS232 or CrossCom USB in order to do this.

**Note:** As explained above, if you are unsure which interface to select, check in the Windows Device Manager.

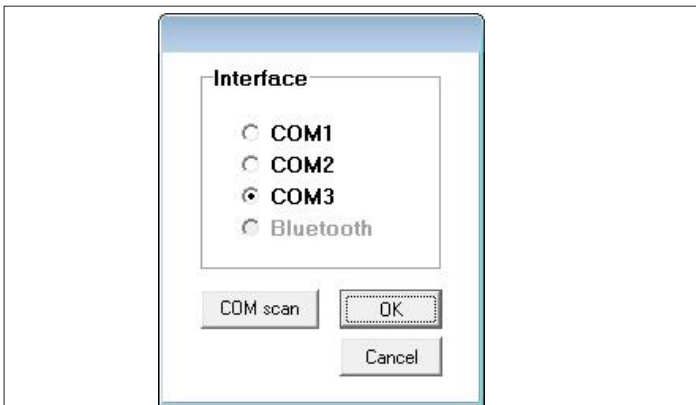


Fig. 28

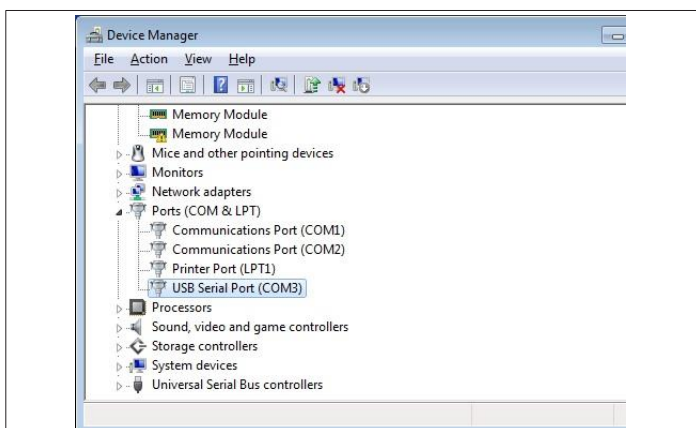


Fig. 29

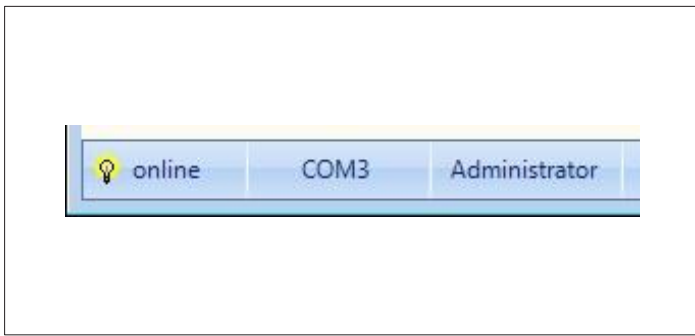


Fig. 30

- After closing the form, you will see a yellow light bulb symbol and the text "online". This indicates that you have connected successfully.

## Firmware updates

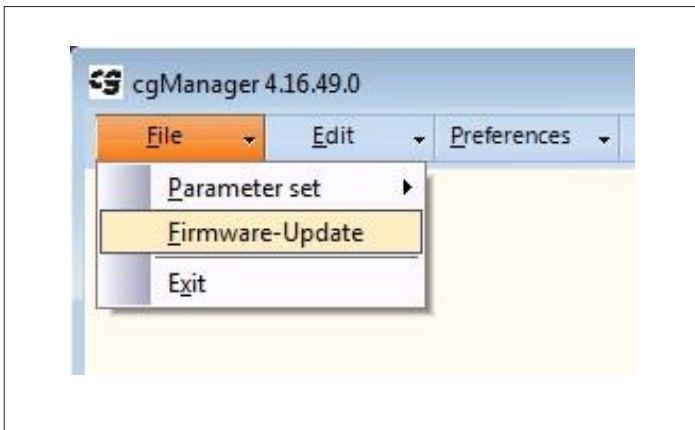


Fig. 31

Updating the Langmatz EK 533 plus 2.0:

- In the "File" menu, click "Firmware-Update".
- In the dialogue box that opens, select the file containing the new firmware (file ending .EK 533p).
- Click "Open" and the update will start.

## Creating and editing sound sequences

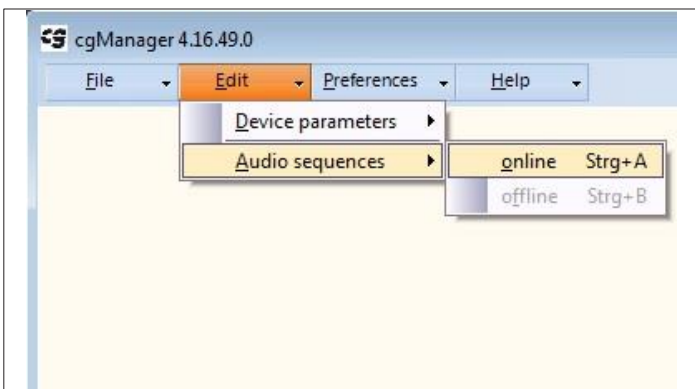


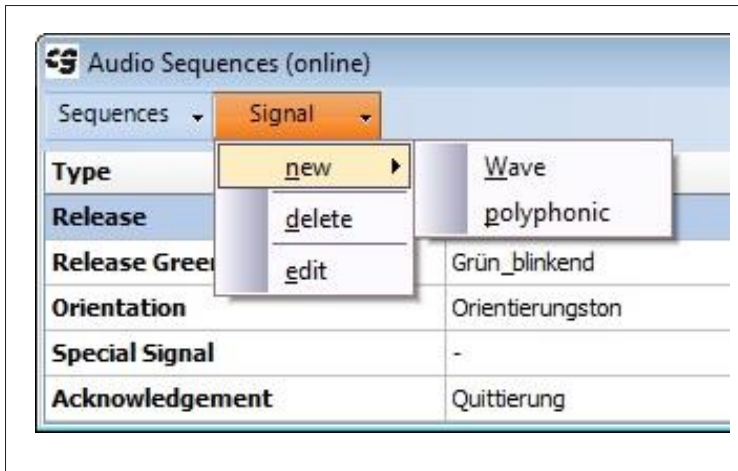
Fig. 32

- To edit the sounds of an EK 533 plus 2.0, select "Edit" --> "Audio sequences" --> "online".
- In the open "Audio Sequences (online)" form, you can create, edit, play and delete sounds (polyphonic sounds and wave files).

Type	Name	Signal/ms	Pause/ms	Increase	Default sound
Release	Freigabesignal	250	250	0 dB	1 2
Release Green Flashing	Grün_blinkend	100	100	0 dB	
Orientation	Orientierungston	50	783	0 dB	1 2
Special Signal	-	-	-	-	
Acknowledgement	Quittierung	200	2000	0 dB	

Fig. 33

## Creating new sounds



- You can transmit wave files from the PC to the Langmatz EK 533 plus 2.0 or define new sounds using the "Signal" -> "new" -> "Wave" sub-menu or "polyphonic" sub-menu, respectively.
- The new sound is always assigned to the signal which is highlighted in the table. In the case of Fig. 33 (on Page 23), this would be the "Release" signal, for example.

Fig. 34

### 1) Wave files

- Clicking "Signal" -> "new" -> "Wave" opens a selection dialog box.
- Here, select the wave file you wish to transmit to the device.
- The system supports 8- and 16-bit wave files.

In theory, the device contains enough memory for approx. 90 seconds of wave files for all signals.

"Audacity" is a recommended program for editing wave files: you can download it for free at <http://www.audacityteam.org/>.

**Note:** Before wave files are transmitted to the EK 533 plus 2.0, they are filtered based on whether they are for release, flashing release or orientation. This is to protect the speakers. Filtering sometimes slightly reduces the tone quality of the sound emitted by the device compared with playing it on the PC.

**Caution:** For safety reasons, wave files should not be used for the orientation signal!

### 2) Polyphonic sounds

- Clicking on "Signal" -> "new" -> "polyphonic" opens the sound sequence editor (see Fig. 34).
- This is where a sound is assigned to a signal type. ("Sequence properties" – "Type")
- Each line describes a sound which can be used to compile the overall sound. For example, this might be a single sound or a base sound with inharmonics.

A sound is always a combination of pulses and pauses.

To define the pulse, set green markers (see Fig. 35 on Page 25) with the last marker defining the overall length of the pulse.

## The other individual parameters are:

- a. "Frequency in Hz": Indicates the frequency (pitch) of the sound; permissible range: 800 Hz - 5000 Hz. To comply with DIN 32981, the frequency must be within a range of 880 Hz +/- 50 Hz.
- b. "Amplitude": Indicates the volume from 0 - 100
- c. "Type": Assigns the sound to a signal (e.g. orientation signal, release signal, etc.)
- d. "Name": Optional name for the sound
- e. "Pause": Pause in ms between two sound pulses
- f. "Increase": The value by which the sound is adjusted relative to the ambient volume.

### Example:

The following (active) sound, and therefore its pulse-pause ratio and repetition interval, is defined in Fig. 35:

- Orientation sound at 880 Hz and an amplitude/volume of 100, no increase relative to the ambient volume
- Tone output (i.e. pulse) of 0 ms to 50 ms, 100 ms to 150 ms and 350 ms to 600 ms (cf. green markings)
- The overall pulse duration is therefore set at 600 ms (see last green marker)
- Pause of 1000 ms (= 1 s)
- The overall sound duration (pulse and pause) is therefore 1600 ms (600 ms sound plus 1000 ms pause) or 1.6 s
- The repetition interval of the sound is therefore  $1/1.6 \text{ s} = 0.625 \text{ Hz}$  at a pulse-pause ratio of 0.6:1

Once the configuration of a sound is complete for a certain signal type, it can be played back as a sample on the PC by clicking on the "Play" button.

To transmit the finished sound to the Langmatz EK 533 plus, complete the process by clicking "Upload to EK 533 plus".

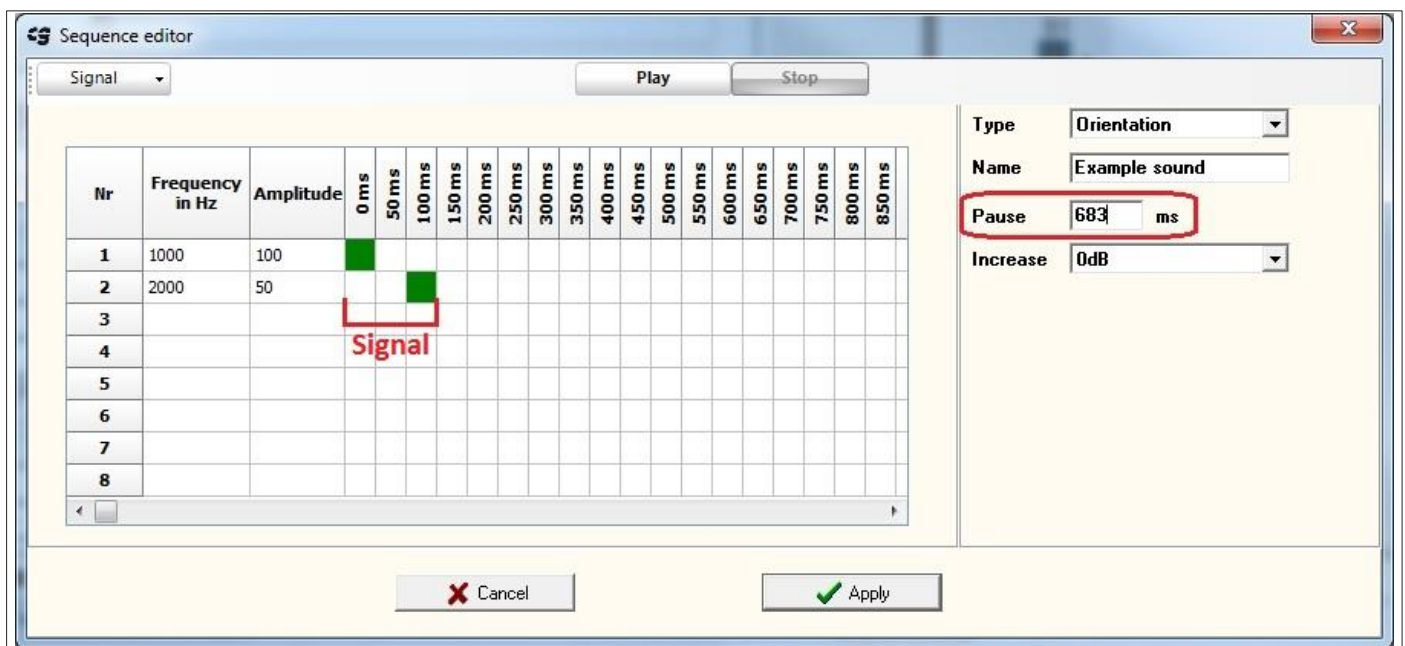
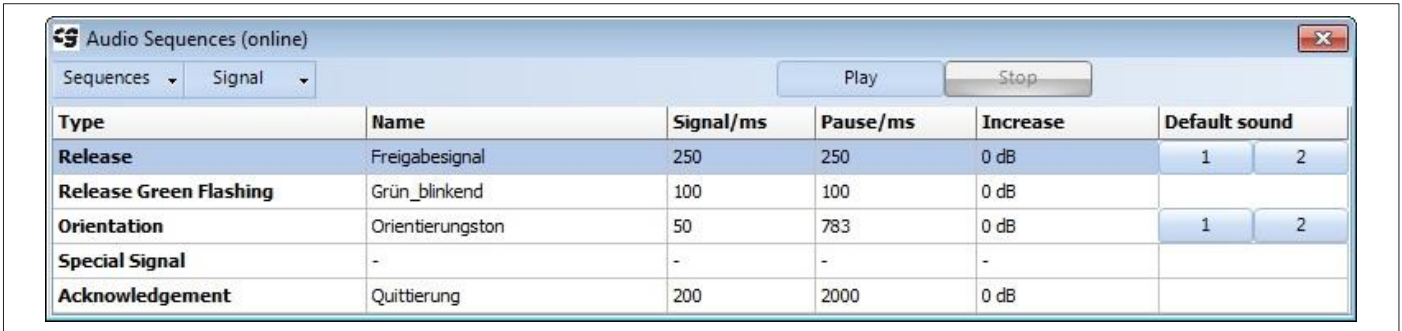


Fig. 35

## Editing existing sounds

Sounds already present in the Langmatz EK 533 plus 2.0 can be edited in the "Audio Sequences (online)" form.



The screenshot shows a window titled "Audio Sequences (online)" with a "Sequences" dropdown set to "Signal". Below the dropdown are "Play" and "Stop" buttons. A table lists various sound types with their respective parameters.

Type	Name	Signal/ms	Pause/ms	Increase	Default sound
Release	Freigabesignal	250	250	0 dB	1 2
Release Green Flashing	Grün_blinkend	100	100	0 dB	
Orientation	Orientierungston	50	783	0 dB	1 2
Special Signal	-	-	-	-	
Acknowledgement	Quittierung	200	2000	0 dB	

Fig. 36

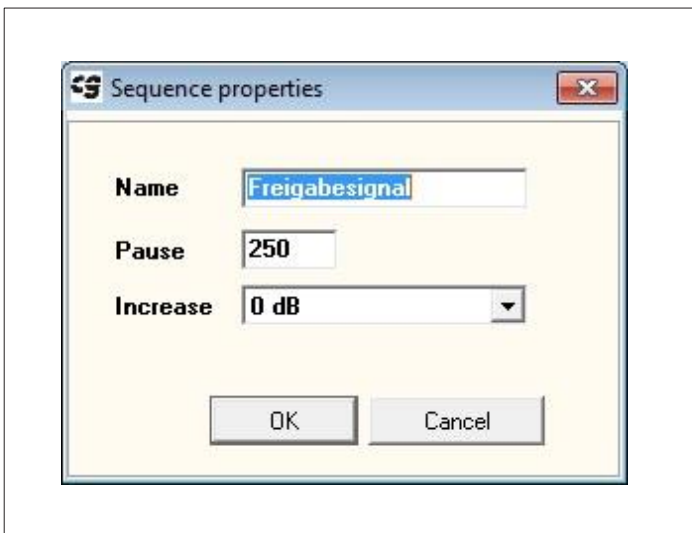


Fig. 37

- To do this, mark the desired sound in the list by clicking on it and then select "Signal" -> "edit". Alternatively, you can open the sound for editing by double-clicking on it.
- In the opened "Sequence properties" form, the properties "Name", "Pause" and "Increase" can now be modified.

## Deleting sounds

You can delete sounds from the Langmatz EK 533 plus 2.0 in the "Audio Sequences (online)" form by selecting "Signal" -> "delete". You first need to mark the sound you want to delete by clicking on it in the table. Alternatively, you can delete a sound with the Delete button.

## Playing sounds

You can reproduce existing sounds from the EK 533 plus 2.0 on your PC in the "Audio Sequences (online)" form. Mark the desired sound in the list by clicking on it and then click "Play". Clicking "Stop" stops playback on the PC.

## Default sounds

Default release and orientation sounds can be transmitted to the device without the need to create them using the sequence editor. There are up to eight default sounds for each of the two signals, each of which can be copied to the EK 533 plus by clicking on button "1a" to "4b" or "1" to "4" respectively.



## Online parametrisation of the Langmatz EK 533 plus 2.0

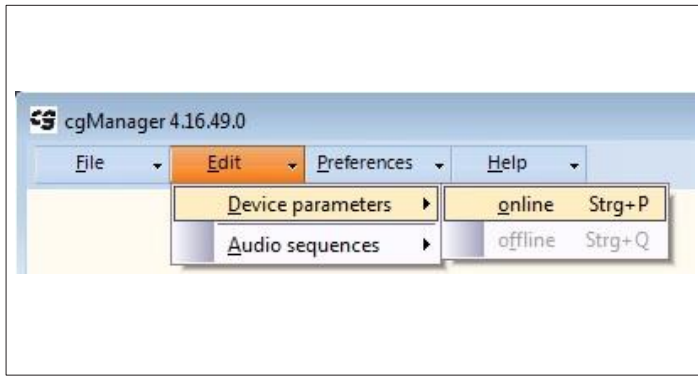


Fig. 38

To parametrise a Langmatz EK 533 plus 2.0 device using cgManager:

- In the "Edit" menu, click on the "Device parameters" entry and then click "online".  
This reads out all EK 533 plus 2.0 devices and displays them in the opened "Device parameters" form.
- If you edit one or more parameters, this will be flagged with a red marker.
- To transmit the change(s) to the Langmatz EK 533 plus 2.0, click "Write". The red markers will disappear once the parameters have been transmitted.
- Alternatively, you can select the "Write directly" option in the "Preferences" menu, which will immediately transmit the modified parameters to the device so that you need not click "Write".
- Click the "Read" button to read out the Langmatz EK 533 plus parameters at any time.
- This will list all parameters along with their meaning and setting options.

## "Sounds" tab

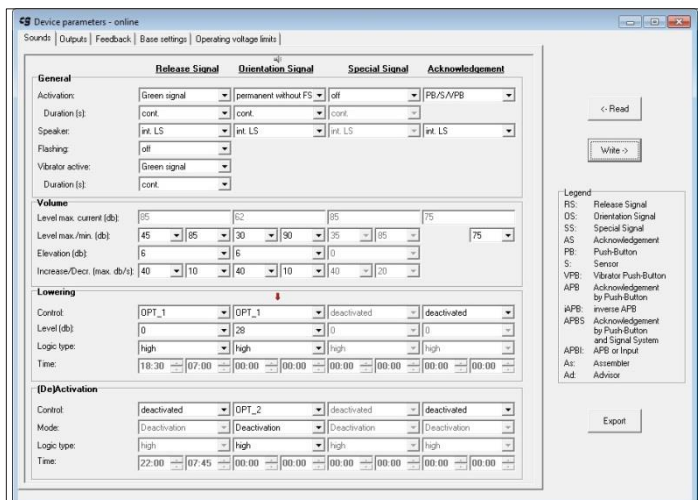


Fig. 39

In this tab, you can configure the individual sounds.

## "General" group

	Release Signal	Orientation Signal	Special Signal	Acknowledgement
<b>General</b>				
Activation:	Green signal	permanent without FS	off	PB/S/V/PB
Duration (s):	cont.	cont.	cont.	
Speaker:	int. LS	int. LS	int. LS	int. LS
Flashing:	off			
Vibrator active:	Green signal			
Duration (s):	cont.			

- This parameter group determines the general response of the sound in question.

Fig. 40

### Activation – release signal:

Specifies how the release signal is activated. The following options are available:

- off: The release signal is deactivated and does not play.
- Green signal: The release signal sounds if the device is displaying the green signal.
- Network: The release signal sounds if the device is networked and displaying the green signal (cf. "Networking", Page 36).
- PB/S: The release signal sounds if the device is displaying the green signal and the push-button or sensor is activated during the preceding red or green phase.
- VPB: The release signal sounds if the device is displaying the green signal and the vibrator push-button is activated during the preceding red or green phase.
- PB/S/VPB: The release signal sounds if the device is displaying the green signal and the push-button, sensor or vibrator push-button has been activated during the preceding red or green phase.

### Activation – orientation signal:

Specifies how the orientation signal is activated. The following options are available:

- off: The orientation signal is deactivated and does not play.
- Permanent without RS: The orientation signal always sounds, without the need for a red signal. When the signal changes to green, the orientation sound stops.
- Permanent with RS: The orientation signal always sounds, without the need for a red signal. When the signal changes to green, the orientation sound continues. If there is an active release signal, both sounds are played at the same time.
- Another option for activating the orientation sound is a red function on cable 14 (optional input 3). As an option, this cable can be used as a red input. Where this is the case, the orientation sound only plays when the red input is activated in a red phase.
- For the appropriate change, see section ["Special function of optional control input 3" \(p. 41\)](#)

### Activation – special signal:

Specifies how the special signal is activated. The following options are available:

- off: The special signal is deactivated and does not play.
- Opt. 1, Opt. 2, Opt. 3: The special signal plays when there is a signal on the specified optional input.

## Activation – acknowledgement signal:

Specifies how the acknowledgement signal is activated. The following options are available:

- off: The acknowledgement signal is deactivated and does not sound.
- PB/S: The acknowledgement signal sounds if the large-surface push-button is pressed or the large-surface sensor is actuated during the red phase.
- VPB: The acknowledgement signal sounds if the vibrator push-button is pressed during the red phase.
- PB/S/VPB: The acknowledgement signal sounds if the large-surface push-button, large-surface sensor or the vibrator push-button is actuated during the red phase.

## Duration (s):

You can use this selection box to specify whether the relevant signal or the vibrator is actuated continuously – "cont." (default) – or for 1 to 60 seconds.

The activation conditions above still apply. This means, for instance, that to play the orientation signal on the "Red signal" setting, the red signal must be present as described and the sound is only played for the duration of the signal. If you set a duration of 50 s but the red signal is only present for 30 s, then the sound will only play for 30 s as well.

## Speakers:

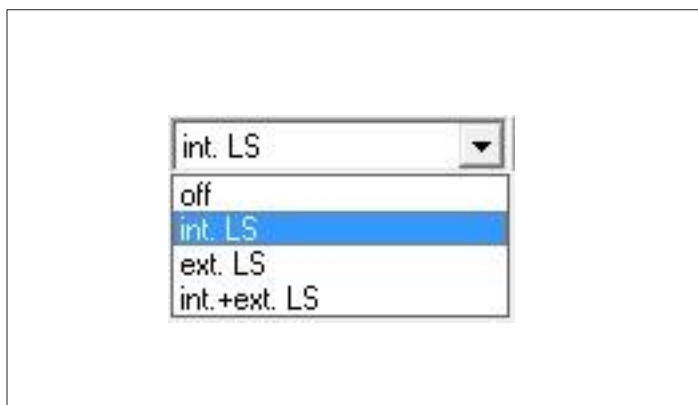


Fig. 41

Specifies which speaker is used for the signal output:

- "external 1": The signal sounds on the 1st external speaker of the EK 533 plus 2.0.
- "external 2": The signal sounds on the 2nd external speaker of the EK 533 plus 2.0.
- "both": The signal sounds both on the 1st external speaker and on the 2nd external speaker of the EK 533 plus 2.0.

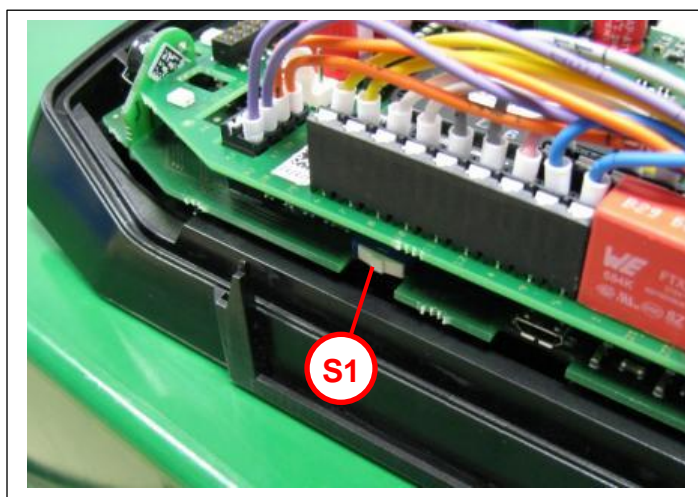


Fig. 42

- There is an option to add the internal speaker to the 2nd external speaker.
- To do so, switch "S1" is pushed downwards (as-delivered condition).

## Green flashing

Switches green flashing "on" or "off". When the green flashing function is activated, a green flashing sound must also be present in the Langmatz EK 533 plus 2.0. (You can check this using the "Edit" -> "Audio sequences" -> "online" menu.)

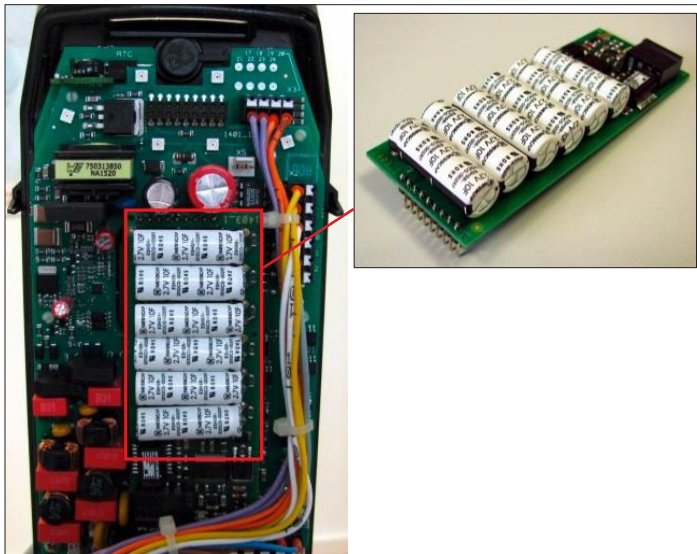


Fig. 43

- RGF mode requires a Goldcap buffer PCB. This is available as an option or can be retrofitted. Item no. 125330825.

## "Volume" group

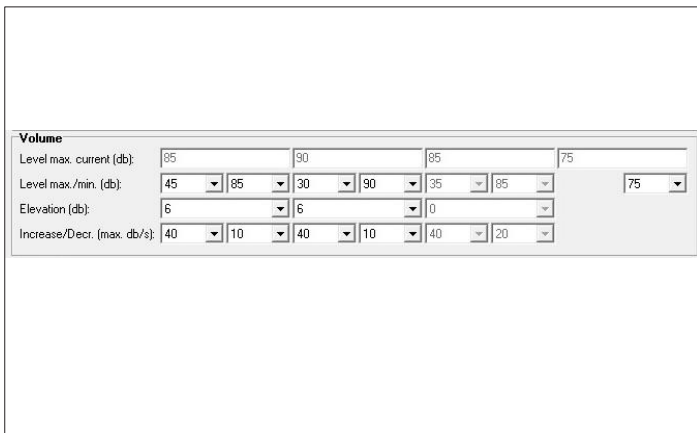


Fig. 44

This parameter group determines the volume and dynamics of the sound in question.

### Current max. level (dB)

- This is purely a display parameter; it cannot be changed by the user. It indicates the current maximum level based on whether any restrictions have been set.
- In daytime mode, the value is always the same as that of the "Level max. (dB)" parameter. In night-time mode, it is the reduced maximum level, which is "Level max. (dB)" minus "Level (dB)".
- Example: Night-time reduction active, "Level max. (dB)" at 85 and reduction "Level (dB)" at 35. This reduces the "Level max. current (dB)" to 50, i.e. 85 dB reduced by 35 dB.

### Level min. (dB)

- The minimum level sets the lower signal volume limit within a range of 30 to 85 dB.

### The following restrictions apply:

- The minimum level can never be higher than the maximum level.
- "Level max. (dB)" minus reduction "Level (dB)" can never be lower than "Level min. (dB)". Otherwise, this can result in invalid values with night-time reduction active.

### Level max. (dB)

- The maximum level sets the upper signal volume limit within a range of 35 to 90 dB.

### The following restrictions apply:

- The maximum level can never be lower than the minimum level.
- "Level max. (dB)" minus reduction "Level (dB)" can never be lower than "Level min. (dB)". Otherwise, this can result in invalid values with night-time reduction active.

### Elevation (dB)

- Elevation specifies the dynamic level of the sound above which the sound is audible over ambient noise. For example, with an ambient volume of 65 dB and a set elevation of 10 dB, the volume of the signal will be 75 dB.
- Restriction: This value can only be set if the values for "Level min. (dB)" and "Level max. (dB)" are different. If they are the same, the sound is static.

### Increase (max. dB/s)

- Sets the speed at which the sound follows the level of traffic noise.
- Restriction: This value can only be set if the values for "Level min. (dB)" and "Level max. (dB)" are different. If they are the same, the sound is static.

### Decrease (max. dB/s)

- Sets the speed at which the sound decays as traffic noise decreases.
- Restriction: This value can only be set if the values for "Level min. (dB)" and "Level max. (dB)" are different. If they are the same, the sound is static.

## "Lowering" group

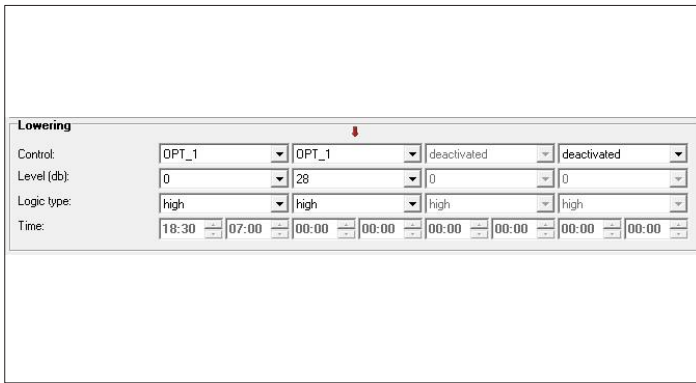


Fig. 45

- This parameter group determines the night-time reduction of the relevant sound, i.e. whether and how much a sound's volume is reduced.

## Control



Fig. 46

Specifies how the reduction is controlled:

- **"deactivated"**: No reduction
- **Opt. 1**: The sound is reduced using optional input 1.
- **Opt. 2**: The sound is reduced using optional input 2.
- **Opt. 3**: The sound is reduced using optional input 3.
- **"time controlled"**: The RTC controls the reduction.

### Notes

- If the Langmatz EK 533 plus 2.0 has no built-in RTC, this option is not available.
- Do not use the same optional input for the sound for night-time sound reduction and (de)activation (e.g. do not use "Opt. 1" to control the reduction and also (de)activation on release signal).

## Level (dB)

- Sets the reduction from 0 to 55 dB. When night-time reduction is active, this value is deducted from the maximum level; see "Level max. current (dB)" parameter for the currently applicable maximum level.
- **The following restrictions apply:**  
This value can only be set if an optional input has been selected for "Input". (In other words, "inactive" is not selected here.)  
"Level max. (dB)" minus reduction "Level (dB)" cannot be lower than "Level min. (dB)", otherwise an active night-time reduction could result in invalid values.



## Logic type

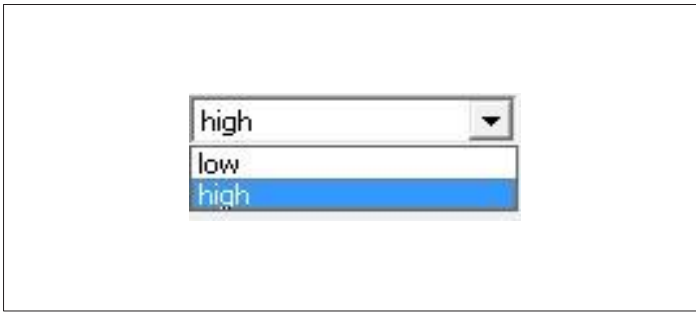


Fig. 47

- Setting option "low" or "high" based on the required logic for the optional input.
- Restriction: This value can only be set if an optional input has been selected for "Input". (In other words, "inactive" is not selected here.)

## Time

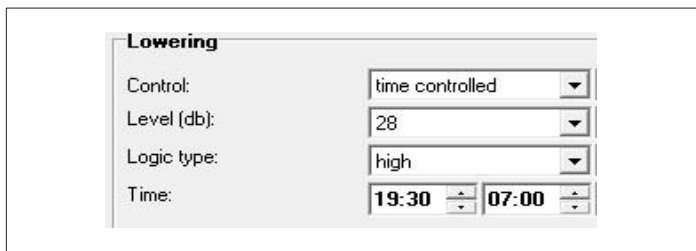


Fig. 48

- Selecting the "time controlled" option in "Control" on an EK 533 plus with RTC allows you to define the period when the sound is to be reduced.

## "(De)Activation" group

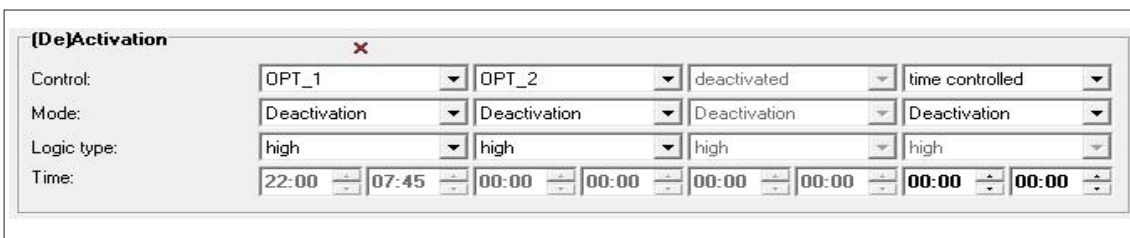


Fig. 49

- This parameter group specifies the additional conditions that may be required to play the sound in question.

## Control

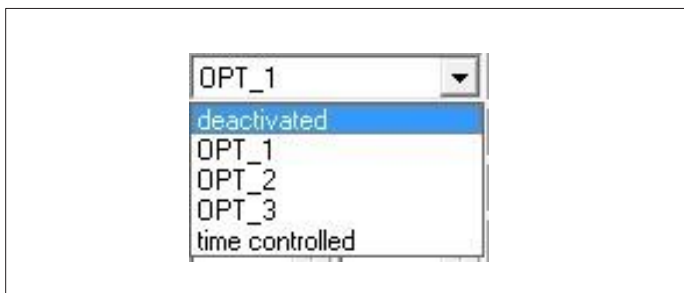


Fig. 50

Specifies how (de)activation is controlled:

- "deactivated": No (de)activation
- Opt. 1: The sound is (de)activated by optional input 1.
- Opt. 2: The sound is (de)activated by optional input 2.
- Opt. 3: The sound is (de)activated by optional input 3.
- "time controlled": The RTC controls (de)activation.

## Notes

- If the Langmatz EK 533 plus 2.0 has no built-in RTC, this option is not available.
- Do not use the same optional input for the sound for night-time sound reduction and (de)activation (e.g. do not use "Opt. 1" to control the reduction and also (de) activation on release signal).

## Mode

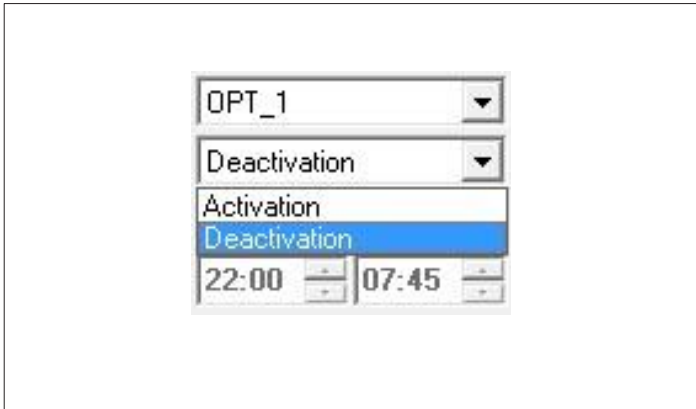


Fig. 51

- This parameter determines whether an optional input (selected under "Input") activates the signal or deactivates it, e.g. for night-time deactivation. In other words, you can expressly specify whether a signal is switched on or off by an optional input.
- If you select "Activation", the actual signal (i.e. red or green) must also be on the optional input selected in order to produce a sound.

## Example 1:

Orientation sound: "Activation" selected under "Mode", "Opt. 1" as an input and "high" under "Logic type". The orientation signal will then sound exactly when the red signal is on the EK 533 and optional input 1 is set to high.

## Logic type

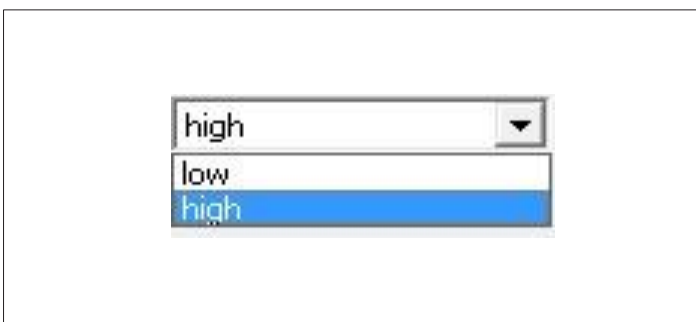


Fig. 52

- Setting option "low" or "high" based on the required logic for the optional input.

## Time

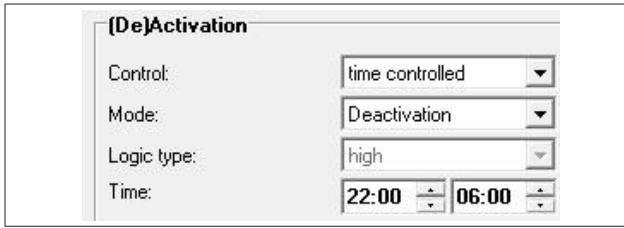


Fig. 53

- Selecting the "time controlled" option in "Control" on a Langmatz EK 533 plus 2.0 fitted with an RTC allows you to define the period when the sound is to be (de)activated.

### Important note:

**The release signal must be activated and deactivated in compliance with DIN 32981. This is carried out by the control unit of the road traffic signal system. If shut-off or reduction is performed by the RTC of the EK533 plus 2.0, the change will only become effective during the next green phase.**

## "Outputs" tab

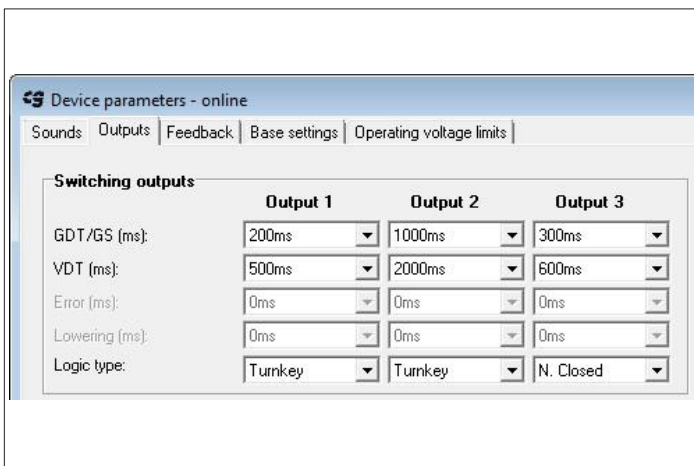


Fig. 54

- In this tab, you can configure the switching outputs.

### PB/S (ms)

- Determines how long a pulse is emitted on the output concerned when the large-surface push-button or large-surface sensor has been pressed.

### VPB (ms)

- Determines how long a pulse is emitted on the output concerned when the vibrator push-button has been pressed.

## Logic type

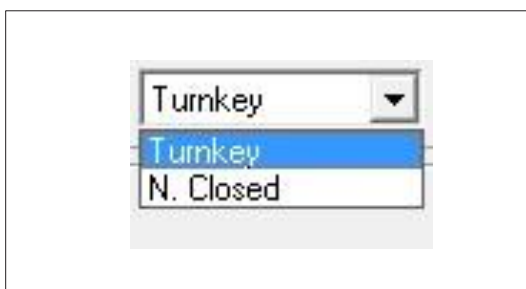


Fig. 55

- "Turnkey"/"N. Closed" setting option based on the required output logic.

## Networking

Switching on the network allows you to connect EK 533 plus 2.0 devices together as shown by the diagram. This activates optical feedback not only on the device on which the green signal is requested, but also on the device connected to it. It also sounds the release signal on all networked devices. This function is required if an installation is retrofitted but the control device does not feature signals for the visually impaired.

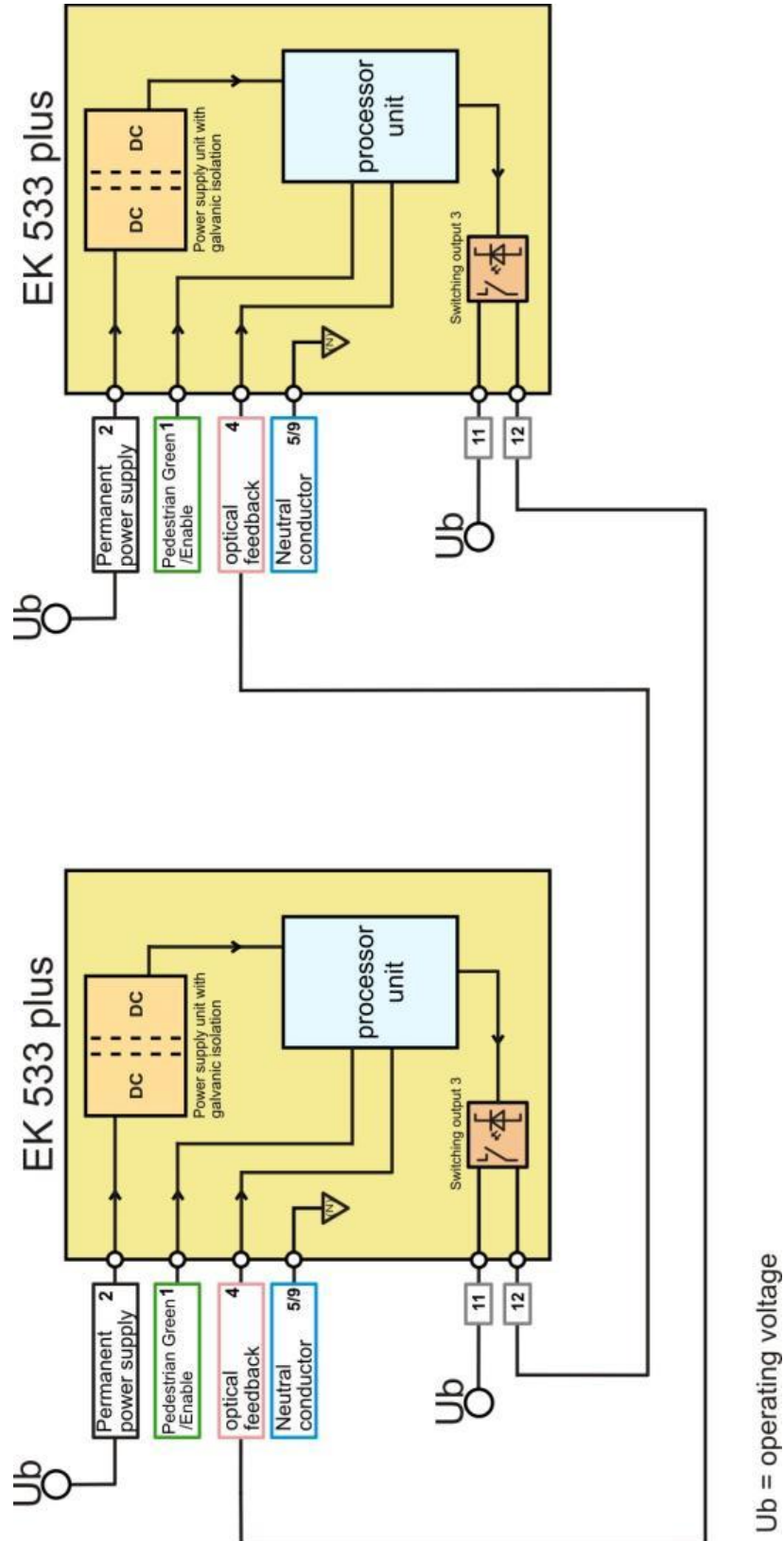


Fig. 56

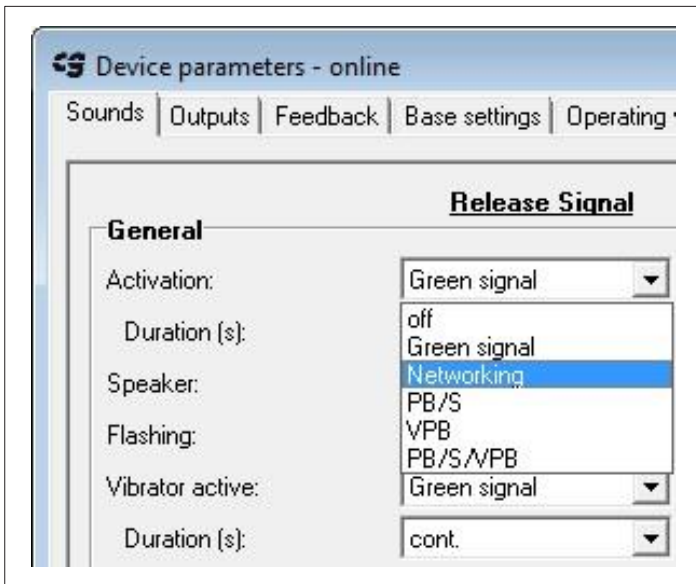


Fig. 57

- To switch on the network, you need to select the relevant release signal activation setting.

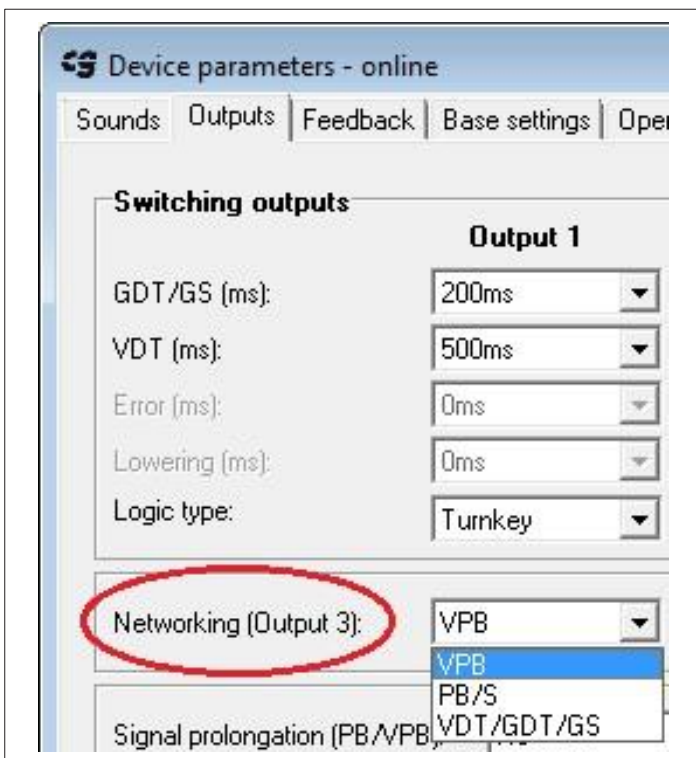


Fig. 58

- Switching output 3 is used for the network.
- When networked and depending on the setting, switching output 3 is activated via the large-surface push-button
  - via the large-surface sensor
  - via the large-surface vibrator
  - or via both.

Example: Selecting "VPB" activates optical feedback on all networked devices during a red phase. The release signal sounds once on the next release after red. Therefore, the release signal will sound exclusively when a request is made by pressing the vibrator push-button.

Where this is concerned, the EK 533 plus 2.0 automatically makes a new request during red when a request is made during green.

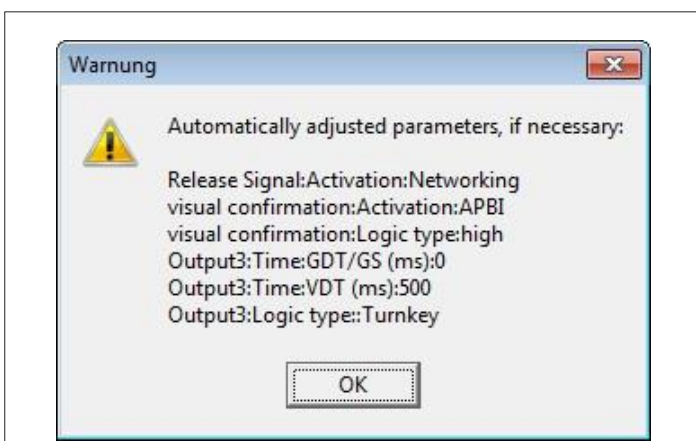


Fig. 59

- To guarantee network functionality, all networked EK 533 plus 2.0 devices must be set to be networked. In addition, a number of parameters are automatically adjusted when network mode is selected:

## Signal prolongation

- If the box is checked, the signal can be emitted from the corresponding output for as long as the respective button (PB/S or VPB) is pressed and held. In other words, this means for longer than is indicated under "PB/S (ms)" or "VPB (ms)" respectively.
- If the box is not checked, the pulse on the output concerned is emitted only for as long as specified under "PB/S (ms)" or "VPB (ms)", even when the button (PB/S or VPB) is pressed and held.

## "Feedback" tab

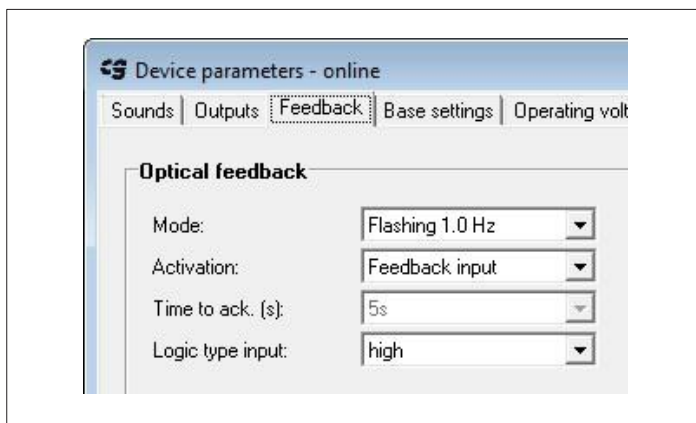


Fig. 60

- This tab is for configuring optical feedback.

### General note:

Optical feedback is triggered by

- pressing the PB/S or VPB (internally produced optical feedback)
- core 4 (produced by the control unit)
- or through networking.



## Mode

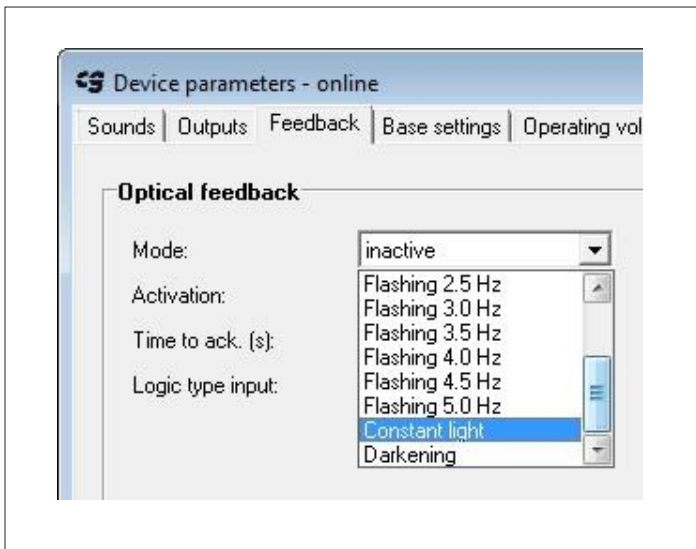


Fig. 61

## Activation

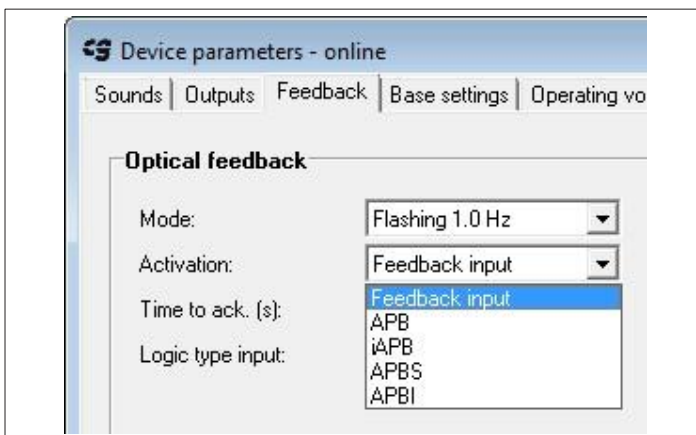


Fig. 62

Determines how optical feedback responds after a request:

- "inactive": No optical feedback.
- "Flashing 0.5 Hz - 5 Hz": Optical feedback takes place at the set flashing interval. Display example: "Wait for signal".
- "Constant light": Optical feedback is a constant light. Display example: "Wait for signal".
- "Darkening": Darkening responds in exactly the opposite way to the constant light. In other words, the starting point is a constant light, which then goes out when the request is made. Display example: "Push button".
- Determines how optical feedback is triggered:
  - "Feedback input": Optical feedback activates as soon as there is a signal on the feedback input at the level set in "Logic type input".
  - **Important:** Set the mode to constant light.
  - "APB": Pressing the PB/S or VPB activates optical feedback (caution: APB may not be selected when "permanent" is selected as the activation input for the orientation signal!).
  - "iAPB": Pressing the PB/S or VPB activates optical feedback. This differs from the normal APB in that the display is inverted.
  - "APBS": Identical to APB, with the difference that a signal with the logic type entered under "Logic type input" must be present for the feedback input within the value entered under "Time to ack. (s)". Otherwise, the feedback will be deactivated.
  - "APBI": Can only be used in combination with the "Networking" option that can be activated under "Outputs".  
A signal on the feedback input or pressing the PB/S or VPB activates optical feedback. In turn, this normally originates from an output of a networked device when "Networking" is in effect (see also section "Networking" (Fig. 59 and Example 4, Page 40).

**Example 1:**

"Mode" is "Flashing 1 Hz" and activation is "APB": When a button is pressed during the red phase, the device starts flashing. It stops flashing when the signal changes to the green phase.

**Example 2:**

"Mode" is "Flashing 1 Hz" and activation is "iAPB": When a button is pressed during the red phase, the device stops flashing. It starts flashing when the signal changes to the green phase.

**Example 3:**

"Mode" is "Flashing 1 Hz", activation is "APBS", "Time to ack. (s)" is "3" and "Logic type input" is "high": When a button is pressed during the red phase, the device starts flashing. If there is a high level on the feedback input within three seconds, the device goes on flashing for as long as that level is sustained. If there is no high level on the feedback input within three seconds, the flashing stops after the three seconds have elapsed. The flashing always stops when the signal changes to the green phase.

**Example 4:**

"Mode" is "Flashing 1 Hz" and activation is "APBI": When a button is pressed during the red phase, the device starts flashing. It stops flashing when the signal changes to the green phase. The device also starts flashing if there is a signal on the feedback input originating from an output of an EK 533 plus connected via networking, for example.

**Time to ack. (s)**

- This determines the time within which the signal system must send the level signal set under "Logic type input" in order to keep optical feedback active on the feedback input when the "APBS" option is selected under "Activation".
- Restriction: Input is only possible if "APBS" is selected under "Activation".

## Logic type input

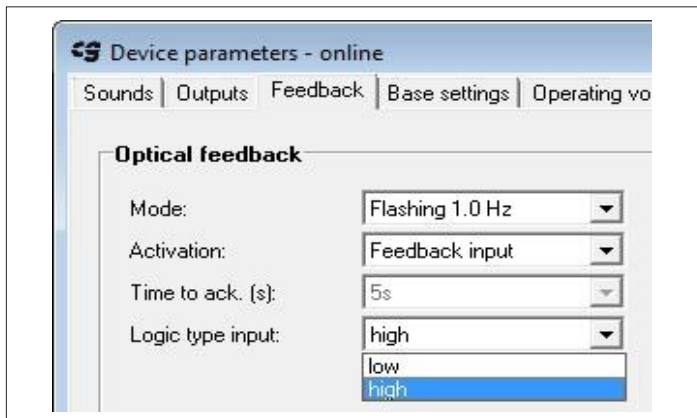


Fig. 63

- This determines the logic type or level which must be on the feedback input in order to keep optical feedback active when "APBS" is selected under "Activation".
- Restriction: Input is only possible if "APBS" is selected under "Activation".

## "Base settings" tab

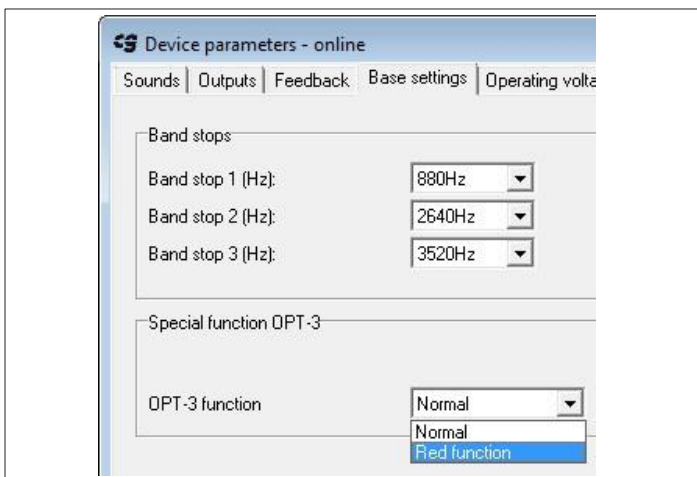


Fig. 64

### Band stop 1|2|3 (Hz)

- This determines the frequencies that the DSP module ignores when determining ambient volume and thus volume control.
- For example, if a polyphonic release signal has been defined using an 880 Hz sine wave, you can also make the setting 880 Hz here (and potentially also for the inharmonics defined for the release signal). Thus, the dynamic volume control ignores the release signal.

## Special function of optional control input 3

With the "Red function" setting, control input 3 (core 14) takes over the function of the red input. This allows the orientation signal to be sounded only when actuated by the red phase, for example.

**General note:** Where there is a permanent supply, control input 3's red function is essential for green flashing mode.

With the "Normal" setting, optional control input 3 is used to actuate night-time reduction or night-time deactivation.

## "Operating voltage limits" tab

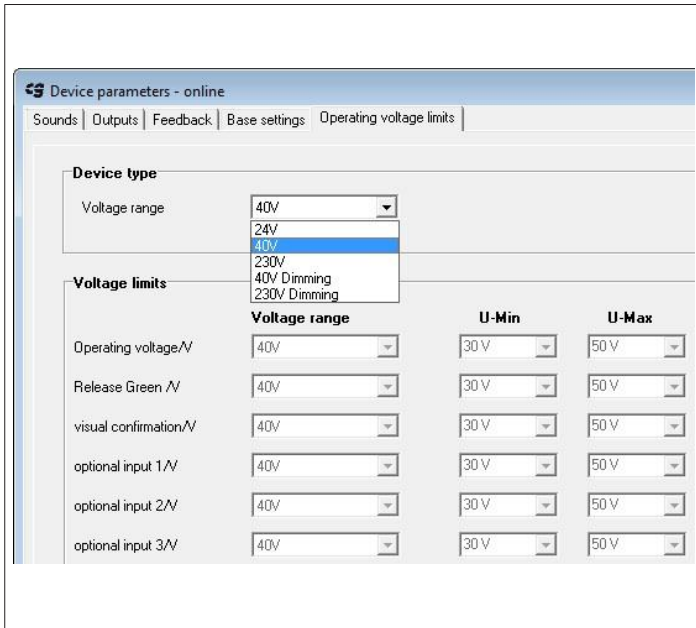


Fig. 65

## Loading and saving configurations

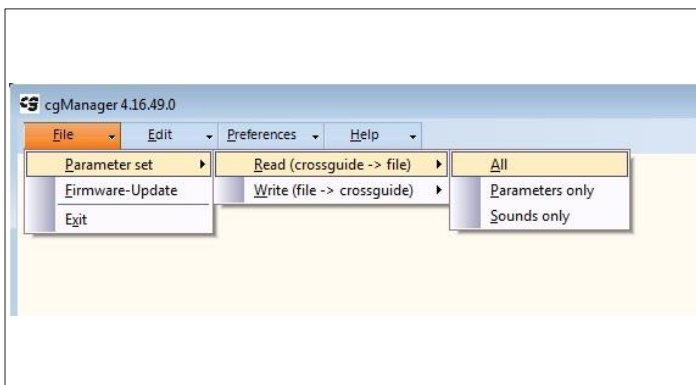


Fig. 66

### Note!

**This process overwrites the entire existing device configuration (sounds and parameters)!**

- This is where you set the voltage ranges for all six inputs.

- EK 533 plus configurations are maintained in files with the file ending ".ek 533p". These contain all settings for the device (parameters and sounds).
- You can transfer existing configuration files from the PC to the EK 533 plus.
- You can create new configuration files by reading out an EK 533 plus.
- To read out the EK 533 plus (save its configuration to a file), make the following selections:
  - "File" - "Parameter set" - "Read (crossguide -> file)".
  - Select and save the required functions.
  - "All"/"Parameters only"/"Sounds only".
  - Enter the desired save location and file name in the dialogue box that appears.
- To transfer existing configuration files to an EK 533 plus, make the following selections: "File" - "Parameter set" - "Write (file -> crossguide)".
- Select the required function.
- "All"/"Parameters only"/"Sounds only".

## Exporting screenshots

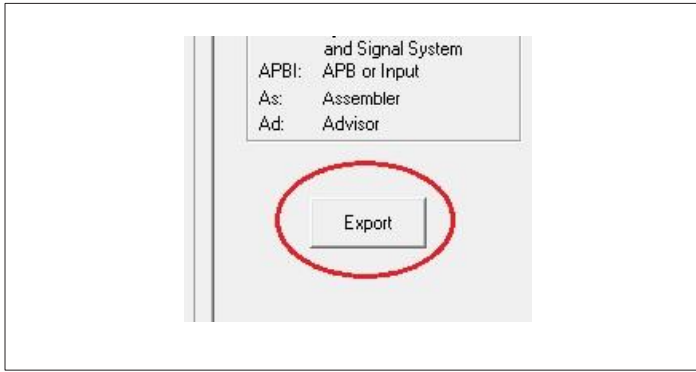


Fig. 67

- The "Export" button in the "Parameters" form allows you to produce automatically generated screenshots of the current parametrisation.
- After clicking on the button, select the directory where you wish to save the bitmaps. Screenshots of the tabs "Sounds" - "Outputs" - "Feedback" - "Base settings" - "Operating voltage limits" are then saved. These are accompanied by screenshots of the "Audio sequences" - "System info" forms.

## Offline parametrisation of the Langmatz EK 533 plus 2.0

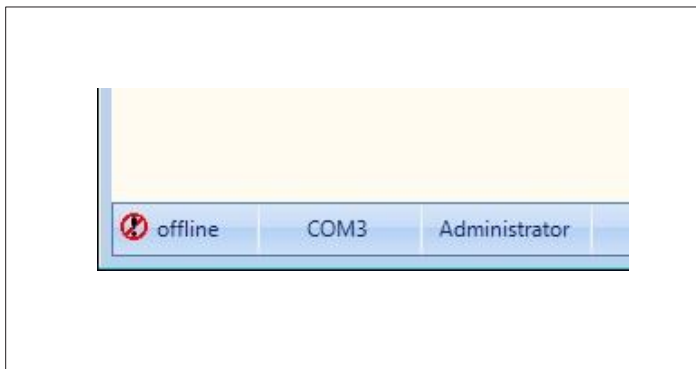


Fig. 68

- An EK 533 plus 2.0 configuration is created in the same way as in online mode, except for the fact that you now need to select "offline" in the "Edit" menu under "Device parameters" for the parameters and under "Audio sequences" for the sounds.
- The created sounds and parameters can be saved locally as described in "Creating and editing sound sequences" and in "Loading and saving configurations". For the parameters, make the following selections: "File" - "Parameter set" - "Read (crossguide -> file)".
- Likewise, configurations created online or offline can be reloaded in offline mode ("File" - "Parameter set" - "Write (file -> crossguide)").
- If you switch to online mode when "Parameters" or the "Audio sequences" form is open, you can overwrite the displayed offline parameters and offline sounds if necessary using the EK 533 plus once a connection is established.

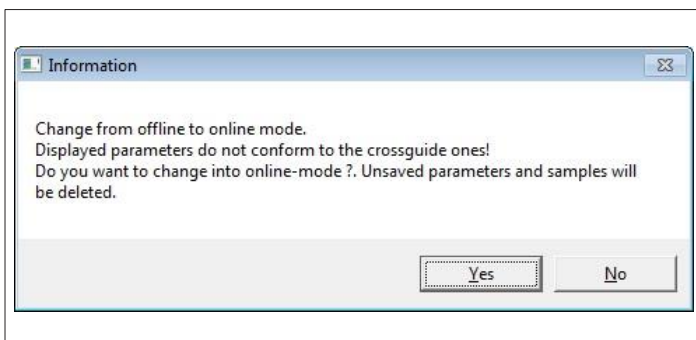


Fig. 69

## Calling up system information/RTC settings

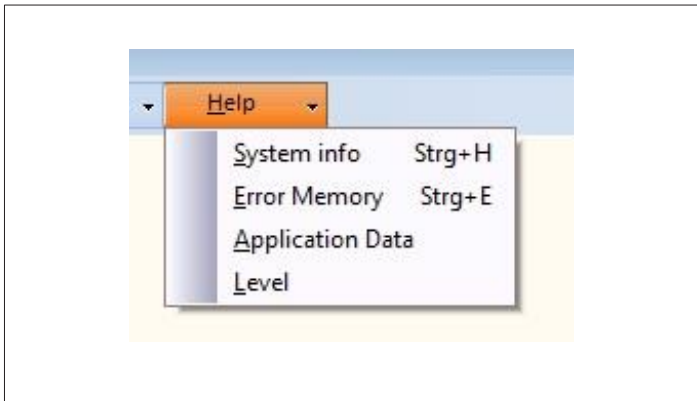


Fig. 70

You can call up the following information on a connected EK 533 plus using the "Help" -> "System info" menu:

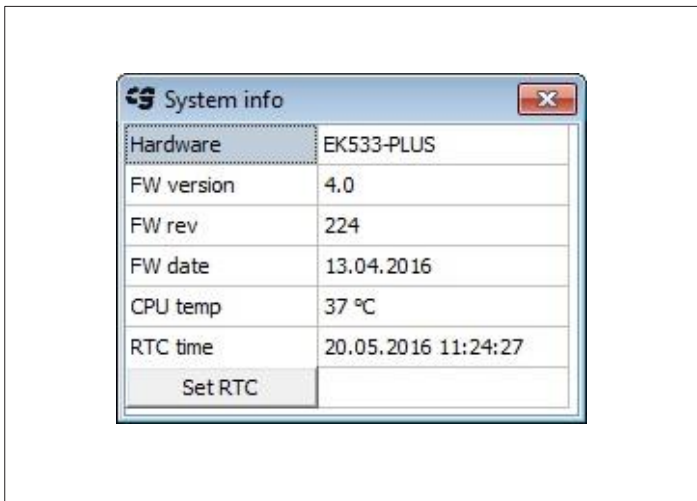
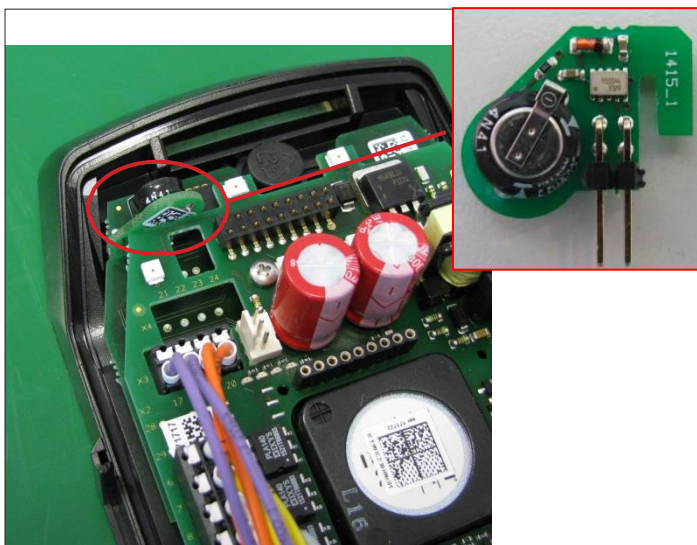


Fig. 71

- Designation of connected device
- Firmware version
- Firmware revision
- Firmware date
- By connecting an (optionally available) RTC module, you can display the temperature of the module and the set time.



RTC module

Fig. 72



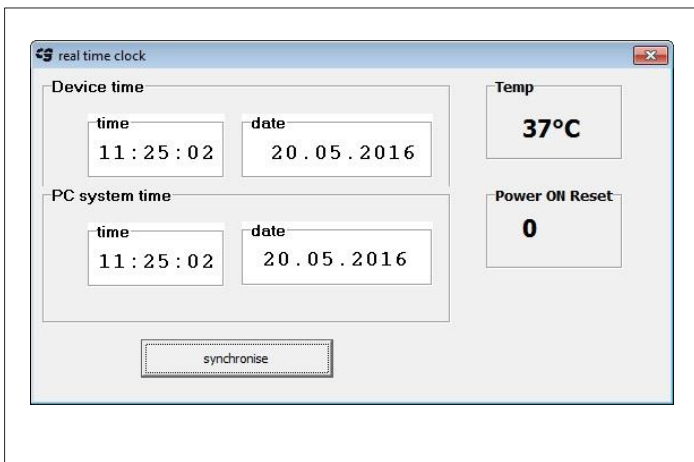


Fig. 73

If you have an RTC, you can synchronise it with the computer if necessary.

- To apply PC time, click the "synchronise" button. Using the "summer-/wintertime" setting, you can tell the RTC whether to switch automatically between summer time and winter time.

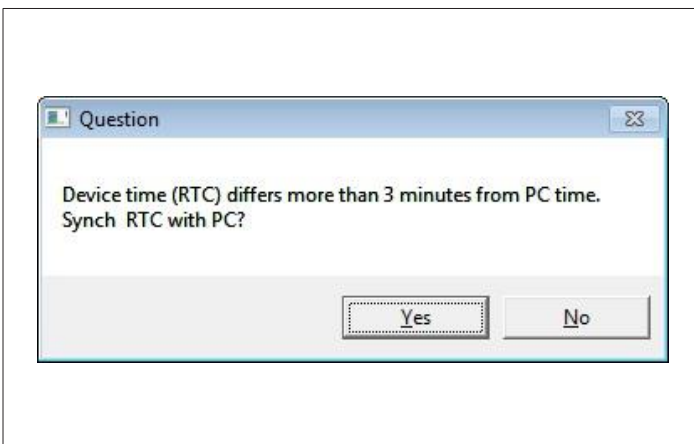


Fig. 74

**Note:**

If you have an RTC, cgManager checks at regular intervals if the PC time is different from the RTC time on the EK 533 plus. If the difference is over three minutes, the user is asked whether synchronisation is required, i.e. whether the RTC time should be set to the PC time.

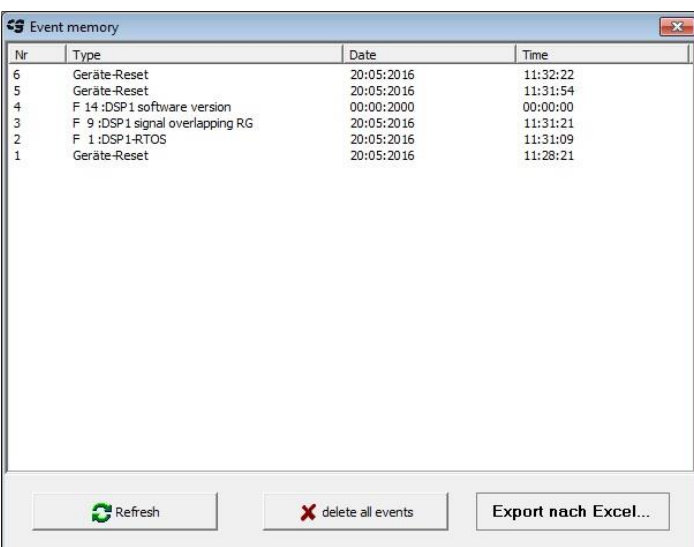


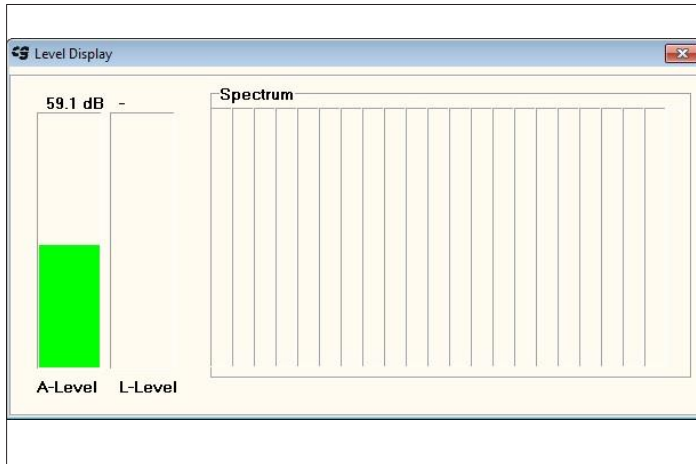
Fig. 75

- You can read out the error memory on a connected EK 533 plus 2.0 using the "Help" -> "Error Memory" menu.
- "Refresh" reads out the events and errors from the EK 533 plus.
- The entries can be deleted from the device or exported to an Excel sheet.
- If you have an RTC module, the entries are time- and date-stamped.

## Application data

- Clicking on the "Application Data" menu opens Windows Explorer and displays the directory where cgManager stores program-specific files.
- So, for example, this is where you will find the program settings or log files.
- **Note!** Do not change these files!

## Level display



- The "Level" menu item opens a window where you can display the ambient volume and frequency spectrum measured by the dynamic module (DSP) for diagnostics purposes.

Fig. 76

## Other settings

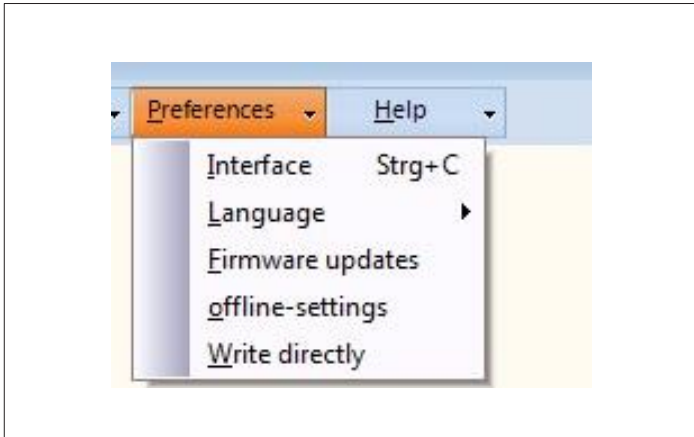


Fig. 77

- Using the "Preferences" menu, aside from the configuration described in the section "Establishing a connection with a Langmatz EK 533 plus 2.0", you can make the following adjustments to the interface:  
**"Language"**  
You can specify the language of cgManager here. After changing this setting, you will need to restart the program.

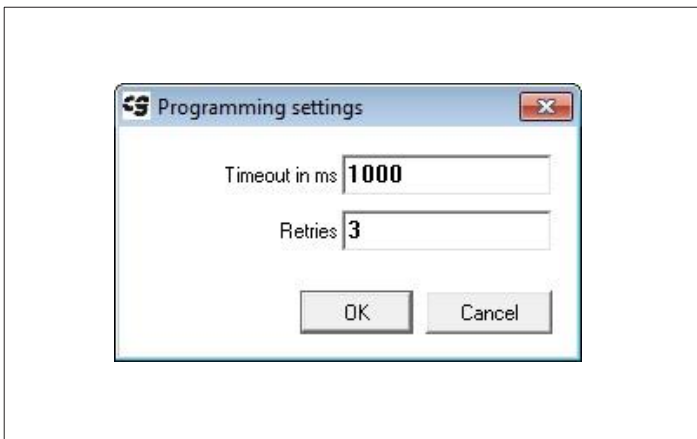


Fig. 78

### "Firmware-Updates"

- Here, you can specify how cgManager responds to connection issues during firmware updates.
- The figure to the left shows the default setting, which does not usually need to be changed.
- If you encounter repeated connection time-outs during firmware updates, increasing these values may correct the problem.

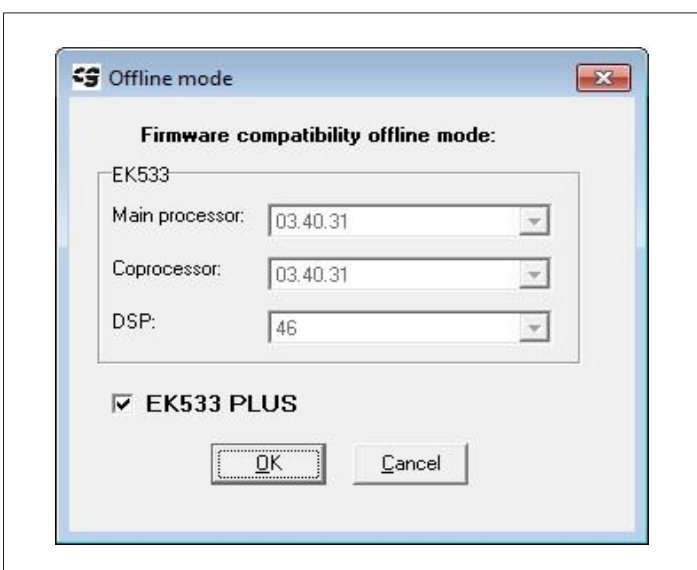


Fig. 79

### "Offline mode"

- This dialogue allows you to specify which firmware should be parametrised in offline mode.

## Keyboard shortcuts

There are keyboard shortcuts for the most important cgManager functions:

- Ctrl+P: Open parameters form (online mode)
- Ctrl+Q: Open parameters form (offline mode)
- Ctrl+A: Open audio sequences (online mode)
- Ctrl+B: Open audio sequences (offline mode)
- Ctrl+C: Open interface selection
- Ctrl+H: Open system info
- Ctrl+E: Display error memory
- Ctrl+W: Close current form

## 9.1 Editing datasets in offline mode

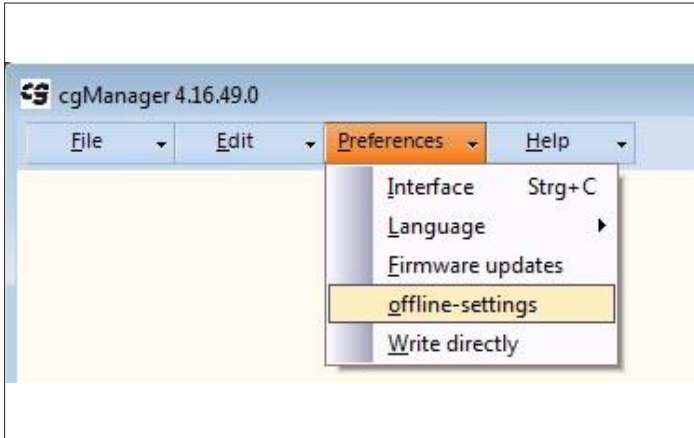


Fig. 80

- Select item "offline-settings" in the "Preferences" menu.

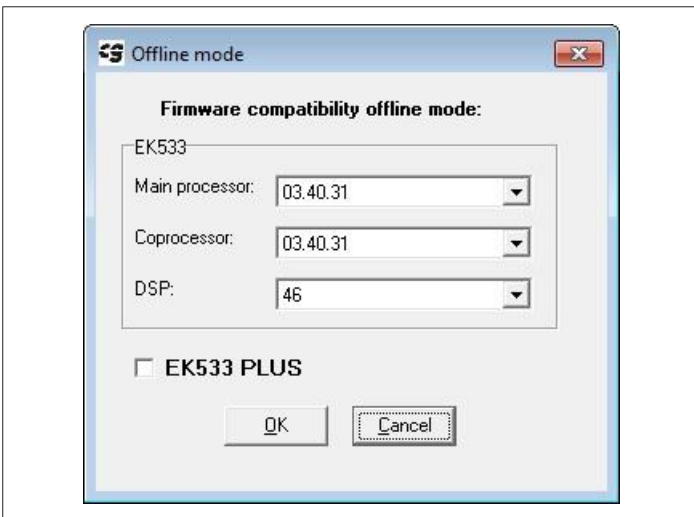


Fig. 81

- This opens the following window (Fig. 87).
- Checking/unchecking the EK 533 plus 2.0 box selects whether to edit an EK 533 plus ("\*.ek533p") or EK 533 ("\*.ekg") dataset.
- The desired hardware must be selected for EK 533 datasets.

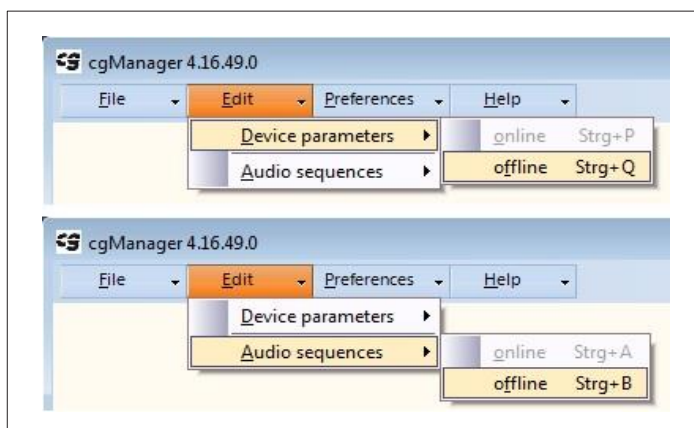


Fig. 82

- In the "Edit" menu, open the "Device parameters" and "Audio sequences" tables.

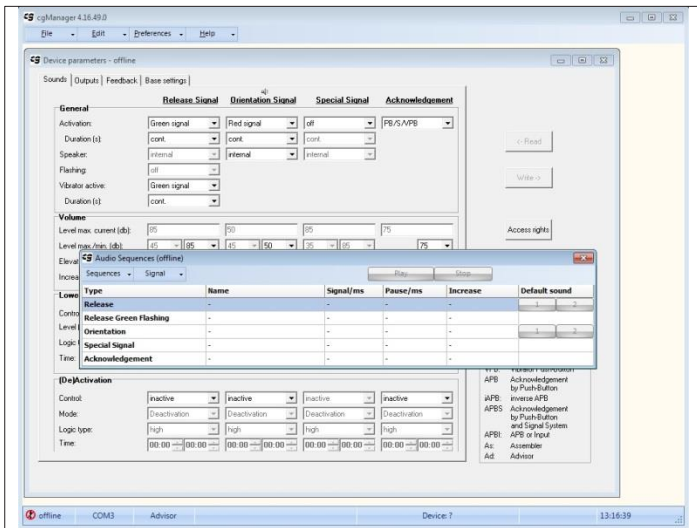


Fig. 83

- cgManager appears with empty tables.

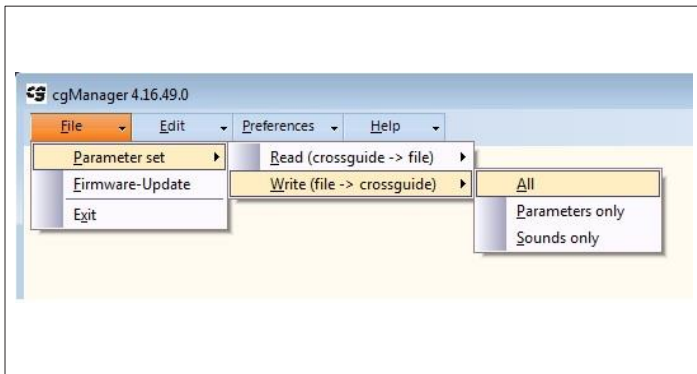


Fig. 84

- Select the desired parameter set as follows:
  - File
  - Parameter set
  - Write (file -> crossguide)
  - All
- Depending on the offline settings, you can select EK 533 or EK 533 plus datasets.
- The tables are populated.
- Make the required changes.

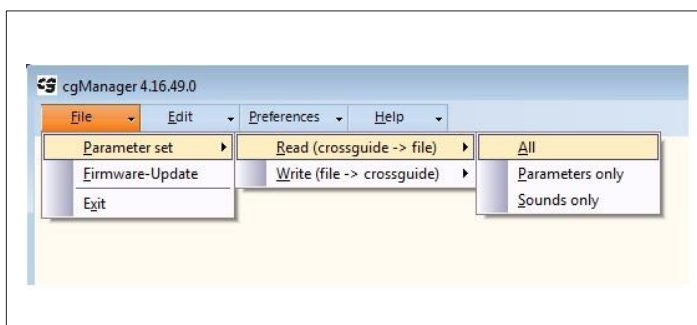


Fig. 85

- To save changes:
  - File
  - Parameter set
  - Read (crossguide -> file)
  - All



## 9.2 Offline conversion of EK 533 datasets to EK 533 plus 2.0 datasets

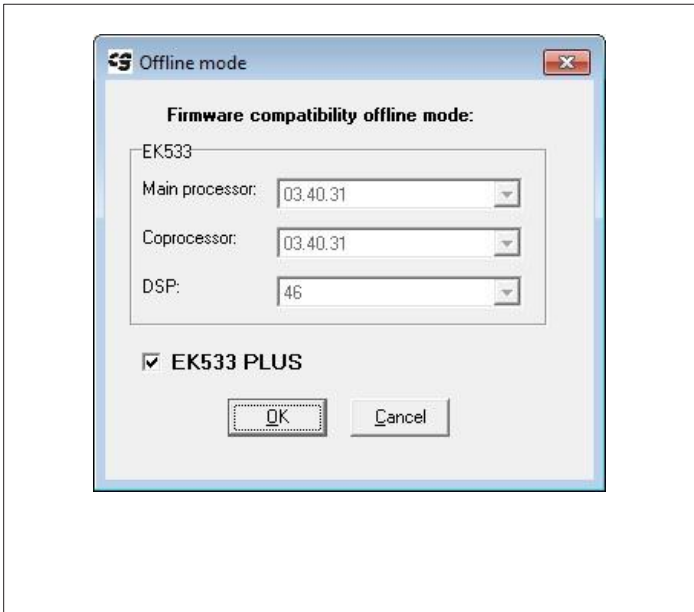


Fig. 86

- Carry out all of the steps in "8.1", Fig. 86 - Fig. 90.
- But check the box for EK 533 plus 2.0 devices.

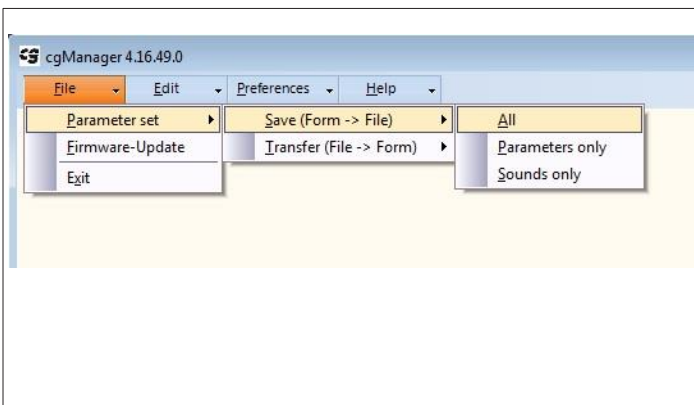


Fig. 87

- To save a dataset:
  - File
  - Parameter set
  - Read (crossguide -> file)
  - All

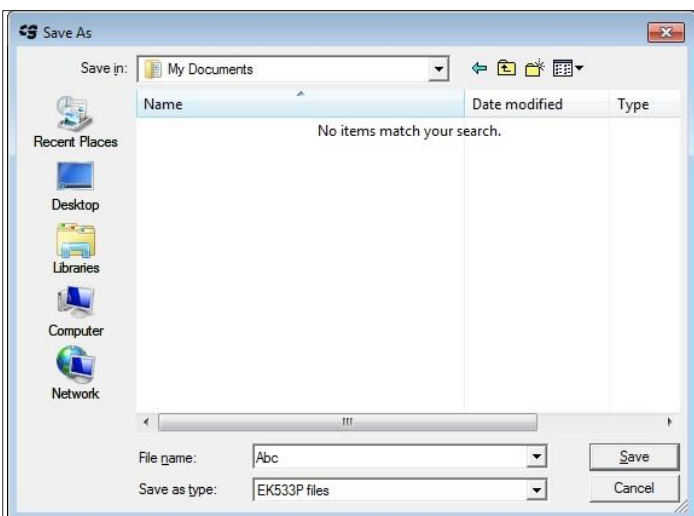


Fig. 88

- Save as a "\*.ek533p" file.
- The dataset is converted.

### 9.3 Online conversion of EK 533 datasets to EK 533 plus 2.0 datasets

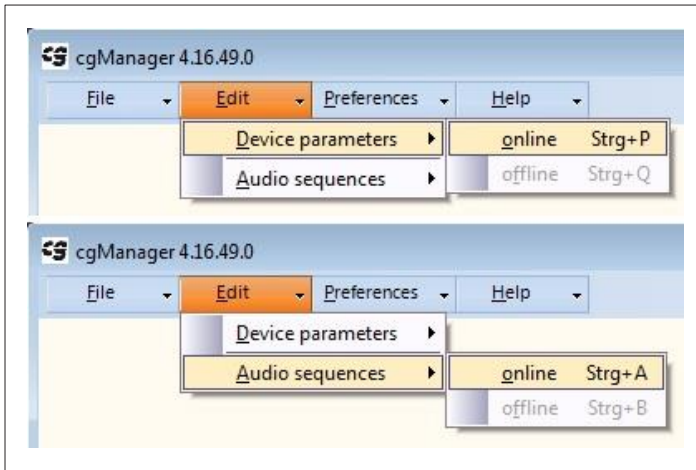


Fig. 89

- Connect the EK 533 to cgManager.
- Using the "Edit" menu, populate the device parameter and audio sequence tables.

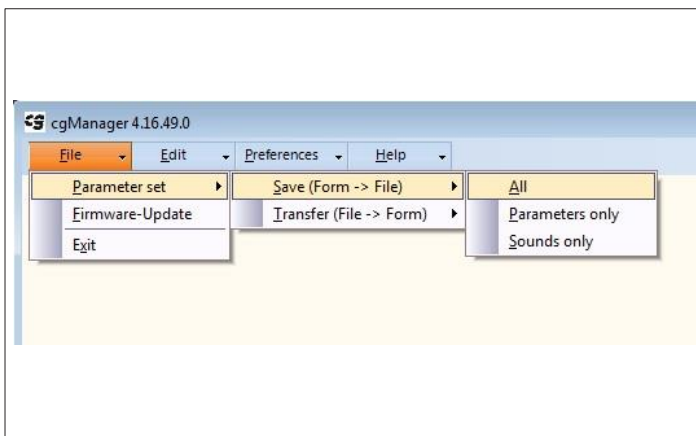


Fig. 90

- To save a dataset:
  - File
  - Parameter set
  - Read (crossguide -> file)
  - All
- Save as a "\*.ek533p" file.
- The dataset is converted.

## 10. Frequently asked questions | cgManager FAQ

Preliminary note:

In general, it must always be ensured that the most up-to-date firmware is present on the EK533 plus 2.0 device and that the latest version of cgManager is used. Last updated: 02 / 24 / 2020

Element	Version
Firmware	4.8
cgManager	4.21.54.0

You can check which versions are installed with cgManager and a connected EK 533 plus 2.0 via "Help" -> "System info".

The version number for cgManager itself is shown in the program title bar.

The software can be updated online (registration required) at the following address:

<http://langmatz.de/en/service/customer-service/>

Issue	Solution
cgManager is displaying "offline" status	<ul style="list-style-type: none"> <li>Using "Preferences" -&gt; "Interface", check that the interface in use is the right one.</li> <li>Ensure that the EK 533 plus connection cable is securely connected to the notebook and the device.</li> <li>If both connections are secure and you are using a CrossCom USB cable, you may need to reinitialise the interface. To do this, close cgManager and remove the cable from the notebook. Wait around 5 seconds, then reconnect the cable and restart cgManager.</li> <li>An "offline" status message can also indicate incomplete firmware. If this is the case, the firmware can be incorporated via "File" -&gt; "Firmware-Update".</li> </ul>
The check box for "Activation" in the "Device parameters" form is checked, but no sound plays.	<ul style="list-style-type: none"> <li>Using "Edit" -&gt; "Audio sequences" -&gt; "online", ensure that the sound is present on the device.</li> <li>Ensure that the "Level max. (dB)" value is sufficient.</li> <li>Ensure that the "Elevation (dB)" value is sufficient.</li> <li>Ensure that night-time reduction or night-time deactivation has not been activated by mistake. It is possible that the logic type is inverted.</li> <li>Check the operating voltage limit</li> </ul>

## 11. Accessories | Overview

### Remote speaker

- Output: Output of orientation and/or release signal (software-configurable)
- Installation height: As per the standard, approx. 2.10 to 2.50 m
- Installation: Easy installation with a strap fastener or screws (not included with delivery)
- Cable length: 3.90 m
- Alignment: Easy alignment of the speaker with the crossing
- Volume: Can be adjusted using EK 533 with "cgManager" configuration software
- Protection class: II (double-insulated)
- Protection rating: IP 64

**Order number, version "Release + OT/Green": 12 533 0460/000**

**Order number, version "Release/Green": 12 533 0460/010**

**Order number, version "Release + OT/Grey": 12 533 0461/000**

**Order number, version "Release/Grey": 12 533 0461/010**

### Remote speaker for triple traffic-light enclosure

- Output: Output of orientation and/or release signal (can be adjusted using software)
- Cable length: 3.90 m
- Volume: Can be adjusted using EK 533 with "cgManager" configuration software
- Protection class: II (double-insulated) when installed
- Protection rating: IP 64 when installed, diameter 200 mm

**Order number, version "Release + OT/Black": 12 533 0462/100**

**Order number, version "Release/Black": 12 533 0462/110**



**Fig. 91**

**Acoustic signalling device crossguide**



**Fig. 92**

**Variant 2: Acoustic signalling device for installation in signal chamber**

## Communication adapter

### Wired communication:

USB parametrisation cable for parametrisation and software updating of the EK533.

**Langmatz order no.: 125330989S**



**Fig. 93**  
**USB cable**

### Communication by Bluetooth:

Bluetooth dongle and Bluetooth stick for wireless parametrisation of the EK533.

#### Bluetooth dongle:

An essential solution, e.g. for adjusting the volume from the middle of the crossing.  
Also a convenient connection for operating the devices in bad weather.

This is plugged into the interface on the outside of the EK533 for the duration of parametrisation.



**Fig. 94**  
**Bluetooth dongle**

#### Bluetooth USB stick:

This is used as a counterpart for the Bluetooth dongle.

Bluetooth dongle and Bluetooth USB stick available from our partner:

SER Elektronik GmbH  
Zeissweg 6  
D-59519 Möhnese, Germany

Tel.: +49 292497 17-0  
Fax: +49 292497 17-45  
E-mail: [info@ser-elektronik.de](mailto:info@ser-elektronik.de)



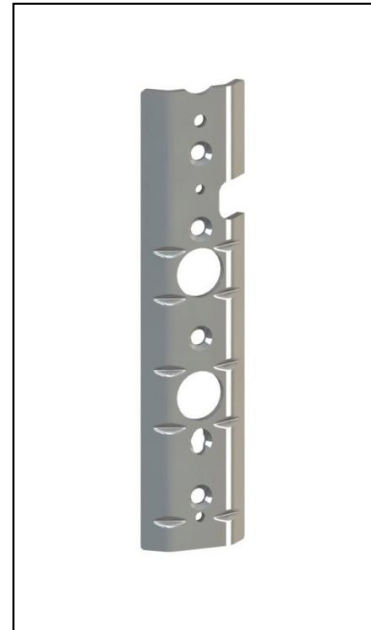
**Fig. 95**  
**Bluetooth USB stick**

**Bluetooth dongle order no: 125330998**

**Bluetooth USB stick order no: 125330999**

## Lighting-pole adaptors (stainless steel)

- Lighting-pole adaptor for large poles (diameter of 180 mm - 300 mm)  
**Order no.: 125330992**
- Wall adapter for straight surfaces  
**Order no.: 125330993**
- Universal lighting-pole adapter (up to a diameter of 159 mm), suitable for the following threaded holes:
  - Langmatz EK 233
  - Langmatz EK 433 (long/short)
  - Wai TB
  - RTB
  - Urich
  - EK 98
  - Kringer**Order no.: 125330994**
- Large poles, universal (diameter 180 - 300 mm), suitable for the following threaded holes:
  - Langmatz EK 233
  - Langmatz EK 433 (long/short)
  - Wai TB
  - RTB
  - Urich
  - EK 98
  - Kringer**Order no.: 125330995**



**Fig. 96**  
"Universal" lighting-pole adaptor



## Remote control (see PC)

- Windows 7
- 2 USB ports
- Ethernet connection
- Size: 262 (W) x 178 (D) x 25.9-36.5 (H) mm
- + Installed cgManager
- + USB parametrising cable
- [Other versions available on request](#)



Fig. 97  
eee PC

## cgManager software

- Compatible with Windows XP/VISTA/Windows 7, 8 and 10 for setting, saving and archiving EK 533 plus 2.0 device parameters
- **cgManager download:**  
<https://langmatz.de/en/service/customer-service/> Download portal:  
<https://kundenportallangmatz.globalconcepts-cloud.de/Login.html>

## Drilling jig

- Attaches to the pole easily with a strap fastener or similar (not included with delivery).
- For convenient drilling of mounting holes for the EK 533.
- Advantages:
  - No need to affix drilling template.
  - Drill guided accurately.
  - Drill does not "slip" on the pole.
  - Maintains exact distance between holes.
  - Guarantees perfectly aligned button installation.

Order no.: **700663003**

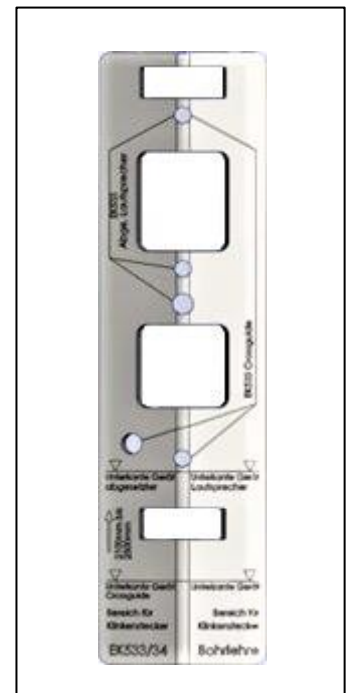


Fig. 98  
Drilling jig

## 12. EC Declaration of Conformity

The product meets the requirements of the following applicable harmonisation directives:

2014/30/EU	Electromagnetic Compatibility (EMC)
2014/35/EU	Low Voltage Directive (LVD)

The following standards were complied with:

DIN EN 50293:2013 (EMC)  
DIN EN 50556:2019 (LVD)  
DIN 32981:2018-06  
DIN EN 50128:2014  
DIN EN 50129:2019

The EU Declaration of Conformity for this product can be requested from Langmatz GmbH.

## 13. Material defects

Langmatz GmbH accepts liability for material defects in the "Langmatz EK 533 plus 2.0" pedestrian signal requesting device as defined in §434 BGB (German Civil Code) for 24 months, starting from the date on the purchase receipt.

Under this liability, all parts damaged by manufacturing faults or material defects shall be replaced or repaired free of charge.

The purchaser must report any deficiency complaints immediately in writing. Claims for damages by the purchaser due to material damage or whatever legal reason shall not be accepted.

Our liability does not include any damage or defects caused by

- improper use,
- natural wear and tear or
- the intervention of third parties.

We accept no liability for damage caused by force majeure or transport.

Repairs due to a deficiency complaint shall not extend the warranty period for the replaced parts or the product.

By choosing the "EK 533 plus 2.0", you have purchased a high-quality product with state-of-the-art technology. Nevertheless, if you should experience any problems with it, please contact the hotline (see reverse).

## 14. Quality management

Langmatz GmbH's quality management system is certified according to DIN EN ISO 9001.

## 15. Disclaimers

The information in this technical document is presented appropriately and correctly according to technical regulations and to the best of our knowledge. However, this does not confer any guarantee of particular characteristics. The operator of the products supplied by Langmatz GmbH is expressly obliged in this context to decide, based on his/her own judgement, whether the products are suitable and appropriate for the application or use being considered. The product liability pledged by Langmatz GmbH exclusively applies to our conditions of sale, delivery and payment. The liability of Langmatz GmbH is excluded in the event of incidental, indirect damage and subsequent consequential damage, in addition to damage which is the result of using the product for a purpose other than the advertised intended purpose.

## 16. Contacts

Langmatz GmbH Am  
Gschwend 10  
82467 Garmisch-Partenkirchen  
Germany

Our hotline: [+49 \(0\)8821 920 137](tel:+49(0)8821920137)  
Telephone: +49 (0)8821 920-0  
E-mail: [info@langmatz.de](mailto:info@langmatz.de) Internet:  
[www.langmatz.de](http://www.langmatz.de)

